12 April 2023

Tēnā koe

Failing Streetlights

The Wellington City Council (the Council) has received several requests made under the Local Government Official Information and Meetings Act 1987 (the Act) regarding failing streetlights in Wellington. For transparency we have combined these requests and are publishing our response.

In early February 2023, a media article detailed the experience of a resident who had identified a streetlight that had fallen from its pole, posing a public health and safety risk. The Council's top priority is to ensure the safety of our community. We are working urgently to fix the failures of the light fittings. Given the health and safety risks and potential danger to members of the public, we would ask that anyone who notes a drooping or hanging light, to contact the Council as a matter of urgency, on 04 499 4444.

Why did the Council change the streetlights?

The Council began work in 2017 to change all existing high pressure sodium lights to more energy efficient LEDs, with the rollout occurring in 2018. This project had tight time frames, as the Council was able to receive an 85% subsidy from Waka Kotahi for the project, saving the Council approximately $15m. There was some concern, due to Wellington's hilly landscape, that glare issues would result if we changed to LED lights. The Council engaged with several delivery partners to expedite the project, one of them being Gess Limited. Gess Limited was contracted by the Council to co-design, fabricate, test, and produce an item called a spigot, better known as a knuckle adaptor (adaptor). The adaptor connects the lamp to the pole allowing a greater degree of tilt, thereby greater control over light spillage or glare. Four contractors - Downer, Fulton Hogan, Higgins, and City Electricians - were then hired to install the new lights.

When was the Council first notified of the issue?

The Council was first notified by the public of drooping streetlights in late 2018. The Council brought this to the attention of Gess Limited, who undertook an assessment to determine the cause of the issue. As a gesture of goodwill, Gess Limited replaced the identified failing adaptors free of charge.

Council staff were alerted again to the issue in October 2020 when a report came through from the maintenance contractor, Fulton Hogan. The Council was advised that this wasn't a widespread issue, and the cause was due to a small faulty batch of adaptors. However, due to the nature of the rollout, it was impossible to find exactly where these had ended up on the network. Any reports of a drooping streetlight were recorded as a dangerous hazard. Contractors had to fix within two hours of reporting (weather dependent).

(See items: First notification of issues)

What testing was undertaken before the roll out?
Gess Limited used a third party to undertake the testing. The testing regime for the adaptor prior to mass production was a static load test. They were fatigue tested and destruction occurred at around 60kg static weight.

The adaptor came with the following certifications:

- Design life - 25 years
- Importance - level 1
- Terrain - category 2
- Wind region - W
- Height above ground - 12m
- Luminaire sail area - 0.1m^2 and 19kg (Italo 3)
- Topographic multiplier (lee zone and hill shape) - 1.0

(See items: Testing of the adaptor)

What caused the failure?
After noticing an issue in late 2018, Gess Limited undertook an assessment to find the cause. They believed that the root cause of the failure was metal fatigue on the outreach arm side of the adaptor. This could have been attributed to the below factors:

- Higher wind/wind gusts than designed for.
- Internal casting defect (Bubble).
- Installation damage or adaptor knocked/dropped prior to installation.
- Car/truck reversing into or hitting a pole.
- Over torque.

The Structural Engineer also noted that the consequence of failure is also low and does not represent a hazard to human life as the cable prevents the luminaire from falling. (Hence the importance level 1.)

(See items: Testing of the adaptor)

What is the Council doing to fix the issue?
To mitigate the risk to the public, the Council developed a remediation plan based on levels of risk. The adaptors from heavier lamps in high wind areas (approximately 3,200) are being removed first as these have more risk to members of the public. Approximately 600 streetlight adaptors have now been removed to date. We will continue to refine our plan and progress with securing more resources to quickly fix streetlights.

We have asked our contractors to check the adaptors every time they go to a streetlight, regardless of the reason they are there. Lights with failing adaptors are fixed immediately.

Due to the nature of the failures, and risk to public safety, we are treating every failure as a dangerous hazard. This means that our contractors are required to resolve the issue within two hours of being reported (weather dependent), regardless of the streetlight being in a high wind area or not.

Our processes at the time were not up to standard. The Council is undertaking an internal audit to assess what went wrong and how to avoid this issue happening again.

(See items: Council reports)

What is the outcome of the independent review?
The Council commissioned WSP (an external laboratory) to test the adaptor that was used for streetlights. The testing showed that, despite the adaptors being able to carry a static load of up to 60kg, they were unsuitable for Wellington's windy conditions and were fatiguing over time. The outcome of the testing showed that in order for the adaptors to fail, they would need to be:

- Experiencing high wind loads, due to flow of wind.
- High wind speeds.
- Topographical multipliers (lee zone, hill shape, bodies of water).
- Higher than expected drag from the luminaire (pull of streetlight).
- or a combination of the above.

(See item: Testing of the adaptor – Item 6)

What signs should members of the public look out for?
People should watch out for streetlights that are hanging or drooping from the pole or swaying in the wind. Should you see this, please call the Council immediately on 04 499 4444.

Example below:

How many complaints have been received/reported?
From the records we hold, we have ascertained the following with regards to the failures:

- Since the first lights were installed in late 2017, there have been 161 reports of drooping/hanging lights. (Failure rate = 0.1%)
- 17 streetlight lamps have fallen to the ground in the last four years.
- None of the reports involved injuries or serious harm to members of the public.
- Issues have been reported throughout the city and not concentrated on any particular suburb. If you see an issue, please report immediately.

What is the total cost to date to repair failing streetlights?
As of 13 March 2023, the total cost to repair is $212,916. These costs include the replacement of the light, outreach arm and pole in some instances. This will increase as we expedite the replacement of streetlights.

The cost of the remedial work is expected to be $6m to complete and the Council is seeking funding assistance from Waka Kotahi. The Council intends to fund its share through borrowing.

Information released:

First notification of issues:

Item	Document name/description	Decision
1.	Spigot Delivery 4-9-18 - 5 October 2018	Release with redactions
2.	Hanging light Taranaki street - 8 October 2020	Release with redactions

Testing of the adaptor:

Item	Document name/description	Decision
3.	WCC Spigot Schedule - 24 November 2017	Release with redactions
4.	WCC Aluminium Spigot Adaptors - 7 December 2017	Release with redactions
5.	Spigot Adaptor - Dangerous Street Lamp - 10 September 2019	Release with redactions
6.	Independent Review External Laboratory- Adaptor Load Testing 02-2023	Release with redactions

Council reports:

Item	Document name/description	Decision
7.	Streetlight article Councillor Comms– 10 February 2023	Release with redactions
8.	Memo - Failing knuckle adaptors (spigots) - 21 February 2023	Release with redactions
9.	Streetlight plan - 13 March 2023	Release with redactions
10.	Streetlight update presentation – 12 April 2023	Release

Other correspondence, design and delivery of project:

Item	Document name/description	Decision
11.	LED Notes and Installation Technical Specs- 13 July 2017	Release with redactions
12.	Update - 1 August 2017	Release with redactions
13.	Spigot Adaptors - 9 August 2017	Release with redaction
14.	WCC Adapter Sizes - 15 August 2017	Release with redactions
15.	Spigot Adapters - 30 August 2017	Release with redactions
16.	Quote Q001548 from Gess Ltd - WCC Adjustable Spigots - 1 September 2017	Release with redactions
17.	Supply Agreement – Luminaires	Withheld in full
18.	WCC Adjustable Spigots - 12 September 2017	Release with redactions
19.	WCC Adjustable Spigots - 15 September 2017	Release with redactions
20.	Quote Q001624 from Gess Ltd - 29 September 2017	Release with redaction
21.	WCC Spigots -18 October 2017	Release with redactions
22.	Drawings for Approval - October 2017	Release with redactions
23.	Drawings for Approval - 24 October 2017	Release with redactions
24.	WCC Spigot Adapters - 24 October 2017	Release with redactions
25.	Quote Q001660 from Gess Ltd - WCC Spigot Adapters - 25 October 2017	Release with redactions
26.	Drawings - WCC Spigot Adapters - 8 November 2017	Release with redactions
27.	Drawings - WCC Spigot Adapters - 9 November 2017	Release with redactions
28.	Spigot Coatings - 20 November 2017	Release with redactions
29.	Aluminium Casting for Spigots 22 November 2017	Release with redactions
30.	Spigot drawings - Temp Spigot Adapters - 29 November 2017	Release with redactions

31.	Quote Q001756 from Gess Ltd - 29 November 2017	Release with redactions
32.	WCC Adjustable Spigot Adaptors - 1 February 2018	Release with redactions
33.	WCC Temporary Spigot Adapters - 1 February 2018	Release with redactions
34.	Delivery of Aluminium Spigots - 14 February 2018	Release with redactions
35.	PO & Invoices - 5 March 2018	Release with redactions
36.	Knuckle Adaptor - Auxilary power outlet - 21 March 2018	Release with redactions
37.	Luminaire Assembly Procedure-2	Release

Tender/Contract information:

Item	Document name/description	Decision
38.	WCC LED Documents - 21 July 2017	Release with redactions
39.	FW Supply Agreement - 9 August 2017	Release with redactions
40.	Notice to tender - 15 August 2017	Release with redactions

Updated information:

Item	Document name/description	Decision
41.	Structural Validation of Luminaire Adaptors - January 2018	Release with redactions

Reasons for decisions:
Some information has been withheld under sections:

- 7(2)(a) to protect the privacy of individuals.
- 7(2)(b)(ii) to protect information where making available of the information would be likely unreasonable to prejudice the commercial position of the person who supplied or who is the subject of the information.
- 7(2)(f)(i) to maintain the effective conduct of public affairs through the free and frank expressions of opinions by or between or to members or officers or employees of any local authority.
- 7(2)(f)(ii) to maintain the effective conduct of public affairs through the protection of such members, officers, employees, and persons from improper pressure or harassment.
- 7(2)(g) to maintain legal professional privilege.
- 7(2)(h) to enable any local authority holding the information to carry out, without prejudice or disadvantage, commercial activities.

With respect to the information that has been redacted or withheld, I do not consider there are any other factors which would render it desirable, in the public interest, to make the information available.

Kind regards

Asha Harry
Official Information

Asha Harry

From: [redacted]
Sent: Friday, 5 October 2018 7:07 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Re: FW: Spigot Delivery 4-9-18

Thanks [redacted],
Will be important to get all the locations, so engineers have as much data to look at.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions/lighting

On Fri, 5 Oct 2018 at 16:16, [redacted] wrote:

> Hi [redacted]
>
> We don't remember the exact locations of the broken knuckle adaptors, but here are some locations;
>
> i. Stewart drive

ii. Bracken Rd

iii. Jackson St

iv. 112 the Parade

I will check again with [redacted] on Monday if he could remember any of the location.

Thanks & regards,
[redacted]

[redacted]

Street Lighting Engineer | Transport & Infrastructure | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Friday, 5 October 2018 10:28 a.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: FW: Spigot Delivery 4-9-18

Hi [redacted]

Please send to:

[redacted]

ACH Consulting Engineers

[redacted]

[redacted]

[redacted]

[redacted]

Please also do not forget to sent us the pole locations as requested.

Rgds

[redacted]

Gess Ltd

[redacted]

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destroy any hard copies of it and notify the sender. You must not, directly or indirectly, use, disclose, distribute, print, or copy any part of this message if you are not the intended recipient. No confidentiality or privilege is waived or lost by any such mis-transmission or error.

On Fri, 5 Oct 2018 at 09:14, [redacted] [redacted] wrote:

Hi [redacted]

The reason for the longer lead time in initial delivery time frames was so they could be tested.

These were fatigue tested extensively prior to production. They were then also tested to failure with incremental 5kg weights up to 65kg.

They all came through with flying colours.

Can we please have the pole location of the failures.

I have asked ACH consulting engineers to send us their delivery address for them to have a look at.

Rgds

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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On Fri, 5 Oct 2018 at 08:19, [redacted] wrote:

> Hi [redacted]
>
> The first knuckle adaptor that broke was assumed to be because of the car hit but the others were not the same case.
>
> It is always the lantern holding side of the knuckle that snaps off, as it does not have the additional support at the joints like the one on outreach side.
>
> I think there were 2 broken knuckle adaptors taken away by Janet on her last trip. If you haven't been provided I can arrange for 2 of them to be sent to GESS.

Could you please resend the address for delivering those adaptors. We would like them tested by you.

Thanks & regards

[redacted]

[redacted]

Street Lighting Engineer | Transport & Infrastructure | Wellington City Council

[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Tuesday, 25 September 2018 6:59 p.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: FW: Spigot Delivery 4-9-18

Hi [redacted],

We had spoken to [redacted] about it. He was going to send up the 2 that he had to the consulting engineers to check over.

I stand to be corrected, but my understanding was that he investigated further and found that damage was done when a truck backed into the pole? with the ensuing whiplash it caused failure.

The QA testing was no failure on fatigue, and the loading failure (test to destruction) only occurred at weights of 60kg and over, which is well in excess of what is needed.

Whilst we went through the rigorous QA process and they all passed with flying colours, there always remains a possibility of some small failure %.

There is an international acceptance standard I think somewhere between 98% and 100%, but I will confirm and revert.

We are happy to get the structural engineers to look at some of the failures to see if anything is of concern. I sent the address to [redacted]

Rgds

[redacted]

Gess Ltd

[redacted]

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On Tue, 25 Sep 2018 at 09:06, [redacted] wrote:

Hi [redacted]

I believe you also had a look at the broken knuckle adaptors.

I was at the maintenance contractor's yard last night and I saw around 5 knuckle adaptors that were snapped off on the luminaire side. And I was advised that there are more than 10 broken down in just 7 months.

Kindly have a look into it and advise us on it.

Thanks & regards,
[redacted]

[redacted]

Street Lighting Engineer | Transport & Infrastructure | Wellington City Council
[redacted]
W Wellington.govt.nz |

From: [redacted]
Sent: Tuesday, 25 September 2018 8:27 a.m.
To: [redacted]

Cc: [redacted]
Subject: [SPF: Suspicious Sender] RE: FW: Spiggot Delivery 4-9-18

Hi [redacted],

I have arranged the supply of 300 – M8 x 20mm S/S Grubscrews to be delivered to Downer (NZ) Ltd attention [redacted].

Regards

[redacted]

Logistics Co-ordinator

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway extension and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

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http://www.valmont.com/home/products-and-solutions

From: [redacted]
Sent: Friday, September 21, 2018 7:34 AM
To: [redacted]
Cc: [redacted]
Subject: Re: FW: Spiggot Delivery 4-9-18

Hi [redacted]

Apologies for the delay in response.

It would be great if you could send the additional screws to the following address;

Downer NZ Ltd,
[redacted]

Kindly get the materials delivered at the earliest.

I believe you had a look at the seized knuckle adaptors, what shall we do in regards to those seized materials?

Please advise.

Thanks & regards,

[redacted]

[redacted]

Street Lighting Engineer | Transport & Infrastructure | Wellington City Council
[redacted] | **W** Wellington.govt.nz | |

From: [redacted]
Sent: Tuesday, 4 September 2018 3:39 p.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: FW: Spiggot Delivery 4-9-18

Hi [redacted],

I apologise if I have received this, but I do not recall.

We included a substantial amount of spare grub screws in the two shipments, around 500 from recollection.

It may pay checking with which contractor as to who is sitting with addtional spares.

We will however get an additional 300 x grub-screws ordered and delivered.

Please confirm a delivery address/contact.

Thanks

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

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On Tue, 4 Sep 2018 at 14:38, [redacted] wrote:

> Hi Gents,
>
> We are still receiving the shortage of grub screws issues. And our contractors are using the grub screws from the next box.

I don't know the exact numbers but I can get the contractors to give an approximate number.

Could you please confirm whether the spare screws could be arranged?

Kind regards,

[redacted]

[redacted]

Street Lighting Engineer | Transport & Infrastructure | Wellington City Council
[redacted] | **W** Wellington.govt.nz | |

From: [redacted]
Sent: Tuesday, 4 September 2018 2:13 p.m.
To: [redacted]
Subject: Spiggot Delivery 4-9-18

Hi [redacted],

We received 40 boxes of 10 42-60mm spiggots.

We note that a few of the boxes have been short supplied on the grub screws.

Kind regards

[redacted]

[redacted]

City Electricians Wellington Ltd

[redacted]

[redacted]

Asha Harry

From: [redacted]
Sent: Thursday, 8 October 2020 8:32 am
To: [redacted]
Cc: [redacted]
Subject: FW: Hanging light Taranaki street

Importance: High

Hi [redacted]

Thanks a lot for the photos with the updates. Much appreciated, indeed.

Kind regards,

[redacted]
(BE Mechanical – CPEng EA)
Engineer Street Lighting | Transport & Infrastructure | Wellington City Council
[redacted] | W Wellington.govt.nz |

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

From: [redacted]
Sent: Wednesday, 7 October 2020 4:20 pm
To: [redacted]
Subject: FW: Hanging light Taranaki street

Hi [redacted]

As requested, photos of Taranaki Street.

[redacted]
Contract Administrator
Fulton Hogan
[redacted]

Fulton Hogan Living Safely

From: [redacted]
Sent: Wednesday, 7 October 2020 3:06 pm
To: [redacted]
Subject: FW: Hanging light Taranaki street

Please see below

[redacted]
Contract Manager |Electrical Department | Fulton Hogan Ltd
[redacted]

From: [redacted]
Sent: Wednesday, 7 October 2020 2:05 PM
To: [redacted]
Subject: Hanging light Taranaki street


166 Taranaki st hanging
light

Sent from my iPad

Asha Harry

From: [redacted]
Sent: Friday, 24 November 2017 10:07 pm
To: [redacted]
Cc:
Subject: [SPF: Suspicious Sender] WCC Spigot Schedule

Hi [redacted]
Just heard back from Valmont.

The will be a delay with the alternative Material procurement.
If the mould all goes according to plan and no further adjustments are needed we should get our samples here for testing end of 2nd week of December.
We will take approximately 1 week to 10 days to do our testing here, hopefully with flying colours.
We will have staff pushing this through prior to Christmas.

From the time of sample approval, there is a 5 week manufacturing period.
This takes us to around the 20 January.
1 week pack and 4 weeks transit take us to end of February.

I understand that this is not the news you were hoping for, but we are all working hard to make it happen as fast as possible whilst still delivering a quality product.

If you wish to powdercoat, please add an additional 10 days to the lead time.
Please let me know about your finish choice - maybe half/half?

I can ask Valmont to see if they can get a couple of thousand on an expedited delivery, but I think that it would not be worth the cost involved.
Let me know if you wish to pursue that.

I wont phone you as it is a bit late, but feel free to give me a call on Monday.

Rgds

[redacted]

Gess Ltd

[redacted]

Gess Ltd will be closed from Wednesday 12pm 20 December 2017, and will reopen on Monday 08 January 2017. Thank you for your support throughout the year and have a very Merry Christmas!

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

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Asha Harry

From: [redacted]
Sent: Thursday, 7 December 2017 9:41 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Fwd: WCC Aluminium Spigot Adapters (External E-Mail)
Attachments: 472869507139994316.jpg; 99105796281736541.jpg; 892738815257789699.jpg; 299608882489144261.jpg; 26688311908855834.jpg; 357383844690065919.jpg

Hi Gentlemen,
Photos of 1st samples.

They have been couriered today to us for testing. we are expecting them early next week, then we are into 7 days of testing.

Rgds

[redacted]

Gess Ltd
[redacted]

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VALMONT/CEES
90
60
30
0

Asha Harry

From: [redacted]
Sent: Tuesday, 10 September 2019 7:29 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Spigot Adaptor - Dangerous Street Lamp
Attachments: image001.jpg; image002.png; image003.png; image004.jpg; image005.jpg; Gess Ltd Mail - Spigot Adaptors.pdf; Recommended Adapter Installation Method.pdf; Pneumatic screw driver Report..pdf

Hi [redacted],
Firstly thank you very much for your patience, we have had numerous parties involved across 3 different time zones in this investigation.

The supplier completed a static load test as witnessed by Valmont prior to mass production. We also tested 12 spigots here in NZ under ACH direction using accelerated fatigue conditions.
Additionally these same spigots used in fatigue testing were then tested to destruction (This occurring at around 60kg static weight).

Based on information provided by yourselves and our investigations we believe the following factors may have contributed to the failures:

1. Higher wind/wind gusts than designed for,
2. Internal casting defect (Bubble)
3. Installation damage or spigot knocked/dropped prior to installation
4. Car/Truck reversing into or hitting a pole (As raised by one contractor)
5. Overtorque

The spigots were designed and certified for:

- Design life = 25 years
- Importance level 1.
- Terrain category 2
- Wind region W
- Height above ground = 12m
- Luminaire sail area 0.1m^2 and 19kg (Italo 3)
- Topographic multiplier (lee zone and hill shape) = 1.0

A number of things could lead to a wind pressure higher than the designed pressure including local gusts, column location (lee zones, hills, near bodies of water). In the ACH design [redacted] (the Structural Engineer) also noted that the consequence of failure is also low and does not represent a hazard to human life as the cable prevents the luminaire from falling (hence importance level 1).

Regarding any potential casting issue, we were unable to find any industrial standard that specifies the qualification for aluminium cast products as structure and designs vary. The US office has also confirmed that such event could happen but they also highlighted that if this was a manufacturing issue, the percentage of failure would have been much higher than the 22/15000, experienced so far, bearing in mind that not all spigots failed for the same reason.

We are also of the opinion that any additional testing will still not resolve this question with any more certainty.

As a gesture of good faith we are prepared to replace the current batch of broken adaptors free of charge. We would also like to draw your attention to the need to ensure that the adapters are installed correctly and ask that any installers who may not have received our instructions as emailed on the 1 November 2018 are made aware of the correct way of installing and torquing the bolts. Please do not overtighten any of the bolts or grub screws. I have attached 2 x PDF's again.

We will arrange for the adapters to be replaced as soon as possible. It would be very helpful if in the future the exact location of all failed adapter could be recorded so that we can better understand the cause of any potential failure.

Thank you [redacted] for your patience with this, it is very much appreciated

Kind Regards

[redacted]

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GESS
COLUMNS & STREETLIGHTS

[redacted] [redacted]

Spigot Adaptors

1 message

[redacted] 1 November 2018 at 13:26
To: [redacted]
Cc: [redacted]

Hi [redacted]

Over-tightened Nuts/bolts:

We have done some instigation wrt squalled nuts on the central bolts and Valmont have supplied us with their assembly procedure (attached).
All those bolts and nuts were assembled with a torque wrench with a low torque setting. The nuts were all able to be un-tightened by hand, this we will attest to with all test samples.

We believe that what is happened with the electrical contractors is that whilst undoing these - most would have resulted from the switch on their pneumatic tools not being set to reverse (As we have all done with hand drills/socket sets etc) and they inadvertently would have tightened the nuts onto the bolts when trying to loosen them. This would have been a very harsh tighten.

Broken Adapters:

We would like to do further analysis on the broken ones, we only have one sample here, can you please also send us the additional broken ones, to our address below.
Once they are here we will send off to laboratory for further analysis.

For some additional strength, though not critical, we suggest that the scale be installed facing down (See attached)

Can you also please let us know how many spigots have been installed to date?.

Thanking you

[redacted]

Gess Ltd

[redacted]

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2 attachments

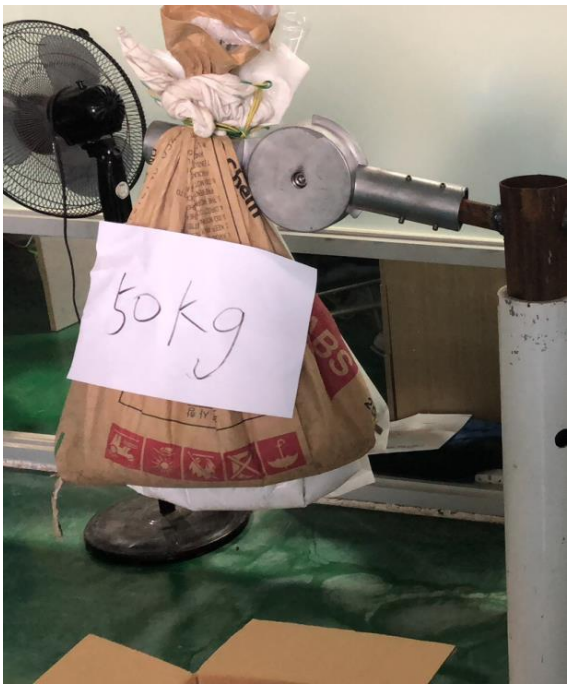
Recommended Adapter Installation Method.pdf
295K

Pneumatic screw driver Report..pdf
344K

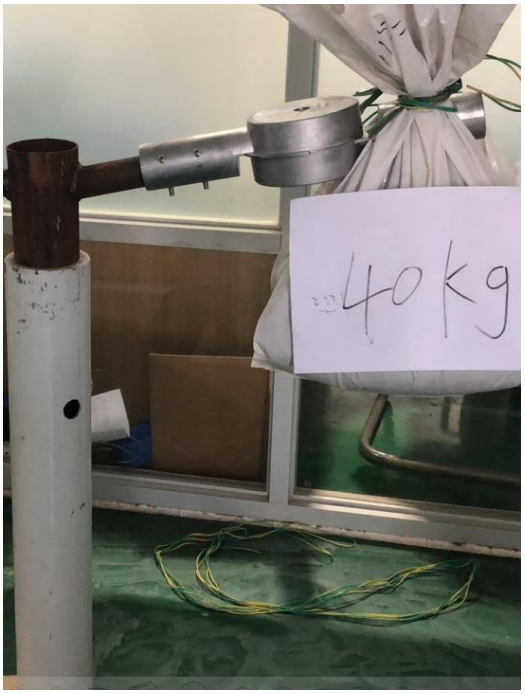
Recommended Adapter Installation Method

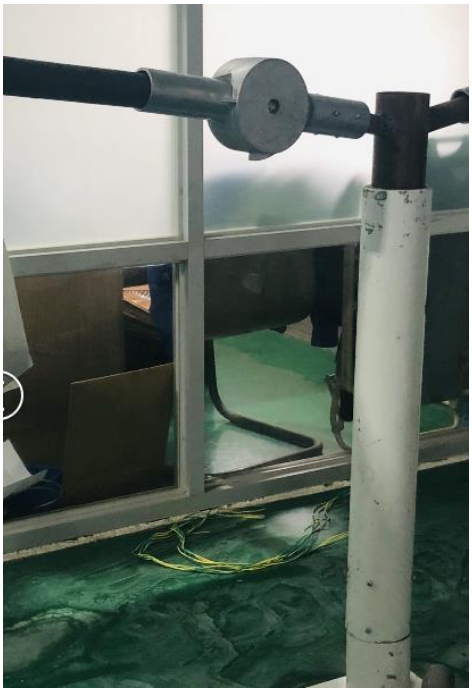
1. Recommended installation method of the adapter :

Assemble the side with scale up and lock the 6 screws. As shown below:



2. Try to avoid installing the adaptor 90° horizontally or lay the scale side down as below:





Pneumatic screw driver Report

Regard Valmont order, the customer requires Hexagonal M12*55 with 1 nut 1 spring pad, no flat pad. The bolt should be assembled in the center of the adaptors when shipping. Our company practice is to fasten the bolt with a tool - pneumatic screwdriver. The torque is 45Nm and we applied the same torque on all centered bolts.
It is tested and proved the force of the pneumatic screwdriver is smaller than that of the manual operation.

Instructions to loosen the center bolt:
Counterclockwise to loosen, clockwise to fasten.
To loosen the bolt, use M12 hex wrench and turn it counterclockwise. (Note: The hex driver must be pressed into the center hole completely and then turn counterclockwise).

M12 hex wrench pictures

pneumatic screwdriver Specification & Picture
MODEL：ONPIN306
Screw tapping size：6mm
Speed：8000rpm
Torque：45Nm
Length：225mm
Weight：1.07kg
Max Air Pressure：90psi


OP-306
440340
MADE IN TAIWAN

Spigot Testing

This Spigot testing report ('**Report**') has been prepared by WSP exclusively for Wellington City Council ('**Client**') in relation to investigation into spigot failures ('**Purpose**') and in accordance with the WSP's Terms & Conditions which can be found on our website at https://www.wsp.com/en-NZ/who-we-are/terms-and-conditions-supply-of-service. The findings in this Report are based on and are subject to the assumptions specified in the Report and the samples provided to WSP. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

In preparing the Report, WSP has relied upon data, surveys, analyses, designs, plans and other information ('**Client Data'**) provided by or on behalf of the Client. Except as otherwise stated in the Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable in relation to incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

1 Introduction

On the 13th February Wellington City Council (WCC) contacted WSP for assistance with the testing of a spigot adaptor (spigots) used in their street lighting network. These spigots were added to the network to assist the installation of LED luminaires.

Some of the spigots had failed in the past and are continuing to fail. Therefore, the testing was done quickly with small sample sizes due to WCC's concern around safety. Once more information is known about the issue, further testing could be done in the critical areas to provide improved accuracy, if required.

1.1 Application

The A380 aluminium alloy spigots slide over the end of the outreach arm of a street lamppost and are attached with 6 stainless steel M8 grub screws.

The spigot can be adjusted in one-degree increments with a built-in dial with 10 degrees of movement in one direction and 30 degrees in the other. An M12 stainless bolt secures the two halves together. The halves are supplied assembled but require disassembly to install the wiring harness before install.

The luminaire in turn slides over the other end (60mm OD) and is secured by a mechanism that is part of the luminaire.

The spigots come in two models, one for 34mm OD outreach arms and one for 42mm. The 34OD spigot is mostly used with 'P category' 8.2kg luminaires and the 42OD with 'V category' 11.8kg luminaries.

1.2 Failures

From communications with WCC, the following information was gathered regarding the failed spigots:

- Failure occurs on the outreach arm side of the spigot
- Generally, in high wind locations
- The majority are the 42OD Spigot model with 'NXT 72M 158W' model luminaire (11.8kg, 750mm long).

1.3 Samples

WSP was supplied with:

- 5 x 42OD used spigots
- 5 x 42OD new spigots

2 Static Loading

2.1 Test Procedure

The testing was carried out in the structural testing laboratory at WSP Research, in Petone. A 5 kN EZ-LZ UTM (Universal Test Machine) was used to apply a constant displacement while measuring force. The Shimadzu carries a Class 1 (±1% accuracy) traceable calibration.

A test jig shown in Figure 1, was built to hold the spigot in a similar manner to an outreach arm and apply the force at 375mm from the base of the luminaire using an aluminium arm to apply the central loading of a 750mm long (NXT 72M 158W) luminaire.

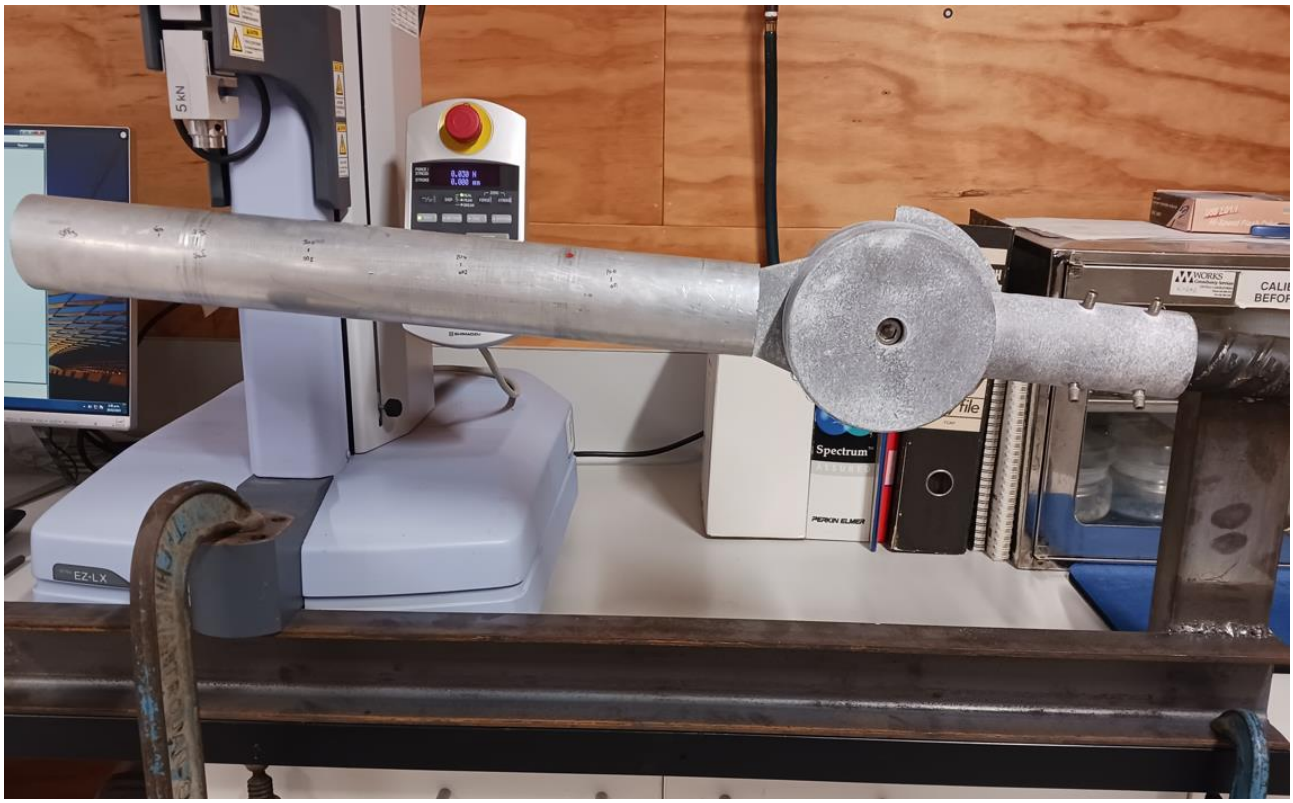


Figure 1 - Test Jig (Spigot Vertical Loading)

A small piece of rubber was placed between the load and the aluminium arm so that the load cell maintains contact throughout the travel. The load was applied at a constant displacement rate of 5mm/min.

Initially a used spigot was loaded in the same orientation as shown in Figure 2 (“Recommended Adapter Installation Method”) suppled. This orientation represents the force of the luminaire under gravity, or a vertical downforce load due to wind turbulence. Force was measured in newtons and converted to kg (@ 9.81 N/kg) for ease of comparison.

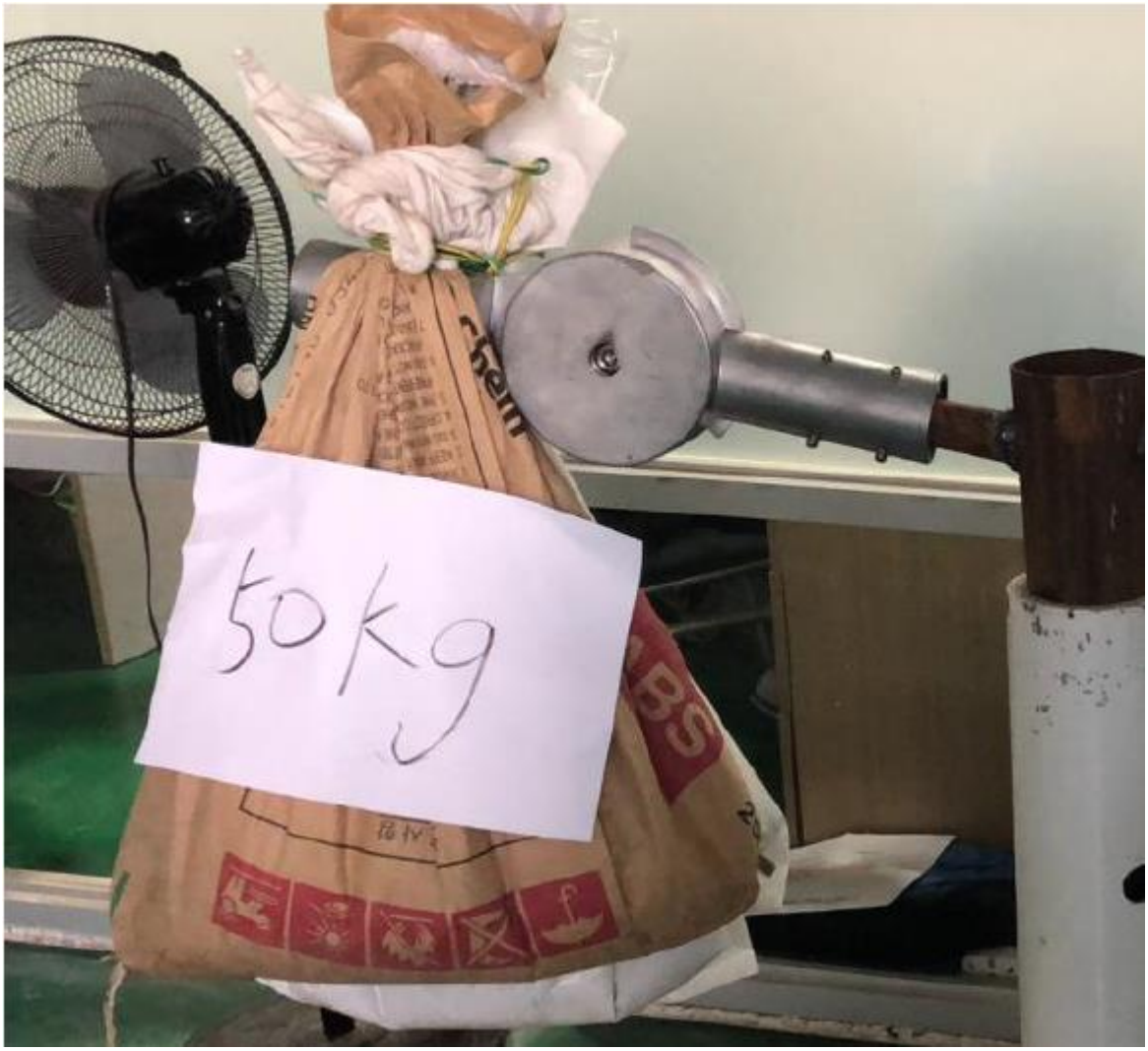


Figure 2 - Recommended Adapter Installation Method

A used spigot was then loaded on their left side representing a wind load coming from the right (if facing the front of the luminaire), as shown in Figure 3. Followed by loading on its right side (see Figure 4), representing a wind load coming from the left (if facing the front of the luminaire).

After this the weakest direction was re-tested using a new spigot.

Figure 3 - Spigot Left Side Loading

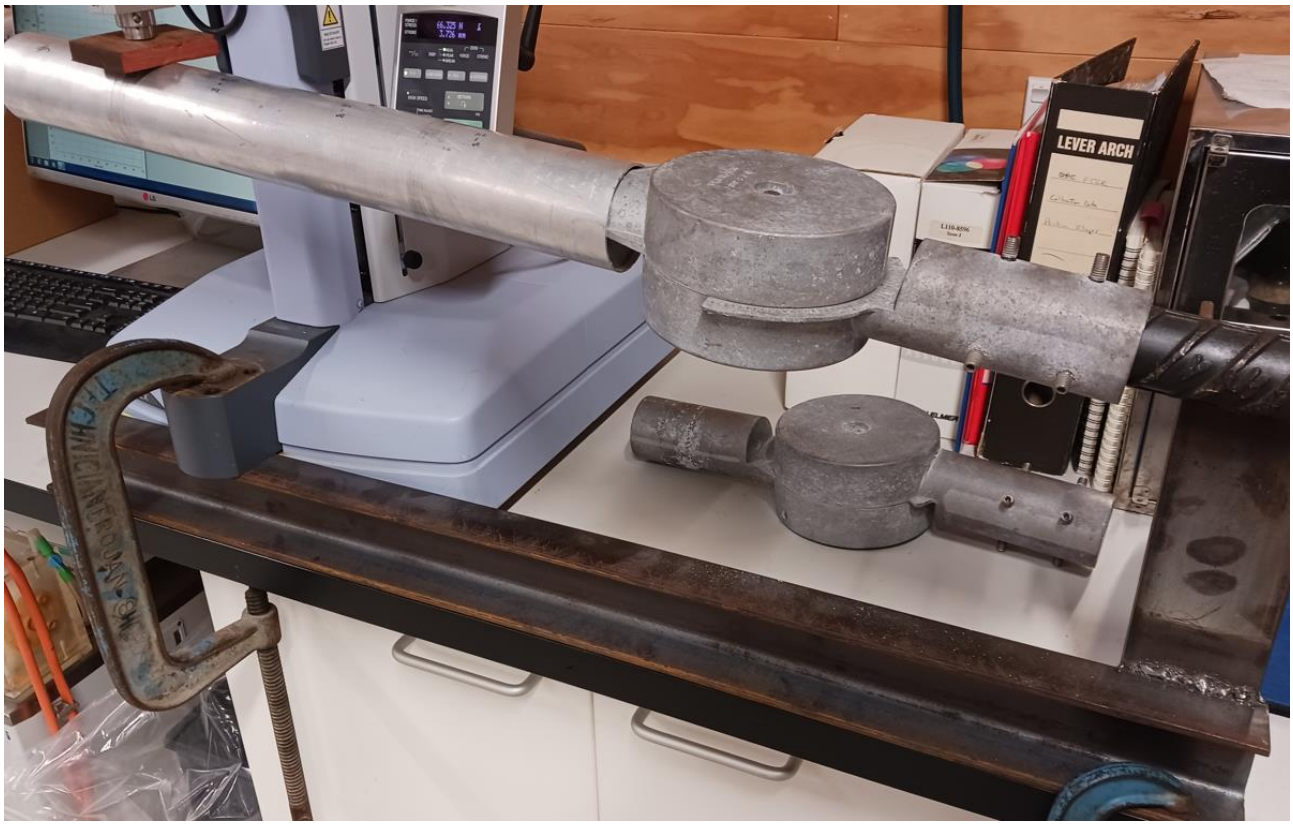


Figure 4 - Spigot Right Side Loading

2.2 Test Results

Under vertical loading the spigot cracked at 80.5 kg before failing completely. The load versus displacement for the vertical loading is plotted in Figure 5 below.

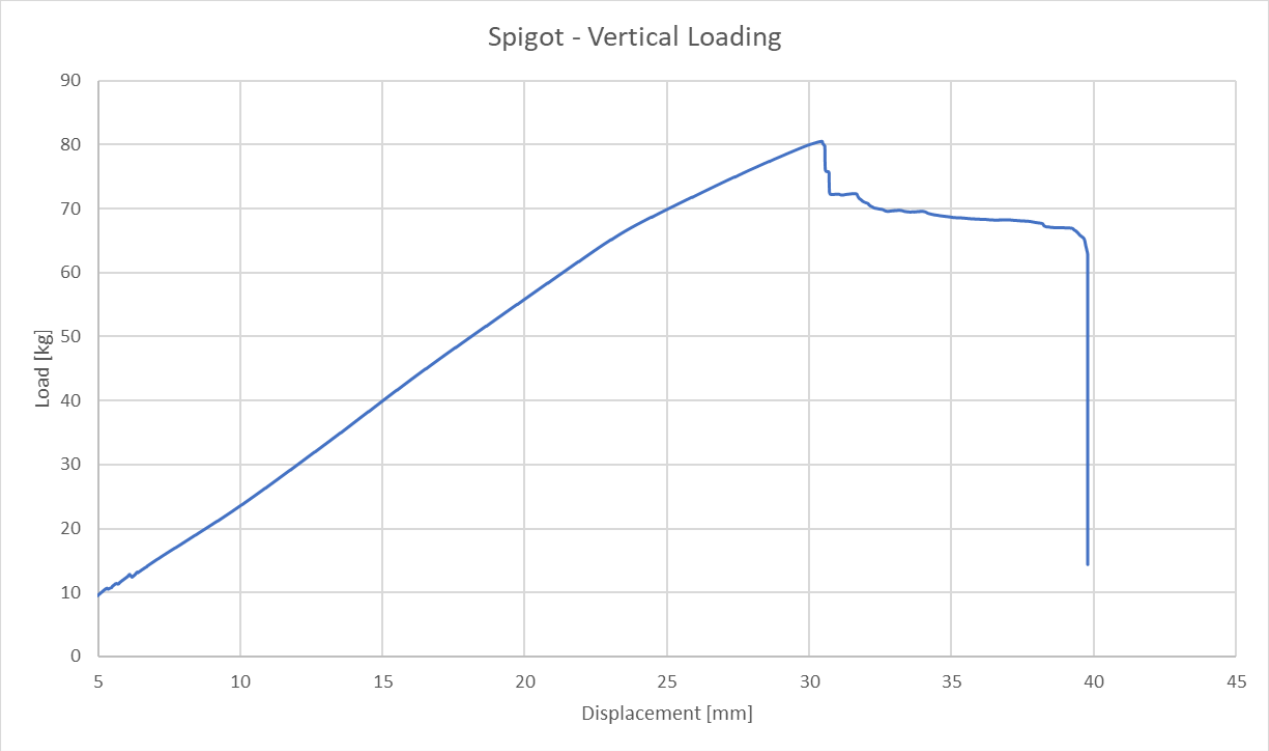


Figure 5 - Vertical Loading Results

A crack initiated at the top of the outreach arm side (see Figure 6) and maintained a lower load until the crack propagated downwards under failure shown in Figure 7.

Figure 6 – Vertical Load Crack Initiation

Figure 7 - Vertical Load Failure

In the left loading orientation, the spigot failed at 58.4 kg. The load versus displacement for the left side loading is plotted in Figure 8 below.

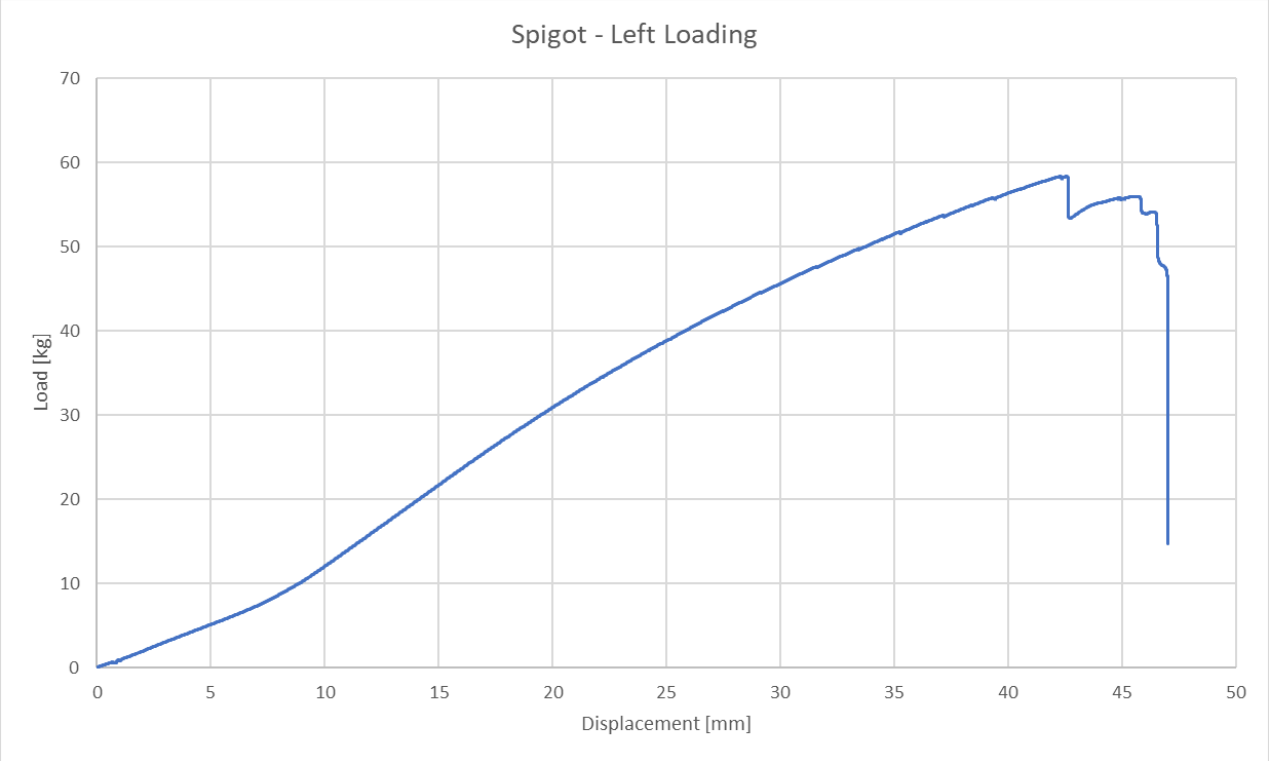


Figure 8 – Left Loading Results

The crack initiated in the outside of the join (see Figure 9) closest to the direction the force was applied from. This crack opened under failure as shown in Figure 10.

Figure 9 – Left loading Crack Initiation

Figure 10 – Left Loading Failure

The 3rd used spigot was found to already have signs of fatigue/crack initiation (similar to Figure 9) as shown in Figure 11 below, so was not tested. The 4th spigot was also not used for testing as the grub screws for mounting to the outreach arm we not able to be loosened due to possible galvanic corrosion between the aluminium alloy and the stainless fastener.

Figure 11 – Used spigot #3

For the right side orientation, the load reached approximately 76 kg before cracking and failing very soon after. The load versus displacement for the right side loading is plotted in Figure 12 below.

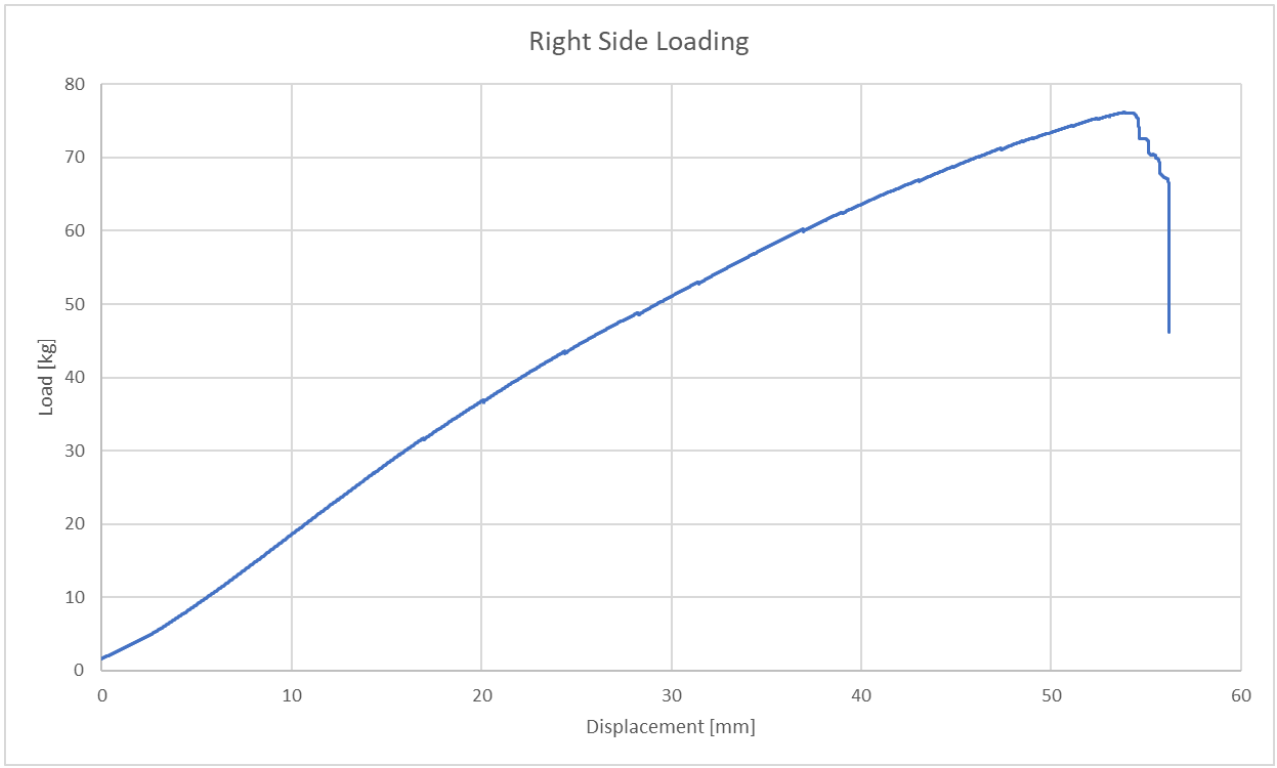


Figure 12 – Right side loading results

From this direction the crack initiated on the side closest to the direction the force was applied from as shown in Figure 13.

Figure 13 – Right loading Crack Initiation

As the loading on the left side failed at the lowest force, this direction was chosen to test a new spigot. The new spigot showed similar behaviour to the used spigot in the same orientation, with the crack initiating at 55.6 kg and failing soon after. The load versus displacement for the left side loading on the new spigot is plotted in Figure 14.

Figure 14 – New Spigot – Left side results

The crack initiated in the outside of the join (see Figure 15) closest to the direction the force was applied from. This crack opened under failure as shown in Figure 16.

Figure 15 – New spigot - Crack initiation

Figure 16 – New spigot failure

3 Cyclic Loading

3.1 Test Procedure

For the cycling loading, the test jig was loaded into a hydraulic Servotest UTM with faster cycling ability as shown in Figure 17. The Servotest carries a Class 1 (±1% accuracy) traceable calibration, although due to its 2000 kN range it doesn't have much accuracy at low forces (0-0.5 kN). For this reason, a displacement target was used for the cyclic loading

Using the static loading as a guide, displacement targets were chosen which would correspond to approximately target load. Samples were loaded 300 times to a set displacement/load target at 0.5 Hz, before the target displacement/load was increased for a further 300 cycles. This was repeated until failure was achieved. Ideally once there is a better understanding of the winds loads involved, this would be re-done with a more targeted test program using finer load control.

The load was applied using a cylindrical impactor, as shown in Figure 17..

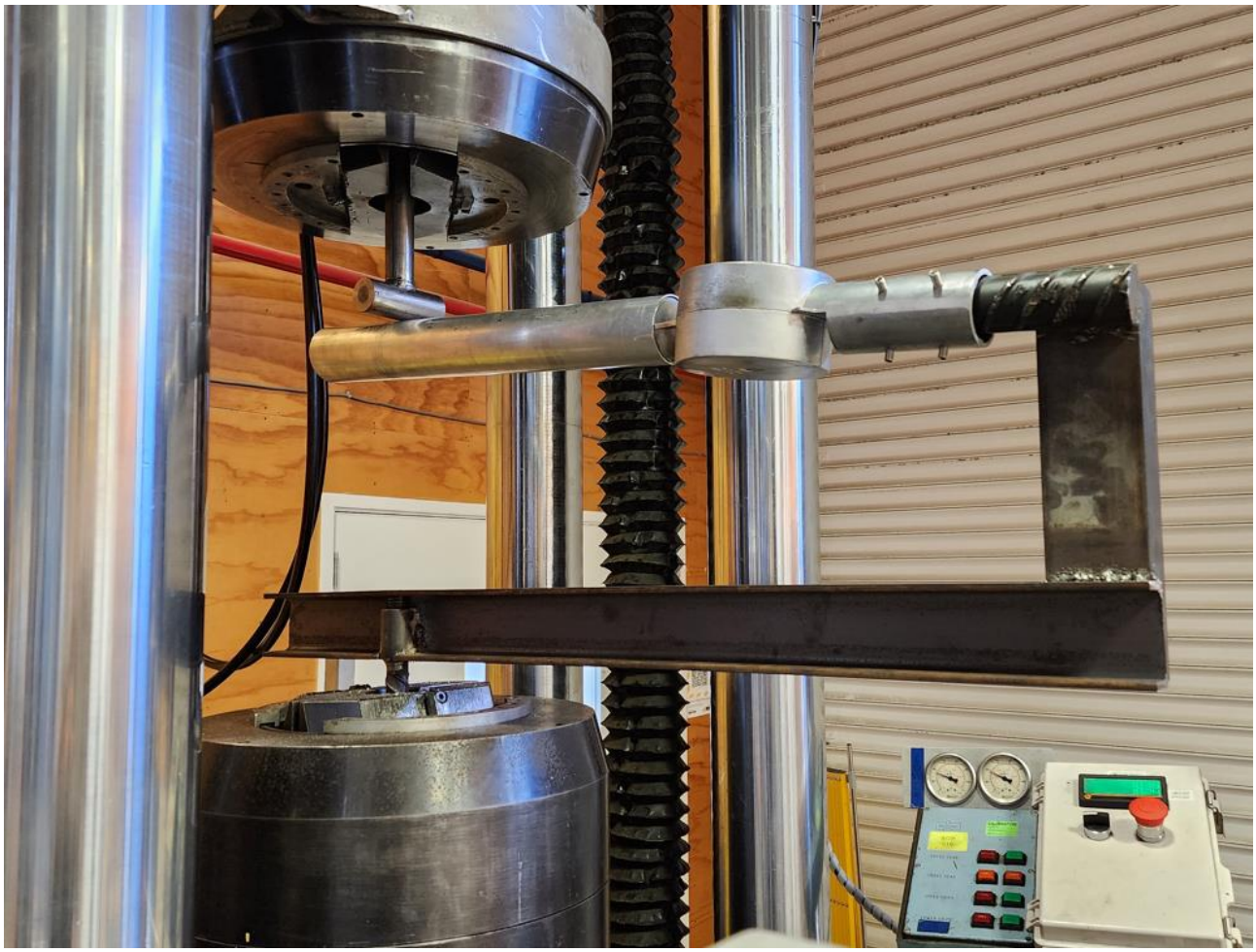


Figure 17 - Cyclic Spigot Testing

3.2 Test Results

The first sample survived the first 2 loading levels but failed after 136 cycles at the higher 35 mm/50 kg load target. All samples tested showed permanent deformation after only a few cycles. Therefore, it is likely the corresponding force at each of the displacement targets may have diminished as testing went on. Hence, the corresponding target loads at each of the displacement is more likely a peak force rather than a constant force.

The second sample failed after 39 cycles at the higher load, so the next one was to be started one step down at 30 mm /45 kg.

The fourth sample showed some cracking as shown below in Figure 18, so was not used.

Figure 18 - Fourth sample with cracking

The fifth sample passed the 30 mm/45 kg load and was taken up to 35 mm/50 kg, it then showed signs of yielding after 200 cycles at 35 mm/50kg, and after another 300 was not holding a load anymore.

Table 1 - Low-cycle loading results

New Spigot #	Cycles at 25 mm/40 kg	Cycles at 30 mm/45 kg	Cycles at 35 mm/50 kg
2	300	300	136
3	-	-	39
4	-	-	-
5	-	300	~200

4 Conclusion

In order for the spigots to fail in the manner observed in this testing they would need to be experiencing high wind loads, either due to vortex shedding, high wind speeds, topographical multipliers, higher than expected drag from the luminaire, or a combination.

It is recommended that a study be undertaken of the wind effects at the sites where failures have occurred and compare to sites where the spigots are currently in use, to identify the quantity and location of higher risk sites. Wind load testing could also be done on the luminaire to better understand its behaviour in respect to drag and vortex shedding. Once there is a better understanding of the wind loading, it may be valuable to re-test the cyclic loading with a more targeted test program at higher cycle counts.

As a small sample was tested, further testing could be conducted in case there are discrepancies between batches/stock that have not been identified yet.

Regards

Tested and reported by

[redacted]
Senior Engineer

[redacted]

Reviewed by

[redacted]
Graduate Engineer

[redacted]

Asha Harry

From: [redacted]
Sent: Friday, 10 February 2023 2:59 pm
To: [redacted] Councillors
Cc: [redacted] Transport & Infrastructure; [redacted] Infrastructure Leadership Team; [redacted] Executive Leadership Team (ELT); [redacted] Mediacomms
Subject: Streetlight article this morning

Kia ora Mayor, Deputy Mayor and Councillors,

I wanted to reach out to provide information and give you assurance on the recent issues with the LED streetlights. As you are aware, media coverage has highlighted the fact that some of the fittings have become loose and have fallen, causing an unacceptable danger to the public.

Our top priority is ensuring the safety of our community and we are focusing on this matter with a sense of urgency.

We are urging members of the public to call the Council on 04 499 4444 if they come across any streetlamps that are drooping or swaying, especially in strong winds. Our team is ready to respond and address any concerns as soon as possible.

The issue is caused by a part of the lights called a spigot, which holds the light bulb. Unfortunately, a batch of faulty spigots was installed across the network during the LED rollout in 2017 and these spigots are now failing prematurely.

We have been tracing the LED rollout contract documentation and searching records to determine which contractor/s ended up with faulty spigots and where they were installed. However, it has not been possible to visually identify the faulty spigots without removing the lamp head, so they cannot be identified without being on an Elevated Work Platform (EWP).

To mitigate the risk, we have asked contractors to check the spigots every time they go up a streetlight, regardless of the reason they are there. Lamps with faulty spigots are replaced immediately. Additionally, we have been cross-referencing records of each of the four contracts, the installation date of the lights, which contractors did which parts of the installation, and locations of previous failures.

Please be assured that streetlights installed after the LED rollout and any lamp heads that are replaced do not have faulty spigots. We are confident that once we have identified where the faulty spigots have been installed, we can run a proactive inspect and replace program.

Once again, I apologise for the concern caused by this issue. If you have any questions or concerns, please do not hesitate to reach out to me.

Best regards

[redacted]
Kaiwhakahaere – Ngā Waka me te Hanga (Manager Transport & Infrastructure)
Wellington City Council
[redacted]

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Memorandum

Date: 21/02/2023 File ref: Version 2
To: [redacted] Chief Infrastructure Officer
From: [redacted] Manager of Transport & Infrastructure
Subject: Streetlight Knuckle Adaptor Failures

This memo is to document the issues associated with the knuckle adaptor (spigot) failures on Wellington City Council's LED streetlights and covers off the background to the problem, a high-level timeline of events, a review of the failures, analysis of data and a brief recommendation on potential ways forward.

The Issue:

On Friday, 10th February 2023 an article appeared in the Dominion Post detailing the experience of a resident who had identified a streetlight lamp that had fallen from the top of its pole. The article went on to discuss the public health and safety risks of similar ongoing failures.

Background:

In 2017, we began work on our LED streetlight rollout project to change all existing High Pressure Sodium lights to more energy efficient LEDs. This project had tight timeframes associated with it which were due to Council's ability to receive an 85% subsidy for the project from Waka Kotahi. To be eligible for this subsidy required completion of the project by 30 June.

As part of the delivery phase of the project, Council engaged several delivery partners to help expedite the project. One of these partners was a company called Gess Ltd who is a designer, fabricator and distributor of columns and streetlights. Gess were employed by the Council to design, fabricate, test, and produce an item called a knuckle adaptor. The objective of such a device would allow for Council to have a greater degree of tilt of streetlight lamps thereby allowing for greater control over items such as spill or glare.

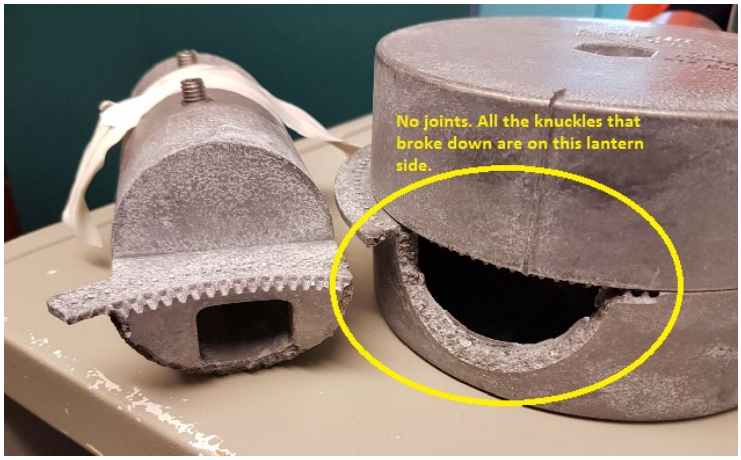
Over the course of 2017, the streetlight team worked with Gess on the design of the knuckle adaptors, providing contributions to items of the design such as structural components as well as material selection. In October 2017, we signed off on the Gess design (Appendix 1) with the first adaptors being delivered in January/ February of 2018 in time for installation. The testing regime for the adaptors prior to mass production was a static load test and they were fatigue tested to destruction (occurring at around 60kg static weight). These tests were undertaken by a third party with no formal record of the tests seemingly recorded in either Trove or SPOT. The adaptors came with the following certifications:

- Design life = 25 years
- Importance level 1.
- Terrain category 2
- Wind region W
- Height above ground = 12m
- Luminaire sail area 0.1m^2 and 19kg (Italo 3)
- Topographic multiplier (lee zone and hill shape) = 1.0

Following installation, some adaptors on the Wellington network started to fail which resulted in streetlight lamps (each weighing up to 11.8kg) hanging by their service connections. This was raised with Gess who undertook an investigation. The results of their investigation led them to believe that the root cause of the failures could be attributed to the following factors:

1. Higher wind/wind gusts than designed for
2. Internal casting defect (see yellow bubble below)

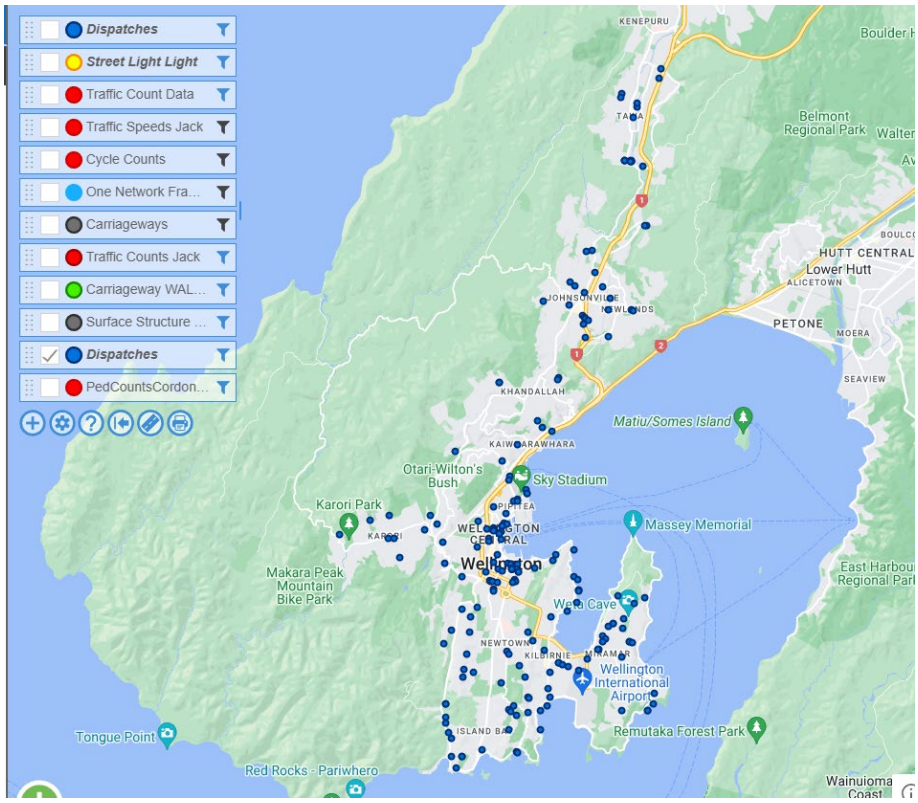
3. Installation damage or spigot knocked/dropped prior to installation
4. Car/truck reversing into or hitting a pole
5. Over torque during installation



Data Analysis:

From the records we have in RAMM, Fresh Service and CMS we have ascertained the following with regards to the failures:

1. Since the first lights began getting installed in late 2017, there have been 160 reports of hanging lights (failure rate = 0.8%[1])
2. Within the same reporting period there have been 16 streetlight lamps that have fallen from the top of poles (2019 = 2, 2020 = 5, 2021 = 5, 2022 = 2, 2023 = 2)
3. The following areas have had the greatest number of incidents (contributing 34% of all incidents):
    - Te Aro
    - Tawa
    - Miramar
    - Haitaitai



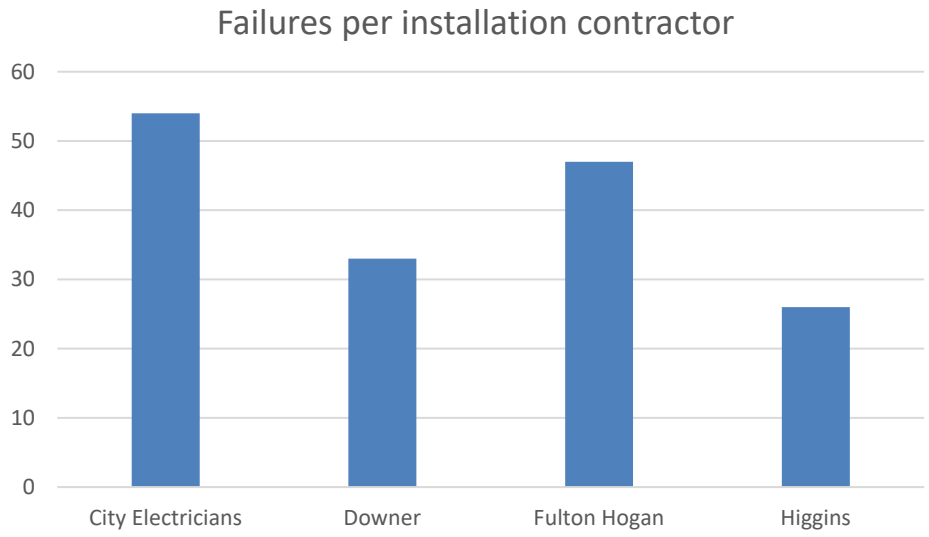
Note: none of the reports were ever captured into Risk Manager as they were reported with no injuries or serious harm.

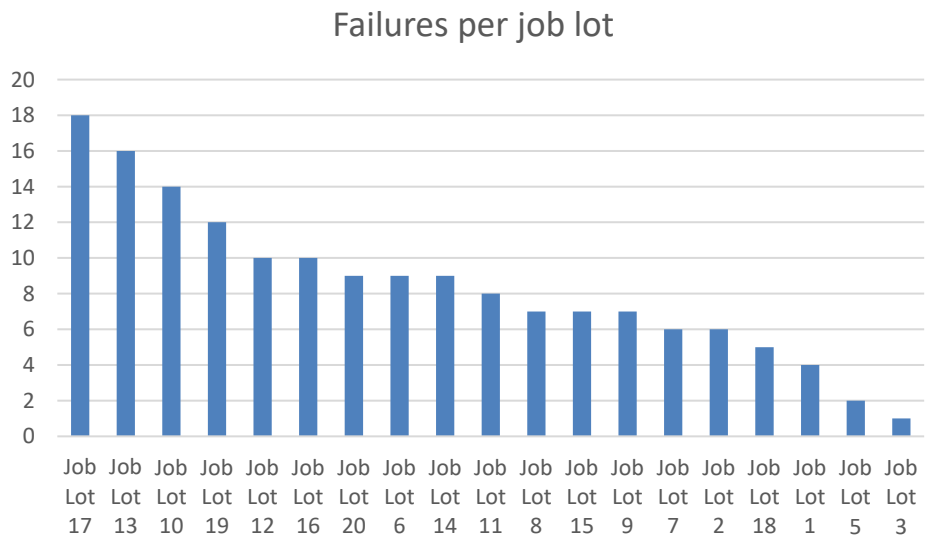
We have also looked at the installation characteristics for the lights to try and identify where these lights could be and if there is any commonality noticeable. There is no logical correlation between failures

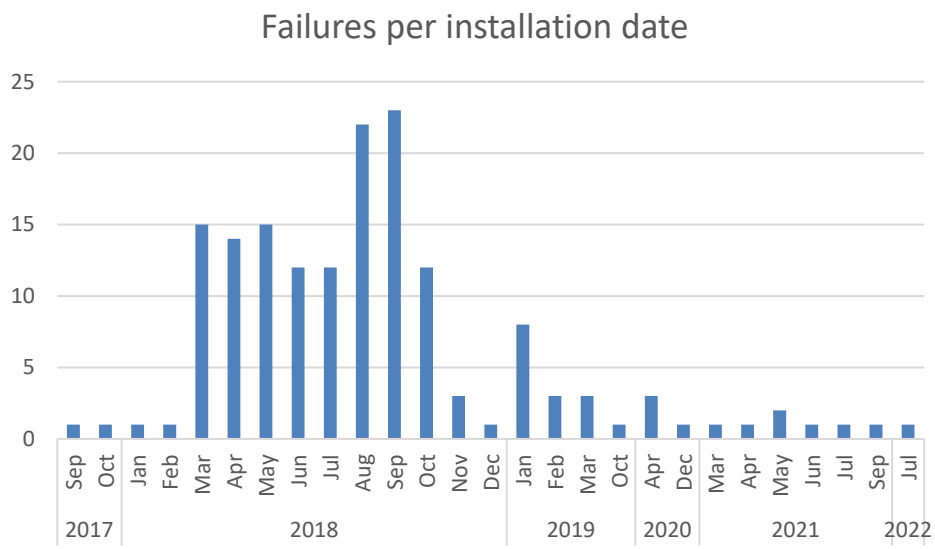
[1] Based on a total asset base of 19,869 streetlights across the city – as per the 2021 Transport Asset Management Plan

and the installation contractors used, hence we are confident that the failures are not an installation error and are much likelier due to an issue with the adaptors themselves.

There appears to be some correlation with the job lots issued as well as the dates of installation – whilst insufficient to indicate how widespread the issue is, this does provide some indication of priority areas that could be targeted, particularly when combined with the location data.







Public Risk[2]:

As Transport Asset Manager, I was first alerted to the issue in October 2020 when a report came through from the maintenance contractor, Fulton Hogan. I was advised that there was a bad batch of adaptors that had been delivered and due to the nature of the rollout, it was impossible to find where these had ended up on the network. I was also told that due to the nature of the failures (i.e., the streetlight lamp hangs when the adaptor fails), the Council's response to the public safety risk was to treat every failure as a dangerous hazard, meaning that our contractors are required to resolve the issue within two hours of being found.

My evaluation of the risk[3] at the time was that the probability of this event occurring was rare (***event could occur but not expected to occur in the next ten years or could occur in exceptional***

[2] Evaluated using the WCC Operational Risk Framework

[3] Note that at the time, there was no formal risk management framework within the Council, but this describes the general thinking of the risk evaluation that I undertook

circumstances) and so whilst the impact would be major (***noticeable, ongoing impact on public health and safety levels***), it would leave the risk rating at medium with the following outputs:

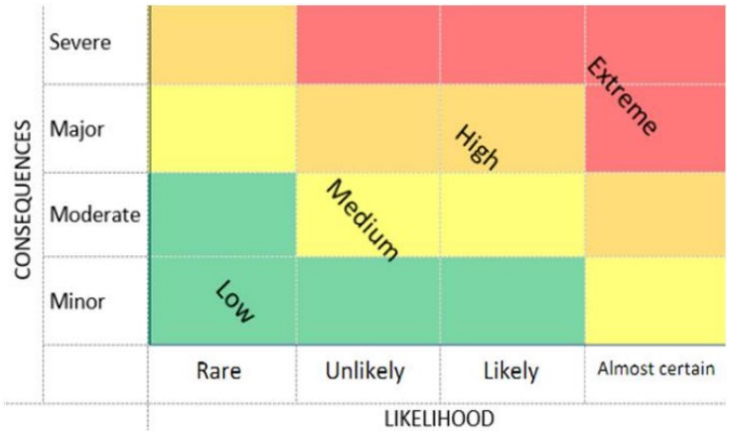
- Tolerance: Risk within Unit or Group's risk appetite
- Impact: Would somewhat impact on quality, quantity and timeliness of Unit's or Group's objectives and outcomes but overall can still achieve
- Monitoring & Reporting: Monitor for increase in risk, include in standard reporting

After a period of monitoring and reviewing what the latest data tells us the public risk rating would now be:

- Probability: Almost Certain ***(Event will probably occur this year or has occurred in the previous year)***
- Impact: Remains the same - Major
- Risk Rating: Extreme

This would result in the following outputs:

- Tolerance: Risk unacceptable to Unit and Group Manager
- Impact: Would stop a number of key objectives and outcomes being achieved
- Monitoring & Reporting: Escalation to ELT - increased reporting required



Findings:

Whilst the root cause of the failures is most likely due to the knuckle adaptors themselves (rather than installation errors), it is uncertain from the data analysis as to how prevalent the issue is on the network (i.e., was there a faulty batch or is it a more widespread issue).
Some of my key findings are:

1. The testing regime specified a static load test – this does not accurately simulate the nature of the environment in which the adaptors would be operating – i.e., oscillations with significant vibration. As such I have a concern that the specified strength rating of 60kg could be significantly overstated.
2. A review of some of the failed units has led me to believe that there are some issues with either the casting of the failed units or with the material selection (or both). This is evident from some of the cavities noticeable in the alloy where the metal has sheared off as well as discoloration which could be attributed to early stages of galvanic corrosion – however galvanic corrosion is not the cause of failure; the root cause looks more likely to be metal fatigue.
3. Structurally there are some concerns over the lack of gussets on the outreach arm end of the adaptors (end where the failure occurs). The presence of gussets would increase the stability and strength of the unit and potentially also offer increased dampening for wind

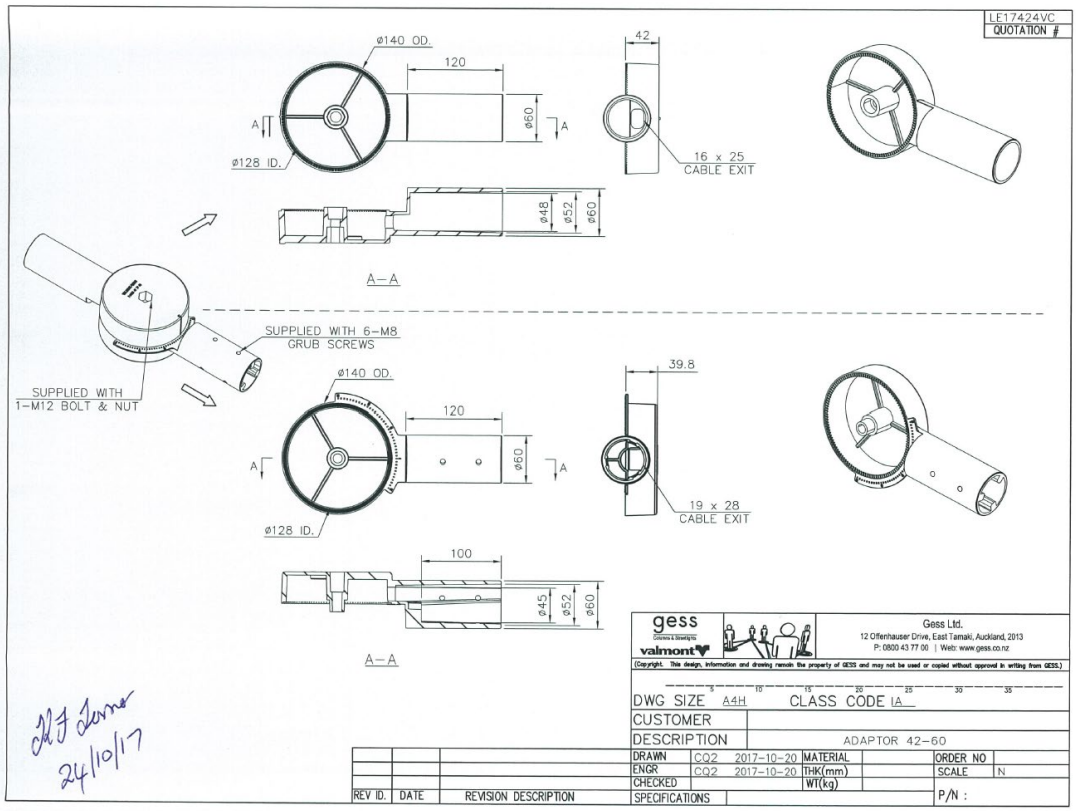
vibrations. I note that this issue was raised with Gess when failures first started occurring but cannot find any response from Gess addressing this matter.

4. It is uncertain what level of recourse the Council will have with Gess as the supplier given that the units came with a one-year warranty and defect period as well as the fact that Council Officers were intrinsically involved with the design of this bespoke item and signed off on the drawings. However, we will take legal advice on this.
5. Whilst we will probably never be able to identify exactly where the future failures are likely to happen, there is some correlation that can be made with locations of previous failures cross referenced against job lots, installation dates and high wind and corrosion areas which could offer higher priority areas for remediation. However, this is something that should only be looked at if there is sufficient evidence to prove that the problem is limited to only some adaptors and not the entire network.
6. Should all adaptors on the network require removal, the estimated cost would be in the order of $3.7m (opex) and would take approximately 2 years to complete provided there are 4 x line crews made available to undertake the work. This could be accelerated should additional crews be obtained, but this skill set is limited in the region so the Council would need to draw on existing relationships with utilities such as Wellington Electricity as well as other neighbouring councils. We would find out what is available through a full procurement process.

Recommendations and Actions:

1. We have alerted all roading contractors to include streetlight inspections into their routine network inspections, so we have more eyes on the network than just the streetlighting contractor. Any identified will be dealt with as a dangerous hazard.
2. To fully ascertain the root cause of the adaptor failures, WSP have been engaged to undertake the following (results of which are expected to be provided by end February):
    - Test the adaptors to fatigue failure in an oscillating manner to mimic the up and down movement of the light in high winds
    - Check the composition of the material and the drawings and advise of inefficiencies that could be contributing/ causing failure
    - Provide a report of the findings with a determination as to root cause of failure as well as any potential remediation options
2. In conjunction with this testing, we will create a plan evaluating timeframes and costs for replacement/ remediation for several scenarios – this will also be completed by end February.
3. The best recourse to reduce Council's risk as quickly as possible is to use the maintenance contractor to remove adaptors from streetlights in the locations with high wind loading and high corrosive exposure (a map of these areas is shown in Appendix 3). The immediate priority focus will be on the areas of Te Aro, Hataitai, Tawa and Miramar followed by lights along the South Coast. This will be included as a scenario into the plan for consideration.
4. It is also recommended that a legal review be undertaken on all contract documents with Gess to understand what level of recourse the Council will have with the supplier.

Appendix 1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gess
valmont
Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz
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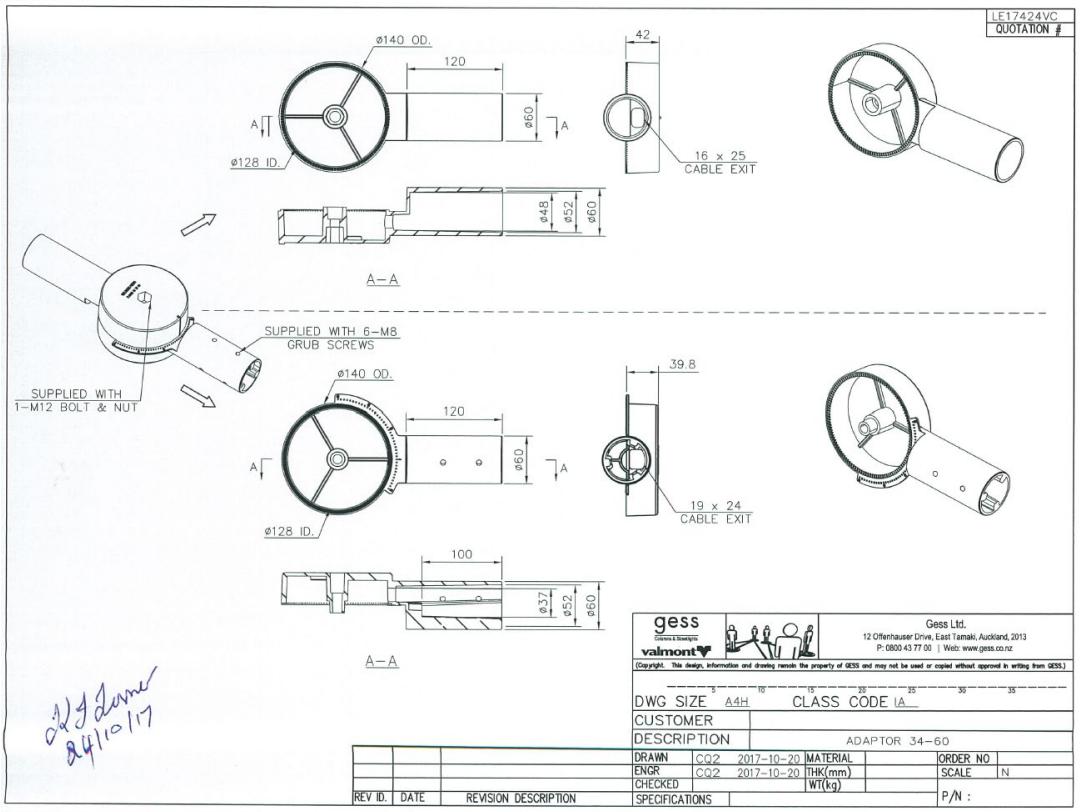
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ENGR CQ2 2017-10-20
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MATERIAL
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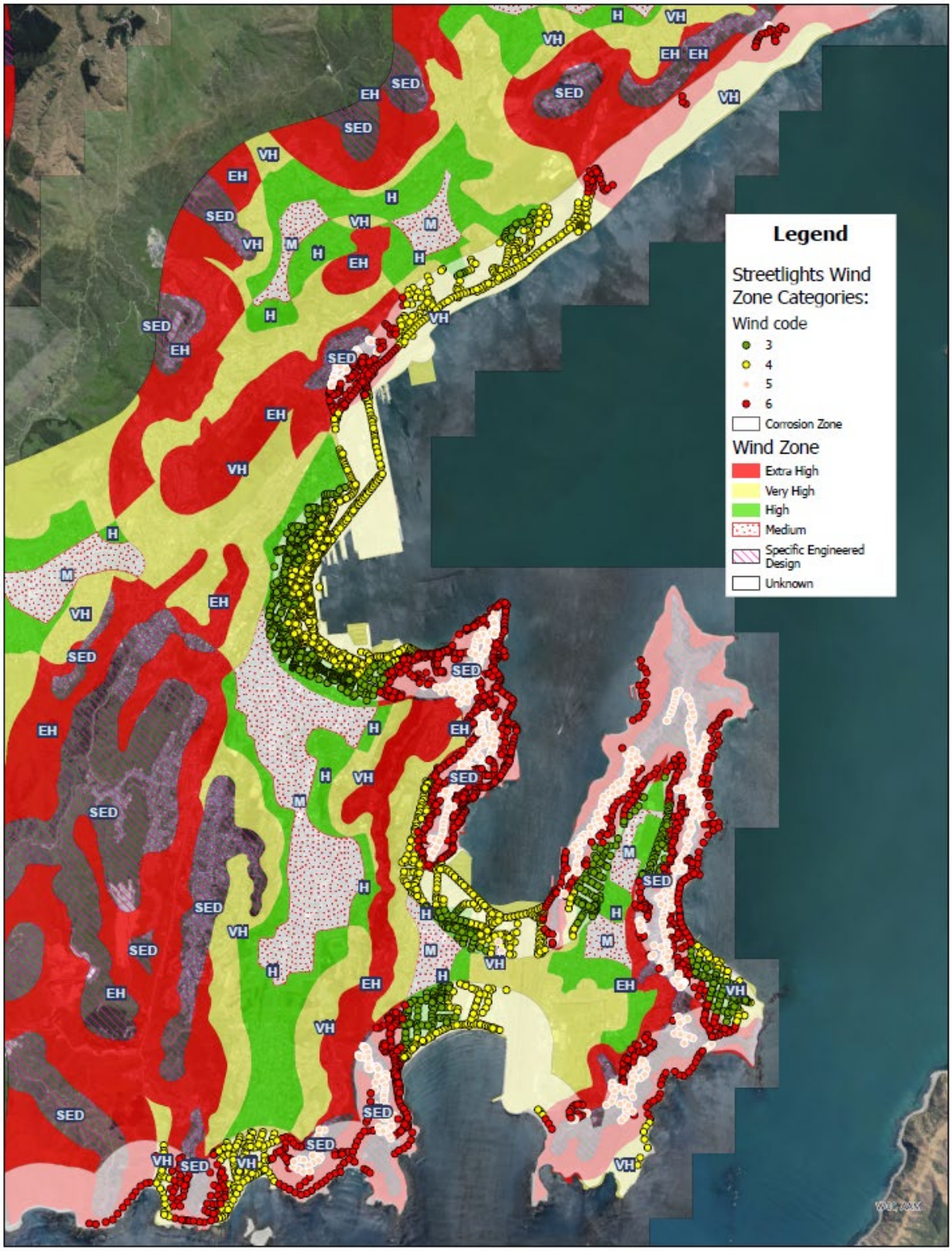
P/N :
REV ID. DATE REVISION DESCRIPTION
24/10/17

Appendix 2



Count of Streetlights by Zone:

Zone 3: 1290
Zone 4: 1878
Zone 5: 651
Zone 6: 1423

Asha Harry

From: [redacted]
Sent: Monday, 13 March 2023 10:11 am
To: [redacted]
Cc:
Subject: Streetlight plan
Attachments: Streetlight plan.dotx.docx

Hi Team

As requested, here is our draft plan.

As mentioned there are a number of moving parts so this plan is currently live and likely to change over the next few days but this will give you an idea of where we are heading...

To see the live plan (excel sheet) - use the link at the end of the document.

Cheers
[redacted]

Streetlight Remediation Plan

Plan to remediate the issues associated with knuckle adaptor failures on WCC streetlights

Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Purpose
The purpose of this report is to provide a high-level overview of the streetlight remediation plan as it continues to be progressed.

Background
The background to the problems associated with knuckle adaptor failures on WCC streetlights has been previously documented in a memo from [redacted] (Manager – Transport & Infrastructure) to [redacted] (Chief Infrastructure Officer) which is in Appendix 1 of this plan. This plan focuses on the response to the associated recommendations from said memo namely:

- *To fully ascertain the root cause of the adaptor failures, WSP have been engaged to undertake the following (results of which are expected to be provided by end February):*
  - *Test the adaptors to fatigue failure in an oscillating manner to mimic the up and down movement of the light in high winds*
  - *Check the composition of the material and the drawings and advise of inefficiencies that could be contributing/ causing failure*
  - *Provide a report of the findings with a determination as to root cause of failure as well as any potential remediation options*
- *In conjunction with this testing, we will create a plan evaluating timeframes and costs for replacement/ remediation for several scenarios – this will also be completed by end February.*

Summary results of WSP testing
The preliminary results of the WSP testing (obtained 03 March 2023) have shown that despite the adaptors achieving the specified level of strength as stated by the manufacturer, they fail to meet what would be expected in a high wind environment such as Wellington. Furthermore, the adaptors used on the larger lamp heads (11.2 kg) are shown to be the ones that are failing rather than the smaller ones (6 kg & 8 kg). In simple terms, the units are unsuitable for the application and there is no evidence to show that there is a batch issue as previously stated. The full preliminary report from WSP is attached as Appendix 2 of this plan.

Further testing is being carried out and the results of the materials analysis is not yet available at the time of writing[1] but there is strong evidence to suggest that the issue is widespread enough to warrant a network wide solution be considered with some urgency.

Review of design
The current design of WCC streetlights has these knuckle adaptors which are used to provide extra tilt on the LED lamp heads. This component is not used by other Councils or Waka Kotahi. A review of the design shows that removal of the adaptors and having the lamp head directly connected to the outreach arm would make WCC streetlights conform to other streetlight designs. As such, this is the recommended approach to reduce costs and time to remediate. Other options reviewed and rejected were re-design of the adaptors and strengthening the adaptors using a ceramic coating. Both options were rejected because of the time and cost implications that would result in the inherent risk remaining on the network. The benefits associate with these options (i.e., retaining the increased tilt function) could not justify retaining the risk for such a long time.

[1] Note that this testing will likely not be done as they adaptors are performing to specification and the advice from WSP is that we will get very little benefit from completing this.

Plan going forward
Ultimately, the plan going forward must be risk prioritised – areas of greater risk should be dealt with first. Given the factor that excessive winds play in the failure mechanism it is recommended that the high wind areas be dealt with first. Wellington's wind zones have been categorised into the following for ease of reference in this plan:

- Extra high
- Very high
- High
- High to Medium
- Other (medium to low to very low)

Considering that the larger units (11.2 kg) are the ones more likely to fail and the impact that these would have should they fall onto someone, the numbers associated with these units within the wind zones are categorised as follows:

- Zone 1 (Extra High) – 1,423
- Zone 2 (Very High) – 651
- Zone 3 (High) – 1,878
- Zone 4 (High to medium) – 1,290
- Zone 5 (Other) – 10,420

This encompasses the 15,622 lights that are at risk excluding the ones that have already been addressed (adaptors removed).

The current resourcing available to remove the adaptors from the network are the maintenance contractor resources which is 2 x field crews. Given just this resource availability, and forsaking all other BAU work (maintenance, renewals, outages, infills and emergency response) it would take until September 2028 to completely address all units (noting that "extra high" wind zones to "high to medium" wind zones could be done by January 2025). With the others being done over a period thereafter.
The estimated costs[2] to do this are as follows:

- Zone 1 - $569,200
- Zone 2 - $260,400
- Zone 3 - $751,200
- Zone 4 - $516,000
- Other - $4,168,080

Total cost is estimated to be $6,264,880 – this will largely be an opex expenditure, though there is some opportunity to capitalise some of the costs (for instance if the outreach arm also needs replacing when the contractor goes up the pole).

[2] Costs will be finalised based on negotiations with contractors

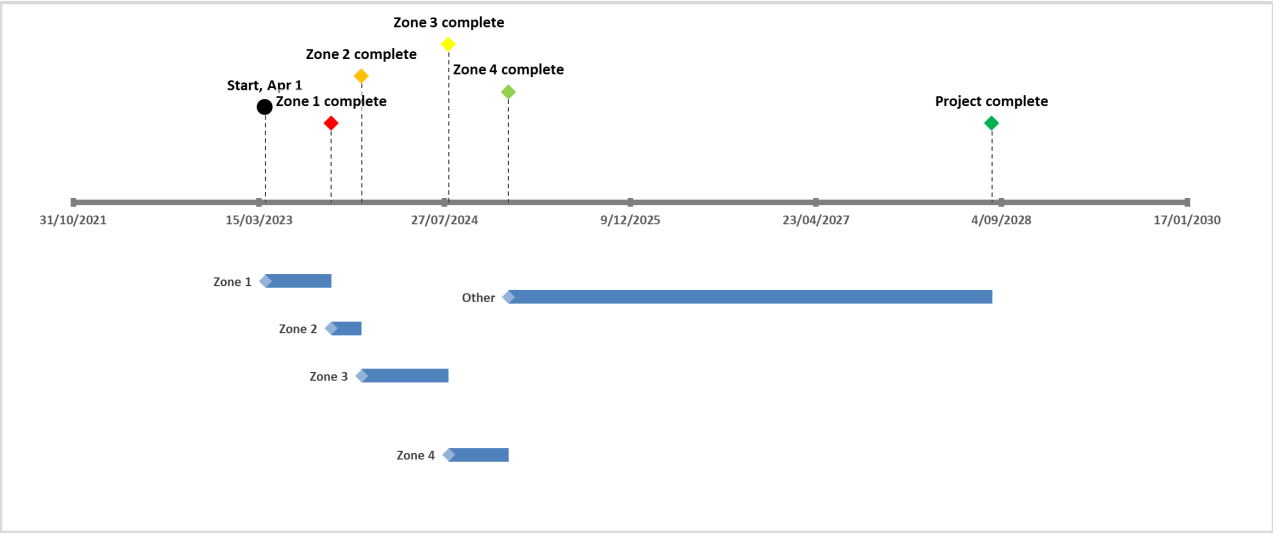


Figure 1 Using only the 2 x current maintenance crews – high risk done by July 2024 and network completed by September 2028

Speaking to the maintenance contractor, we could obtain an additional crew by end March 2023 which could either offset the BAU functions so that we have a dedicated project field team (2 x crews) whilst still fulfilling our usual BAU activities. If we choose to use this crew for the remediation plan however, we could reduce the date for addressing the highest risk areas (from January 2025 to June 2024) with the total network being completed by December 2025 (reduction from September 2028).

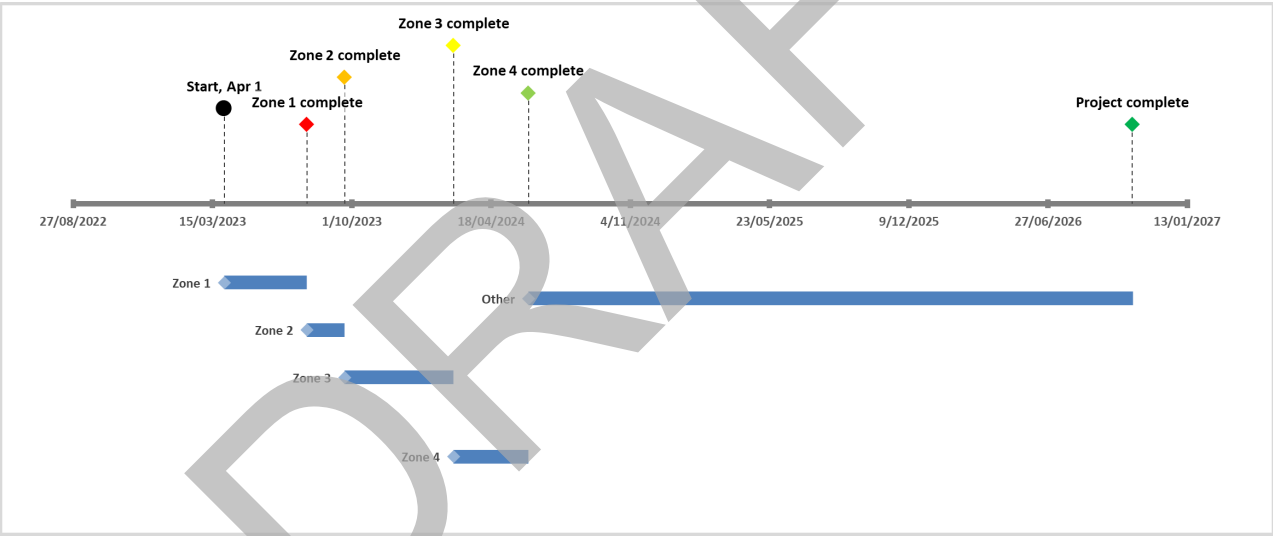


Figure 2 Using an additional 2 x current maintenance crews – high risk done by February 2024 and network completed by December 2025

To completely remove all risk from the network within the next year, we would require 10 x dedicated crews however, there are significant constraints in trying to obtain more resources to undertake this work, namely:

1. No other contractor is contracted to WCC so there is a need to follow a procurement process (i.e., procurement plan, tender process, contract negotiation, tender award etc.) to gain more resources
2. There are limited contractors in the region who have the skills and certifications to work on the electrical network (Downer, Fulton Hogan, Connetics and NorthPower).
    a. We have made contact to all contractors who have indicated a willingness to help with removing the adaptors.
    b. We are yet to secure negotiations with them and to understand the number of crews we will be able to obtain.
    c. We are yet to finalise the detailed methodology of how we would do this work, noting that closing roads would be fastest, but this could have major disruption impact and night works are significantly riskier for worker safety.

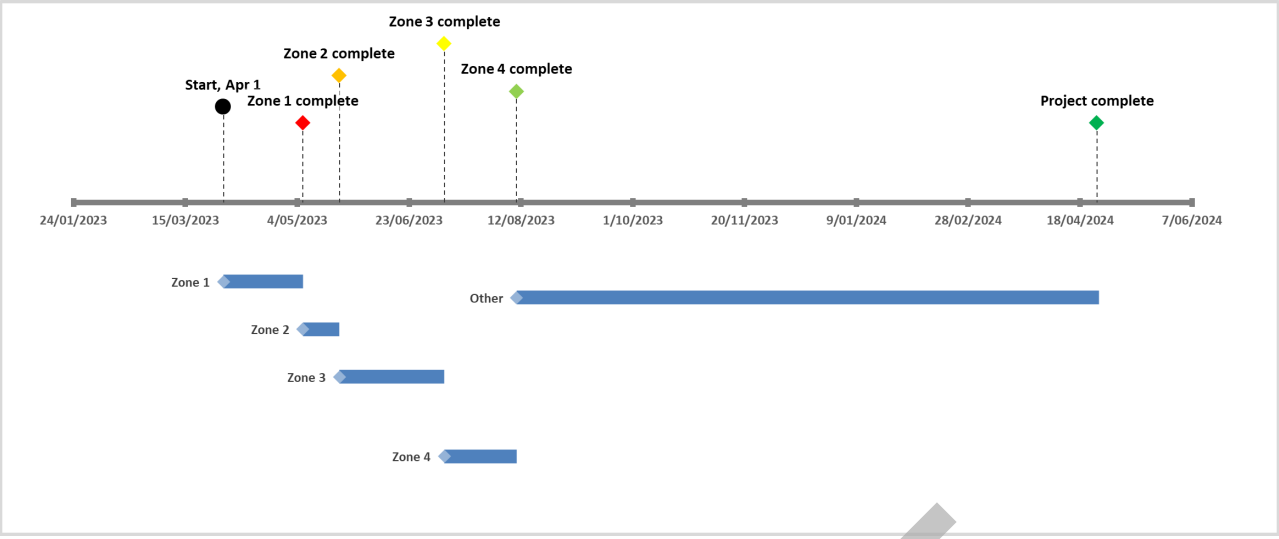


Figure 3 To remove all adaptors within the next 12 months would require 10 x crews

What we have done

Whilst we awaited the test results from WSP, we made the call to start proactively replacing the adaptors. We issued several dispatches to our contractor to remove adaptors across the high-risk Zone 1 area – with specific focus along the South Coast. As of 13 March 2023, we have removed approximately 233 adaptors.

Next steps

- We will continue to refine the plan, progress with securing resources, and finalise methodology and costs.
- We will continue to use our 2 x contracted crews to progressively work in the high wind areas (Zone 1) until we secure more resources.
- We will continue to make use of our BAU budgets to progress the above.
- Updates will be provided every Friday with the number of completed lights as well as the open action list available on the live plan at any stage.

Link to the live plan: Streetlight plan .xlsx

Appendix 1 - Memorandum

Date: 21/02/2023 File ref: Version 2
To: [redacted] – Chief Infrastructure Officer
From: [redacted] Manager of Transport & Infrastructure
Subject: Streetlight Knuckle Adaptor Failures

This memo is to document the issues associated with the knuckle adaptor (spigot) failures on Wellington City Council's LED streetlights and covers off the background to the problem, a high-level timeline of events, a review of the failures, analysis of data and a brief recommendation on potential ways forward.

The Issue:

On Friday, 10th February 2023 an article appeared in the Dominion Post detailing the experience of a resident who had identified a streetlight lamp that had fallen from the top of its pole. The article went on to discuss the public health and safety risks of similar ongoing failures.

Background:

In 2017, we began work on our LED streetlight rollout project to change all existing High Pressure Sodium lights to more energy efficient LEDs. This project had tight timeframes associated with it which were due to Council's ability to receive an 85% subsidy for the project from Waka Kotahi. To be eligible for this subsidy required completion of the project by 30 June.

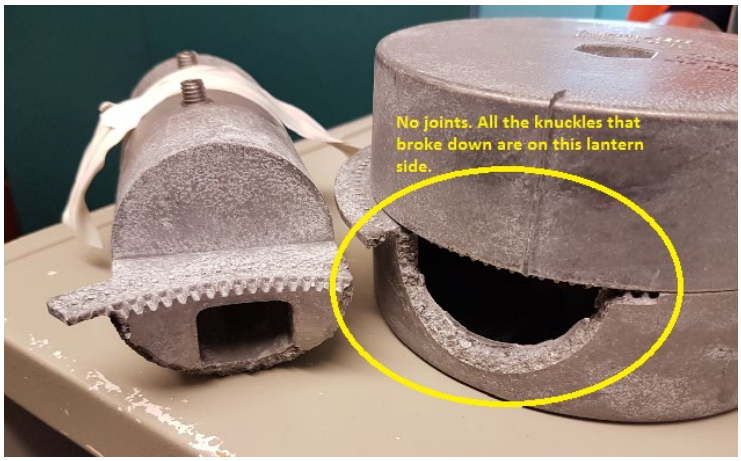
As part of the delivery phase of the project, Council engaged several delivery partners to help expedite the project. One of these partners was a company called Gess Ltd who is a designer, fabricator and distributor of columns and streetlights. Gess were employed by the Council to design, fabricate, test, and produce an item called a knuckle adaptor. The objective of such a device would allow for Council to have a greater degree of tilt of streetlight lamps thereby allowing for greater control over items such as spill or glare.

Over the course of 2017, the streetlight team worked with Gess on the design of the knuckle adaptors, providing contributions to items of the design such as structural components as well as material selection. In October 2017, we signed off on the Gess design (Appendix 1) with the first adaptors being delivered in January/ February of 2018 in time for installation. The testing regime for the adaptors prior to mass production was a static load test and they were fatigue tested to destruction (occurring at around 60kg static weight). These tests were undertaken by a third party with no formal record of the tests seemingly recorded in either Trove or SPOT. The adaptors came with the following certifications:

- Design life = 25 years
- Importance level 1.
- Terrain category 2
- Wind region W
- Height above ground = 12m
- Luminaire sail area 0.1m^2 and 19kg (Italo 3)
- Topographic multiplier (lee zone and hill shape) = 1.0

Following installation, some adaptors on the Wellington network started to fail which resulted in streetlight lamps (each weighing up to 11.8kg) hanging by their service connections. This was raised with Gess who undertook an investigation. The results of their investigation led them to believe that the root cause of the failures could be attributed to the following factors:

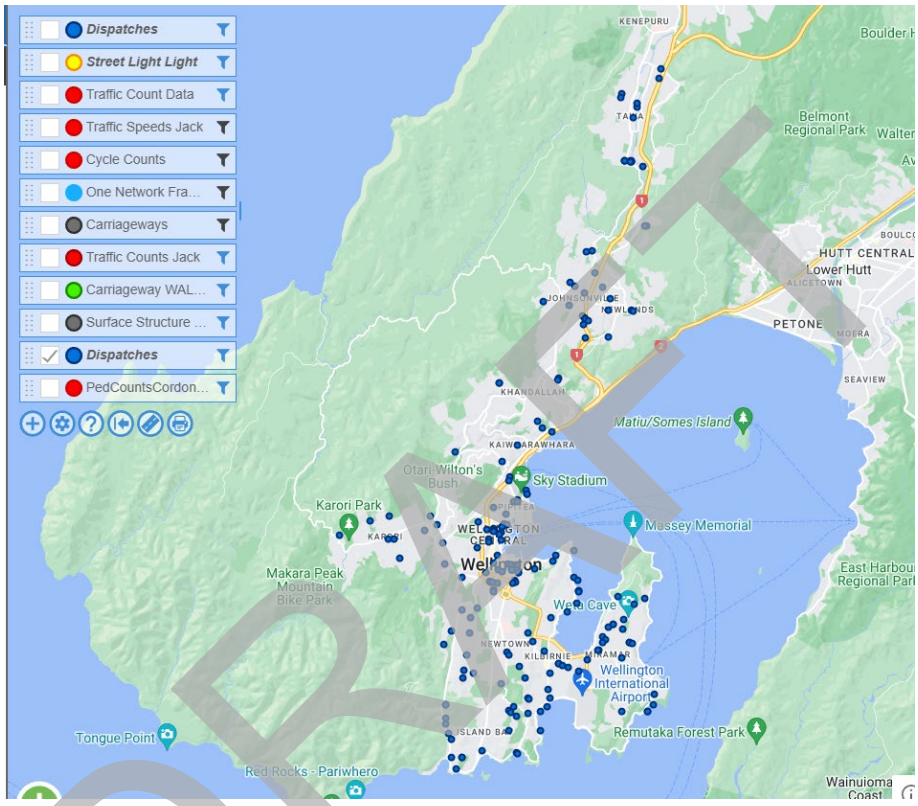
1. Higher wind/wind gusts than designed for
2. Internal casting defect (see yellow bubble below)
3. Installation damage or spigot knocked/dropped prior to installation
4. Car/truck reversing into or hitting a pole
5. Over torque during installation


No joints. All the knuckles that broke down are on this lantern side.

Data Analysis:

From the records we have in RAMM, Fresh Service and CMS we have ascertained the following with regards to the failures:

1. Since the first lights began getting installed in late 2017, there have been 160 reports of hanging lights (failure rate = 0.8%[3])
2. Within the same reporting period there have been 16 streetlight lamps that have fallen from the top of poles (2019 = 2, 2020 = 5, 2021 = 5, 2022 = 2, 2023 = 2)
3. The following areas have had the greatest number of incidents (contributing 34% of all incidents):
    - Te Aro
    - Tawa
    - Miramar
    - Haitaitai



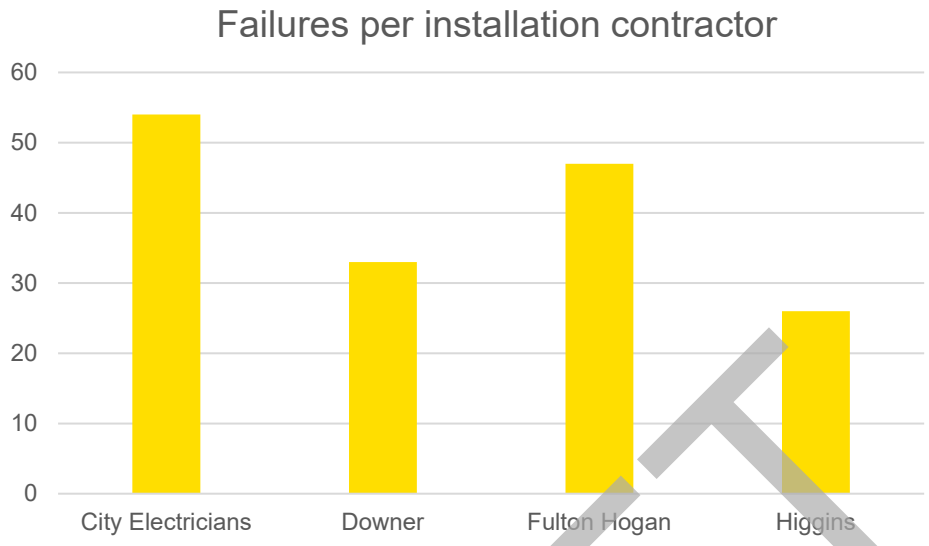
Note: none of the reports were ever captured into Risk Manager as they were reported with no injuries or serious harm.

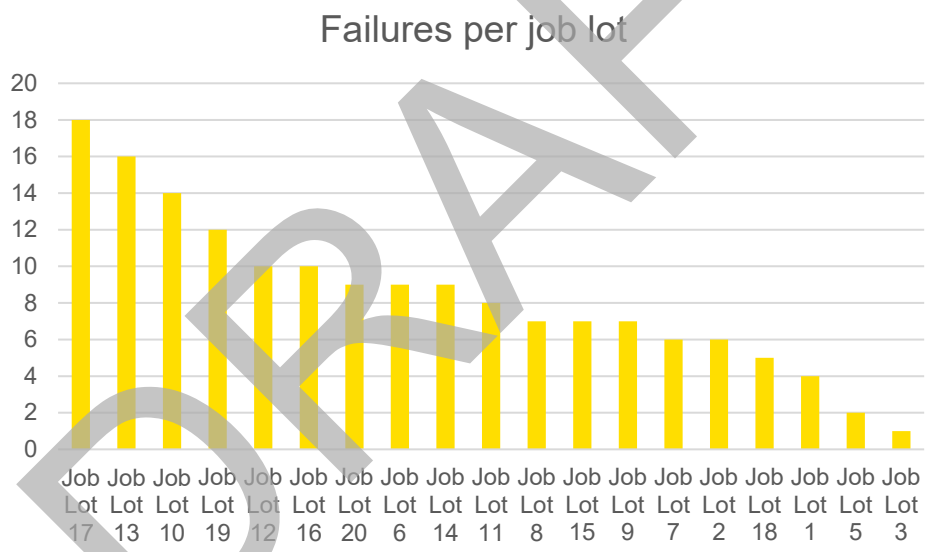
We have also looked at the installation characteristics for the lights to try and identify where these lights could be and if there is any commonality noticeable. There is no logical correlation between failures and the

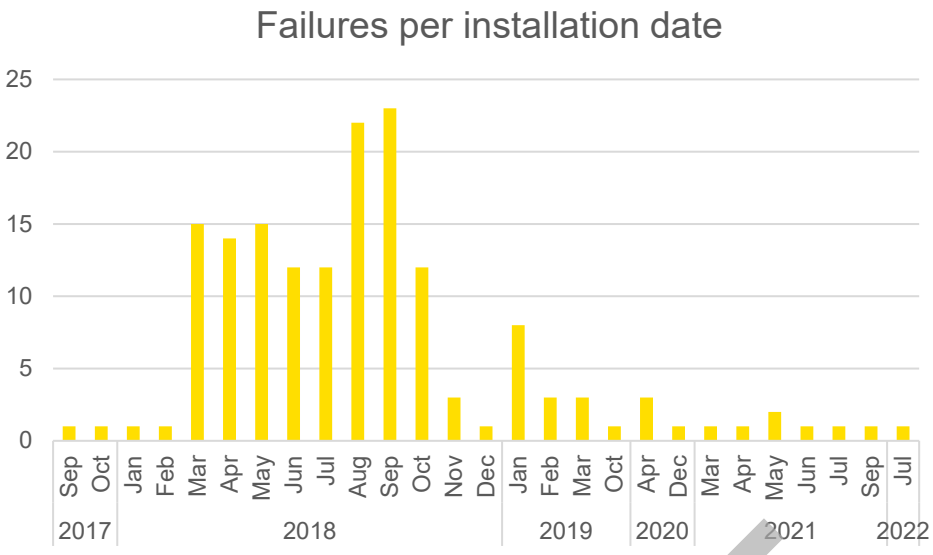
[3] Based on a total asset base of 19,869 streetlights across the city – as per the 2021 Transport Asset Management Plan

installation contractors used, hence we are confident that the failures are not an installation error and are much likelier due to an issue with the adaptors themselves.

There appears to be some correlation with the job lots issued as well as the dates of installation – whilst insufficient to indicate how widespread the issue is, this does provide some indication of priority areas that could be targeted, particularly when combined with the location data.







Public Risk[4]:

As Transport Asset Manager, I was first alerted to the issue in October 2020 when a report came through from the maintenance contractor, Fulton Hogan. I was advised that there was a bad batch of adaptors that had been delivered and due to the nature of the rollout, it was impossible to find where these had ended up on the network. I was also told that due to the nature of the failures (i.e., the streetlight lamp hangs when the adaptor fails), the Council's response to the public safety risk was to treat every failure as a dangerous hazard, meaning that our contractors are required to resolve the issue within two hours of being found.

My evaluation of the risk[5] at the time was that the probability of this event occurring was rare (***event could occur but not expected to occur in the next ten years or could occur in exceptional circumstances***)

[4] Evaluated using the WCC Operational Risk Framework

[5] Note that at the time, there was no formal risk management framework within the Council, but this describes the general thinking of the risk evaluation that I undertook

and so whilst the impact would be major (***noticeable, ongoing impact on public health and safety levels***), it would leave the risk rating at medium with the following outputs:

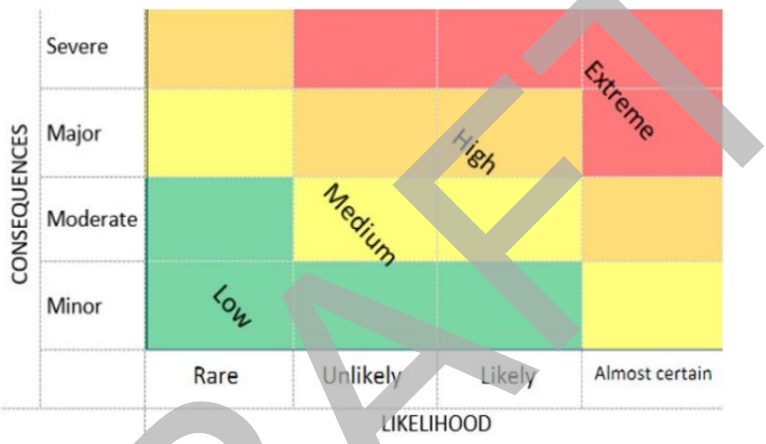
- Tolerance: Risk within Unit or Group's risk appetite
- Impact: Would somewhat impact on quality, quantity and timeliness of Unit's or Group's objectives and outcomes but overall can still achieve
- Monitoring & Reporting: Monitor for increase in risk, include in standard reporting

After a period of monitoring and reviewing what the latest data tells us the public risk rating would now be:

- Probability: Almost Certain ***(Event will probably occur this year or has occurred in the previous year*)**
- Impact: Remains the same - Major
- Risk Rating: Extreme

This would result in the following outputs:

- Tolerance: Risk unacceptable to Unit and Group Manager
- Impact: Would stop a number of key objectives and outcomes being achieved
- Monitoring & Reporting: Escalation to ELT - increased reporting required



Findings:

Whilst the root cause of the failures is most likely due to the knuckle adaptors themselves (rather than installation errors), it is uncertain from the data analysis as to how prevalent the issue is on the network (i.e., was there a faulty batch or is it a more widespread issue).
Some of my key findings are:

1. The testing regime specified a static load test – this does not accurately simulate the nature of the environment in which the adaptors would be operating – i.e., oscillations with significant vibration. As such I have a concern that the specified strength rating of 60kg could be significantly overstated.
2. A review of some of the failed units has led me to believe that there are some issues with either the casting of the failed units or with the material selection (or both). This is evident from some of the cavities noticeable in the alloy where the metal has sheared off as well as discoloration which could be attributed to early stages of galvanic corrosion – however galvanic corrosion is not the cause of failure; the root cause looks more likely to be metal fatigue.
3. Structurally there are some concerns over the lack of gussets on the outreach arm end of the adaptors (end where the failure occurs). The presence of gussets would increase the stability and strength of the unit and potentially also offer increased dampening for wind vibrations. I note that this issue was raised with Gess when failures first started occurring but cannot find any response from Gess addressing this matter.
4. It is uncertain what level of recourse the Council will have with Gess as the supplier given that the units came with a one-year warranty and defect period as well as the fact that Council Officers were intrinsically involved with the design of this bespoke item and signed off on the drawings. However, we will take legal advice on this.
5. Whilst we will probably never be able to identify exactly where the future failures are likely to happen, there is some correlation that can be made with locations of previous failures cross referenced against job lots, installation dates and high wind and corrosion areas which could offer higher priority areas for remediation. However, this is something that should only be looked at if

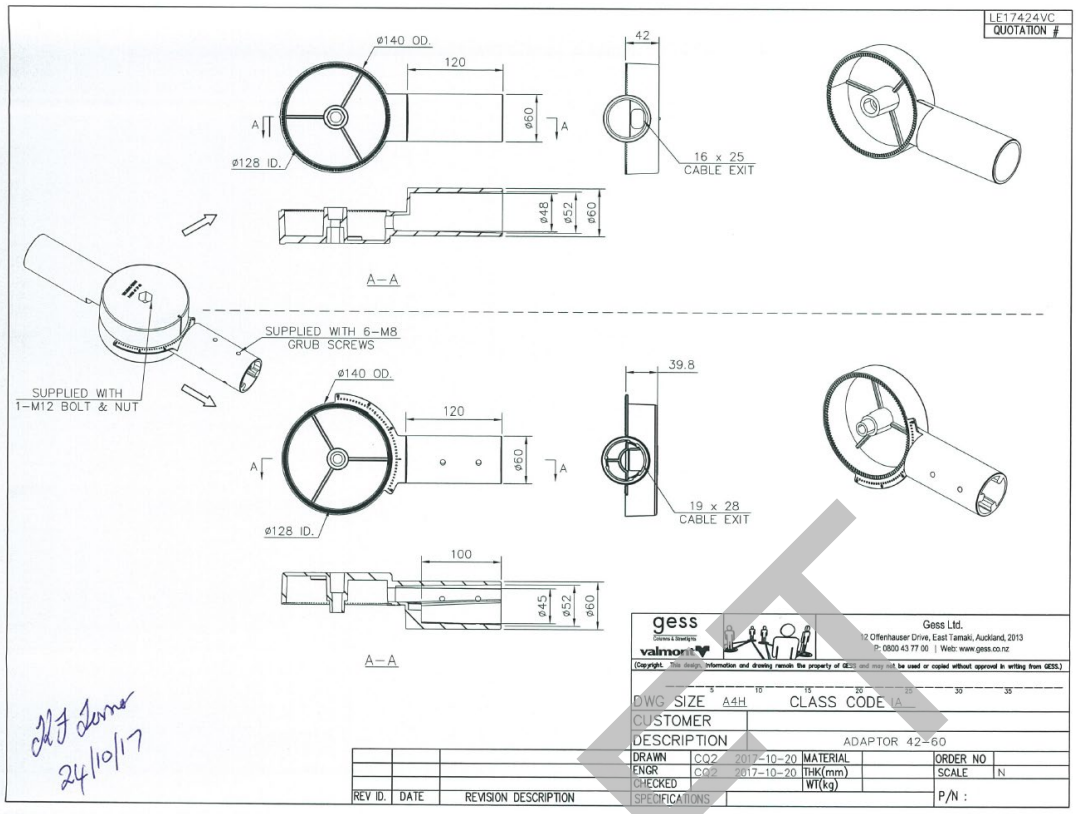
there is sufficient evidence to prove that the problem is limited to only some adaptors and not the entire network.

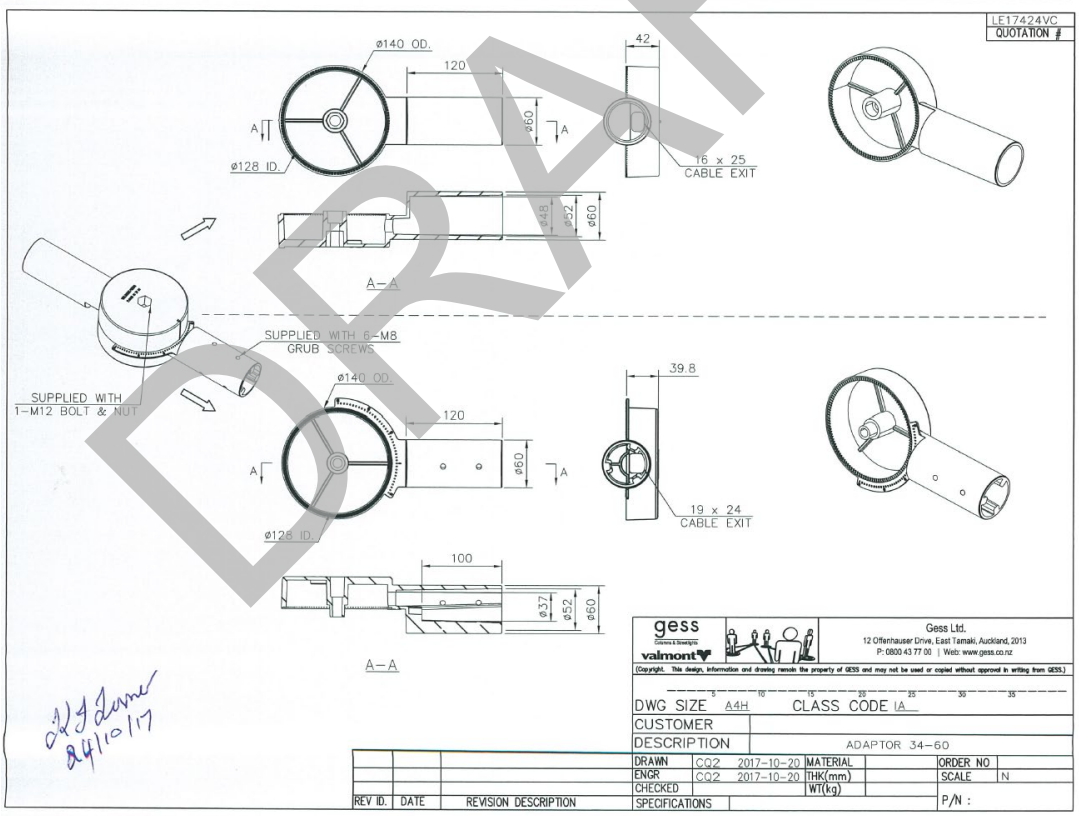
6. Should all adaptors on the network require removal, the estimated cost would be in the order of $3.7m (opex) and would take approximately 2 years to complete provided there are 4 x line crews made available to undertake the work. This could be accelerated should additional crews be obtained, but this skill set is limited in the region so the Council would need to draw on existing relationships with utilities such as Wellington Electricity as well as other neighbouring councils. We would find out what is available through a full procurement process.

Recommendations and Actions:

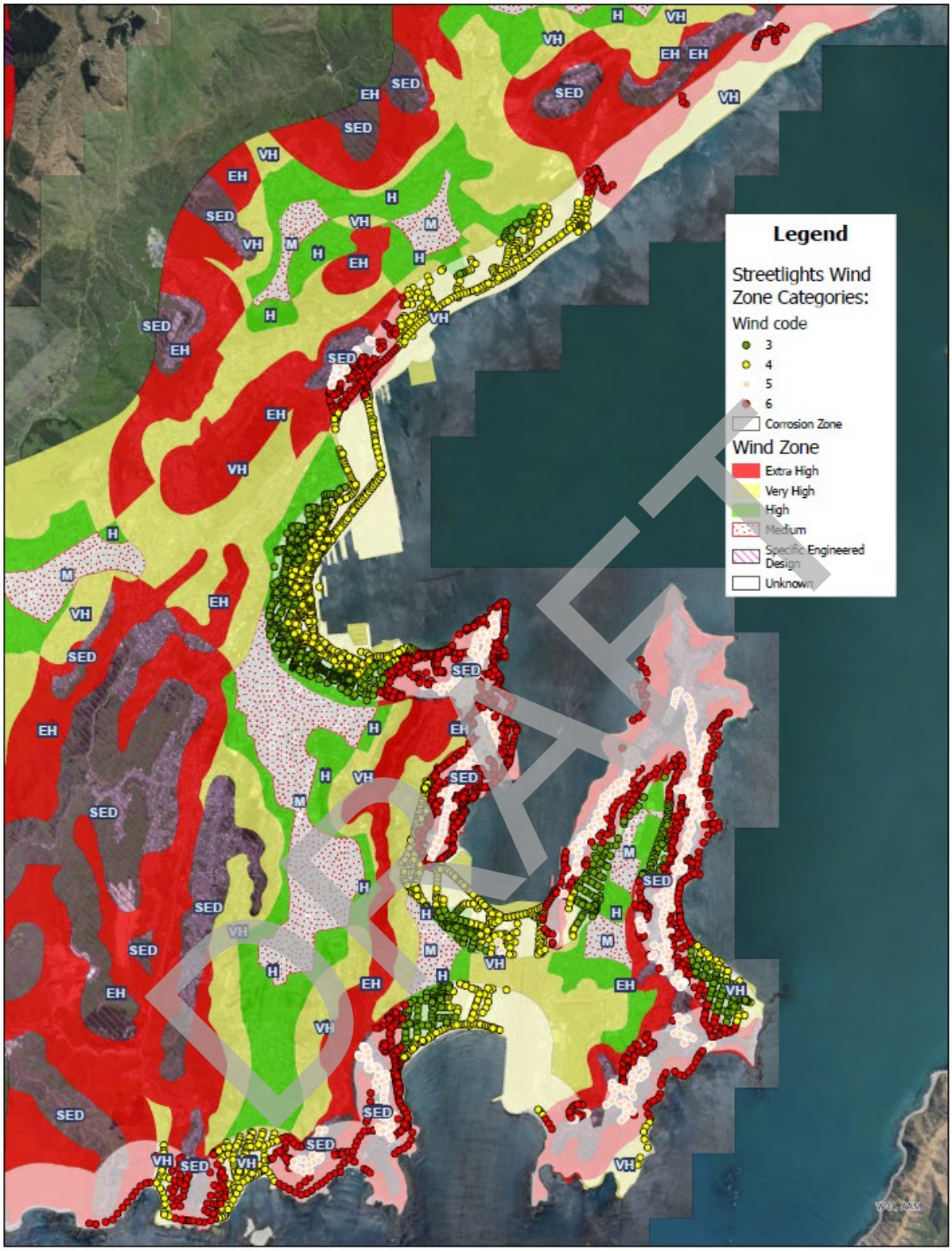
1. We have alerted all roading contractors to include streetlight inspections into their routine network inspections, so we have more eyes on the network than just the streetlighting contractor. Any identified will be dealt with as a dangerous hazard.
2. To fully ascertain the root cause of the adaptor failures, WSP have been engaged to undertake the following (results of which are expected to be provided by end February):
    - Test the adaptors to fatigue failure in an oscillating manner to mimic the up and down movement of the light in high winds
    - Check the composition of the material and the drawings and advise of inefficiencies that could be contributing/ causing failure
    - Provide a report of the findings with a determination as to root cause of failure as well as any potential remediation options
2. In conjunction with this testing, we will create a plan evaluating timeframes and costs for replacement/ remediation for several scenarios – this will also be completed by end February.
3. The best recourse to reduce Council's risk as quickly as possible is to use the maintenance contractor to remove adaptors from streetlights in the locations with high wind loading and high corrosive exposure (a map of these areas is shown in Appendix 3). The immediate priority focus will be on the areas of Te Aro, Hataitai, Tawa and Miramar followed by lights along the South Coast. This will be included as a scenario into the plan for consideration.
4. It is also recommended that a legal review be undertaken on all contract documents with Gess to understand what level of recourse the Council will have with the supplier.

Appendix 1





Appendix 2



Count of Streetlights by Zone:

Zone 3: 1290
Zone 4: 1878
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Zone 6: 1423

Appendix 2 – WSP Report

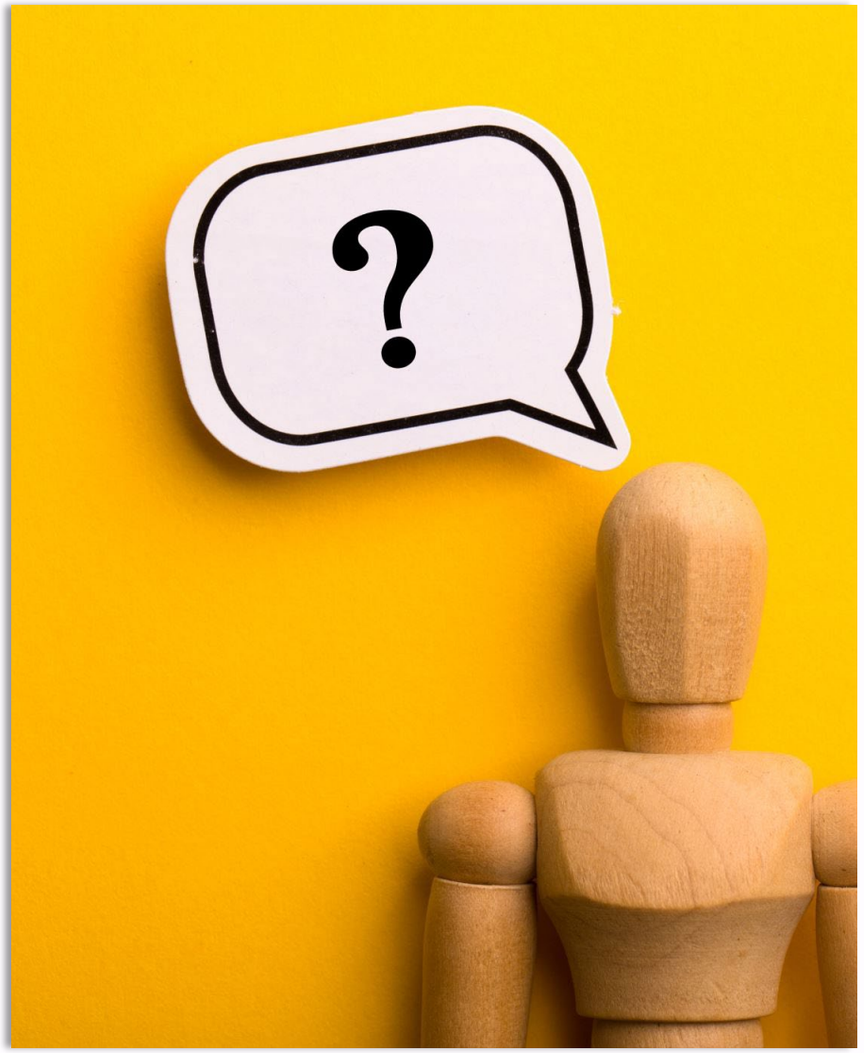
Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Streetlight update

Update on knuckle adaptor failures

Content

- Background
- Understanding the issue
- What we are doing
- Impact on BAU



Background

- In 2017 we started the rollout of the LED programme to enhance energy efficiency
- We replaced ~17,000 streetlights with LEDs over 2 years
- 85% was paid for by a Waka Kotahi grant
  - Total cost ~ $18m
  - WCC cost ~ $2.7m
  - Savings ~ $15.3m
- A special part was added to the original design to aid in re-directing the lights to prevent potential glare
- This part was co-designed with the manufacturer and a WCC engineer signed off on the design thereby accepting the risk
- It is this part - a knuckle adaptor - that has been prematurely failing

Adaptor failures

- Initial testing was undertaken by the manufacturer prior to mass production – this was a static load test and destruction occurred at around 60kg static weight

- After the initial failure of 2 adaptors in 2019, the manufacturer undertook some additional testing which concluded that the following factors may have contributed to the failures:

    - Higher wind/wind gusts than designed for,
    - Internal casting defect
    - Installation damage or spigot knocked/dropped prior to installation
    - Car/Truck reversing into or hitting a pole (As raised by one contractor)
    - Overtorque

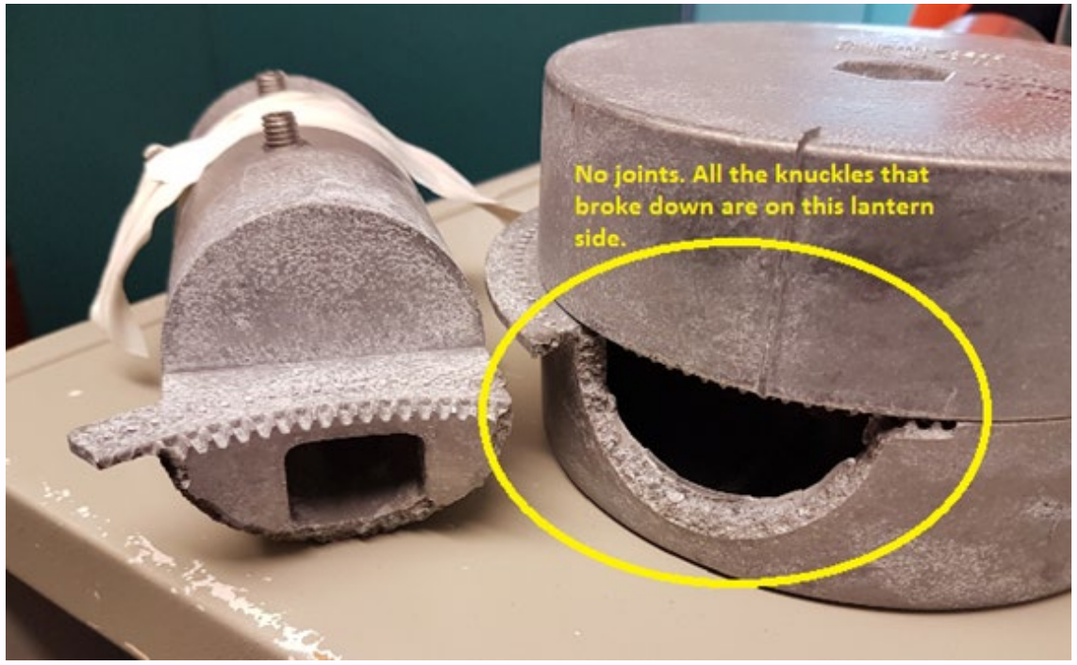
- The testing engineer also noted:

    “the consequence of failure is also low and does not represent a hazard to human life as the cable prevents the luminaire from falling”

Since these initial failures, there have been an additional 15 fallen streetlights (0.1%)

Root cause of failure?

- Independent testing undertaken this year has concluded that the root cause of failure is due to metal fatigue on the outreach arm side of the knuckle adaptor.
- All streetlights droop before falling – they hang by the connection cable.
- Independent engineering assessment indicated failure will occur under
  - high wind loads, either due to vortex shedding (flow of wind),
  - high wind speeds,
  - topographical multipliers (lee zone and hill shape),
  - higher than expected drag from the luminaire (pull of streetlight)
  - or a combination of the above.
- Treated as a dangerous hazard - removed within 2 hours after reporting

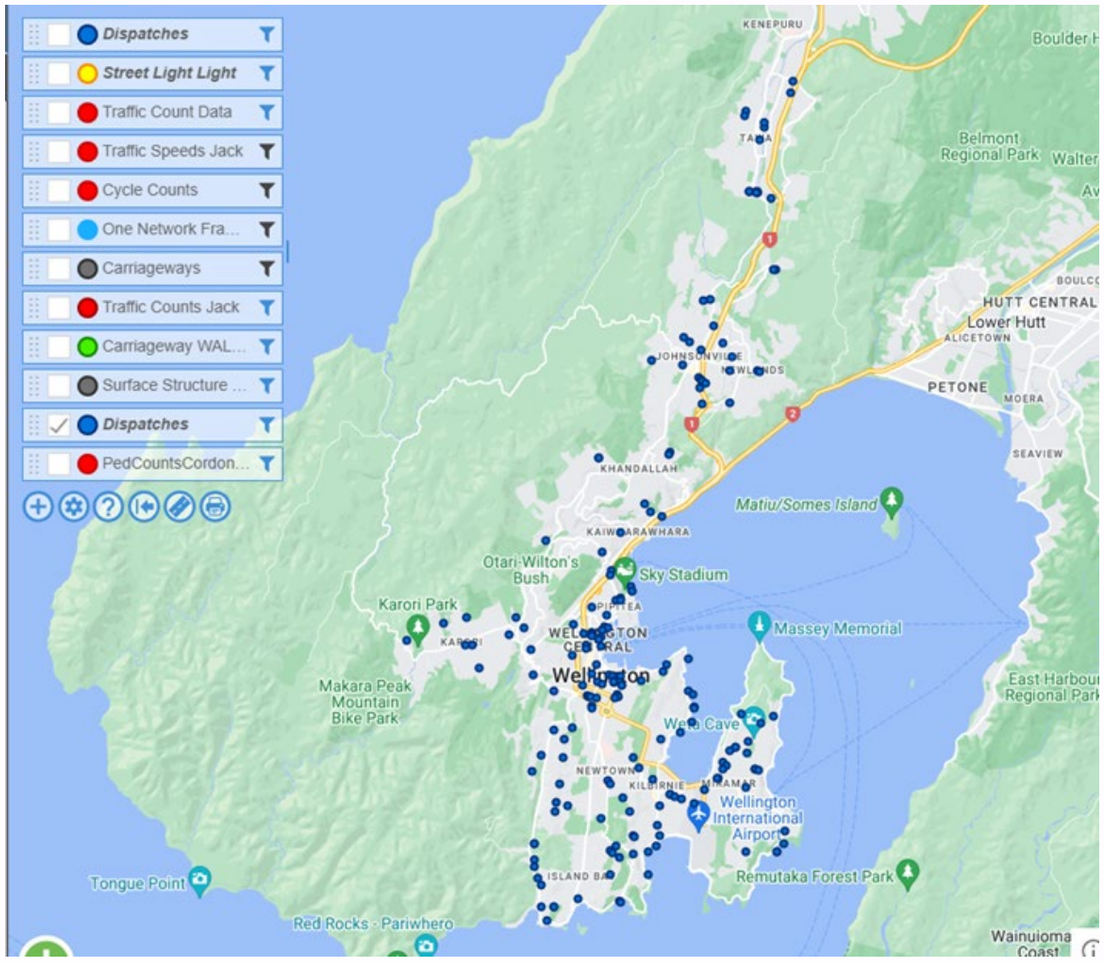


What have we done?

- Reviewed all LED rollout documents including the Business Case, Contracts, Implementation plans and schedules etc.
- Undertaken trend analysis of failures and compared to installation dates, suburbs, contractors etc.
- Had an independent review of adaptors done by an external laboratory
- Reviewed remediation options
- Developed a plan for remediation and associated costs and resources
- Secured additional resources to start removing knuckle adaptors from highest risk areas
- Market sounding for additional contracting resource to meet proposed timeframes –procurement process underway
- We have removed 486 of knuckle adaptors since start February
- We have increased the fault-finding inspections on our network – our roading contractors inspect as well as our streetlight contractor

Current Situation

- ~17,000 adaptors on network
- Since the LED rollout in 2017/18:
  - 161 hanging lights
  - 17 lights have fallen (0.1% failure rate)
- Our investigations and testing has identified:
  - Whilst the adaptors passed the specified tests in 2017, they are unsuitable for “high oscillation vibration” – i.e. strong winds
  - Highest risks are the heavier 11.2kg lights in high-wind areas
    - This equates to around 3,200 streetlights, which are being fixed as priority
  - No correlation found between failures and installation contractors



What's the plan?

Evaluated remediation options:

Option	Pros	Cons
Re-design knuckle adaptors	Retain tilt function	Costly Time consuming
Strengthen knuckle adaptors	Retain tilt function	Costly Time consuming
Remove knuckle adaptors (preferred option)	Lowest cost Most efficient removal of H&S risk	Lose tilt function

Three available field crews working now to remove adaptors from highest risk areas – high wind zones

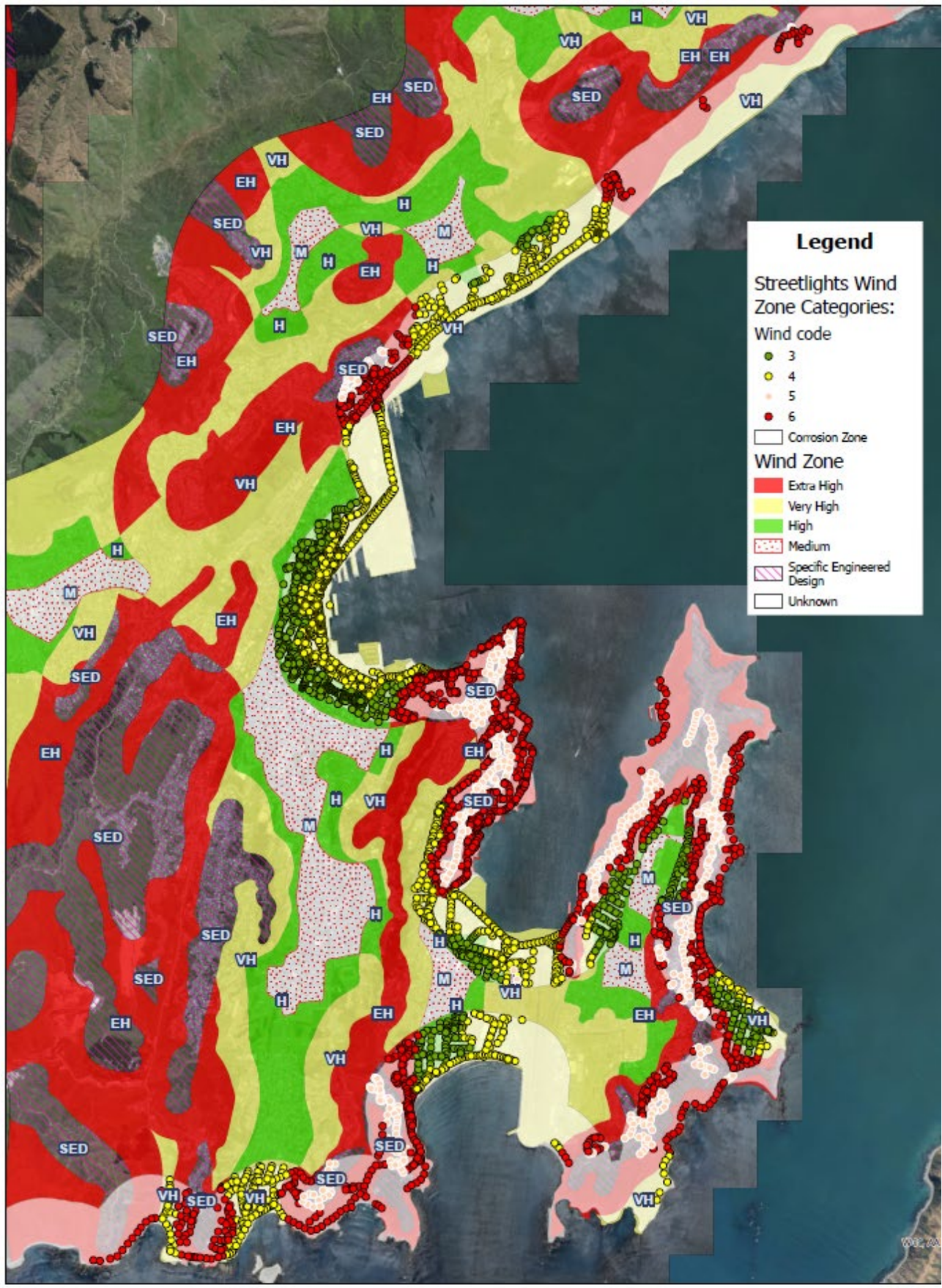
Deal with heaviest (11.2kg) lamp heads first

Procure more resource as soon as possible noting that only 4 companies are certified to work on the network within the region

Wind areas

Zone	Number of lights
Zone 1 – extra high	1,052
Zone 2 – very high	429
Zone 3 - high	1,058
Zone 4 - medium	661
All others	13,406
Total	**16,606**

Total cost of work is in the order of $6m

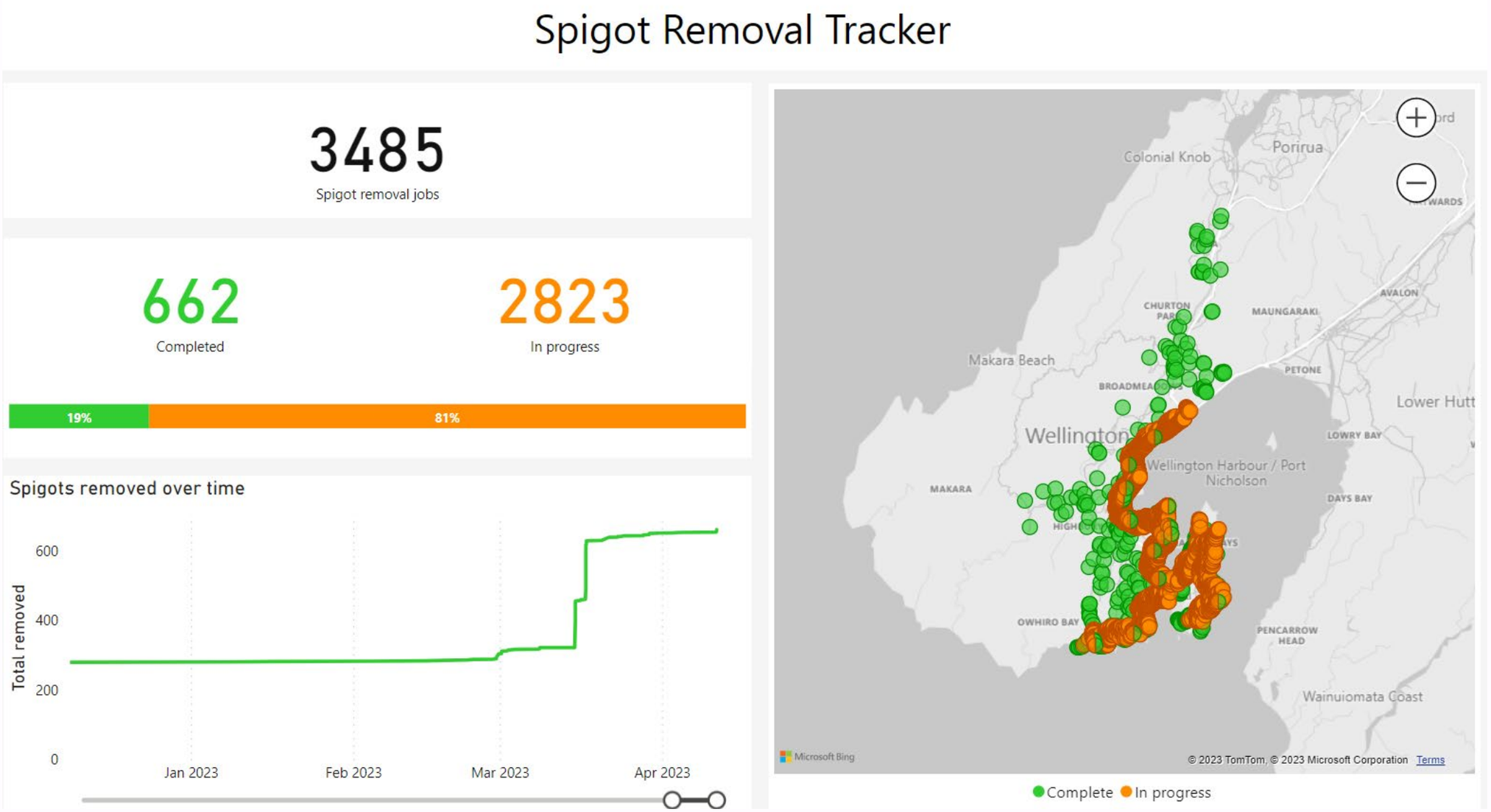


Count of Streetlights by Zone:

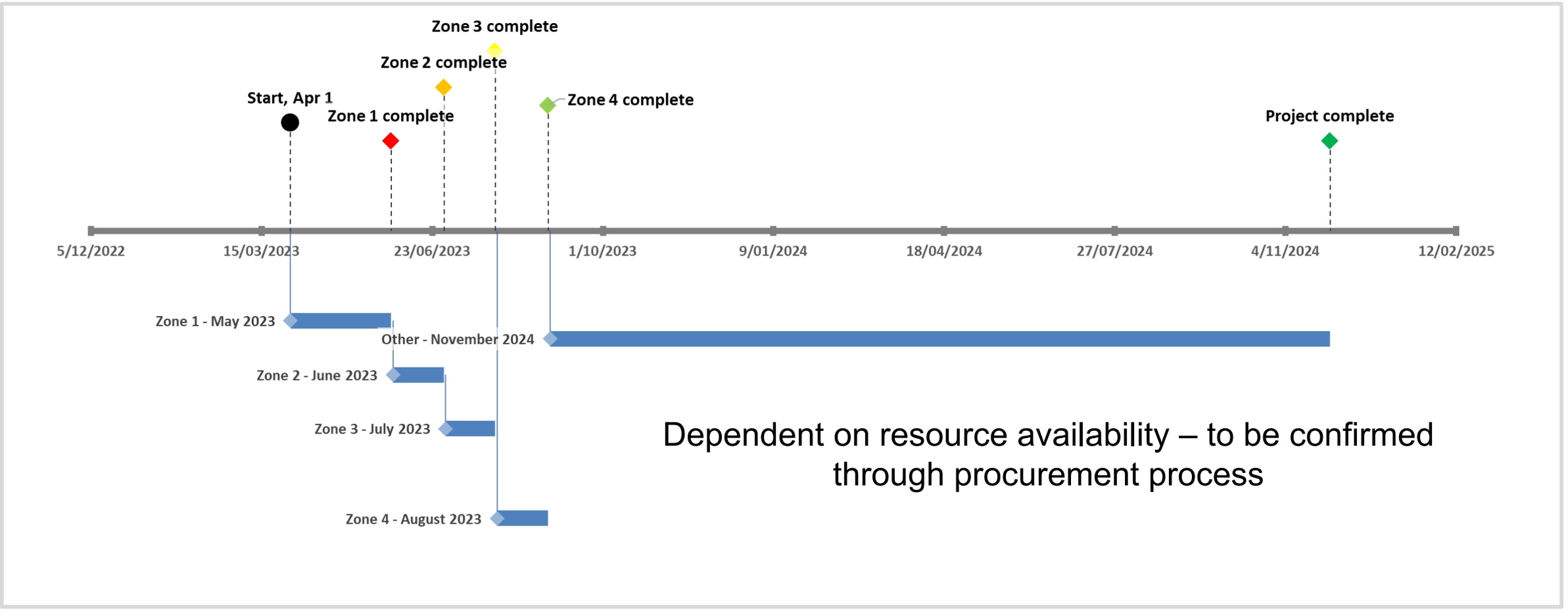
Zone 3: 1290
Zone 4: 1878
Zone 5: 651
Zone 6: 1423

Where are we with the plan?

- Secured an additional contracting resource
- ~ 45% of Zone 1 adaptors removed to date
- Created a live tracker to monitor performance
- Will remove all adaptors in zones 1-4 by end August
- Remaining adaptors will be removed by end of 2024



Proposed Timeline



Dependent on resource availability – to be confirmed through procurement process

Impact on BAU

Reduction in crews available for:

- Maintenance
- Infills
- Renewals

Dangerous Hazard response will remain the same

With winter approaching, we might see an increase in lighting and glare complaints

Learnings

- Stepping into design process thereby taking on design risk
- Procurement under urgency
- Poor contract management
- Lack of project management discipline

Since 2018, there have been significant organisational improvements made in these areas

Internal Audit findings

- Poor understanding of risk management and risk frameworks
- Formal issues management process is required

Full report will be brought to Audit & Risk Committee

Asha Harry

From: [redacted]
Sent: Thursday, 13 July 2017 4:53 pm
To: [redacted]
Cc: [redacted]
Subject: Re: LED Notes and Installation Technical Specs

Thanks [redacted],

[redacted]

We have already started a dialog with LRL about the whole order and, they are aware of the situation, and this project has their full support and is a priority for them.

We are seeking clarification from LRL on the compliance and testing of the new driver requirements in the NXTs, and if these could cause any delays to the initial order for 2000 units . We also need to confirm that there will not be any supply issues for the new driver spec requirement.

[redacted] and I are [redacted] running through ideas and scenarios, and we think the start date as the biggest risk to the programme. We also agree with that you need 6000 units to start. These 6000 units certainly mitigates the risk of running of lights. Please correct us if our maths or assumptions are are wrong,Conservatively the 4 crews can install 100 lights a day, and they work 5 days a week?, that would be 500 lights a week installed. This would mean the install of all 16,000 lights, would be a 32 week programme, and that is conservative? We can't help thinking that considering from mid October to end of 2018 you have more like 62 weeks, that a later start date for install, would decrease risks, the biggest risk we see to your programme is running out of lights. If one container get delayed or a ship sinks, or if we have a component shortage or any other unforeseen circumstance outside of our control, its puts the whole continuous install programme at risk.

So with that in mind, We will confirm a delivery date of the 2000 units soon. We could be wrong, however we feel that LRL are unlikely to be able to deliver 6000 lights for the start date of 10th of October, considering an order for 4000 lights hasn't been placed yet and the new driver type. We would like you to at least consider a later start date, based on when we can land 6000 units in Wellington.

Your thoughts and feedback would be greatly appreciated.

Kind Regards
[redacted]

On 13 July 2017 at 14:49, [redacted] wrote:

> Hi [redacted]
>
> Thank you for the meeting yesterday. I hope you managed to get back to Christchurch without too many problems.

I have attached a copy of the installation specs as discussed. There are some notes at the end of those specs addressing the need to pre-programme the lights, consequences of delays, etc. as discussed.

Regarding the number of luminaires, there are 2 components. Firstly there are those the 4 installers will be contracted to do under the accelerated rollout, then there are those our maintenance contractor will install. In the latter category, I expect we will install lights on the State Highway, and these lights will be fully paid for by NZTA, so we don't need to do them during the rush of the accelerated rollout. There are other problem lights, and rural area lights we will assign to the maintenance contractor to address simultaneously with the rollout. So the total number of lights to be installed will be greater than those we do within the accelerated rollout programme. The total number (P and V) will most likely exceed 15,000.

I have included in the specs, reference to spigot adaptors and to blanking caps. Note the specs will also apply to the pedestrian crossing lights and we have yet to discuss with our preferred supply how we will handle adaptors. My approach is that adaptors are the responsibility of the installer, but where adaptors are supplied as part of the luminaire supply, the installers do not carry the supply cost of the adaptors and should price their tenders accordingly.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
[redacted]
W Wellington.govt.nz |

--

[redacted] | Technical Sales (TechIES)
Energylight
[redacted]

Asha Harry

From: [redacted]
Sent: Tuesday, 1 August 2017 11:20 am
To: [redacted]
Subject: RE: Update
Attachments: Purchase Order P1010428-0.pdf

Thanks [redacted]

We have made some progress here. A Purchase Order has been raised for the luminaires, and a copy is attached. We have also issued the Installer's RFT.

The standard wording on our PO refers to our standard terms and conditions, and states they will apply in the event there is no written agreement for the procurement.

As discussed with [redacted] this Purchase Order is issued contingent on a written agreement between us. The Purchase Order will become null and void if there is no written agreement. Can you acknowledge this please [redacted].

Regarding our meeting later in the week, as I am supposed to pre-register my visitors, do you have the names of those who will attend? If I pre-register you successfully, all you need to do is ask for me at reception and your visitor passes will be automatically printed. All part of delighting our visitors!

Regarding the spigot adapters, I am disappointed in myself for not recognising the tilt issue earlier. I realise we now need a supply of angle adaptors to bring the outreach arm to level, then use the luminaire limited internal 5 deg adjustment to do the final correction. The installation RFT currently requires installers to purchase and install adaptors, but it also encourages installers to work with the luminaire suppliers in sourcing these. The intention is clearly economies of scale – if all installers used a single source, unit costs should come down.

We are told by our maintenance contractor that the majority of outreach arms are 42mm and close to 15 degree angle. There would be exceptions to both the angle and the diameter, but how many is not clear just yet.

One of the things I need to discuss with you later in the week, is how we can best handle a bulk supply of standard adaptors, and some of altered configuration. Keen to hear your suggestions.

Regards

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
[redacted] | W Wellington.govt.nz |

From: [redacted]energylight.[redacted]
Sent: Tuesday, 1 August 2017 9:52 a.m.
To: [redacted]
Subject: Update

Hi [redacted]

The supply agreement is with our lawyer, unfortunately there is a hold up, as she is away sick. We are hoping to have the contract to you for tomorrow for review. So for now we we will have to postpone our trip up tomorrow, till later in the week or early next week.

As always happy to discuss

Regards
[redacted]

--
[redacted] | Technical Sales (TechIES)
Energylight
[redacted]
www.energylight.net

Wellington City Council

PURCHASE ORDER

Absolutely Positively **Wellington** City Council
Me Heke Ki Pōneke

GST number: **53-204-635**

Telephone: +64 4 499 4444
Email: apinvoices@wcc.govt.nz

Energy Light Ltd
PO Box 2733
Christchurch 8140
New Zealand

Attention: [redacted]

Order Nbr: P1010428
Date Issued: 31/07/2017
Vendor Nbr: 11479
Date Required: 07/08/2017
Requisition Nbr: R0034421
Page: 1 of 1

Product Code	*Description*	*Qty*	*Inc Unit Price*	*Inc Amount*
100293	Urban lighting services	0 EACH	0.00	[redacted]

Order Total : [redacted]

Email invoice to: apinvoices@wcc.govt.nz
Invoice to: Wellington City Council
PO Box 682
Wellington 6140

Deliver to: Wellington City Council
101 Wakefield Street
Wellington Central
Wellington 6011

Enquiries
Please telephone our call centre on +64 4 499 4444 and ask to speak to the Buyer - [redacted]

Terms
Unless the supply of goods or services is provided under a written agreement with us, acceptance of this purchase order constitutes acceptance of Wellington City Council Trade Terms - see www.wellington.govt.nz

The above Purchase Order Number must appear on all shipments, shipping papers, invoices and correspondence. Over shipments will not be accepted unless authorised by the Buyer prior to shipment

Asha Harry

From: [redacted]
Sent: Wednesday, 9 August 2017 1:20 pm
To: [redacted]
Cc:
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Re: Spigot Adaptors
Attachments: LE15372 Adapter 34 & 42-51 Dwg.pdf; LE15372 Adapter 34-42 Dwg.pdf; LE15372 Adapter 42-51 Dwg.pdf; LE15372 Combination Adapter Dwg.pdf; LE16130 C515816 LED SPIGOT ADAPTOR Dwg.pdf; LE16130 C515817 STEPPED SPIGOT ADAPTOR FOR 48 OD PIPE Dwg.pdf

Okay thanks,

We are working on a design at the moment for am adjustable spigot adapter.
The headache will probably be water ingress.

See some similar (fixed angle) types that we do.
They have MOQ's and do vary in price from [redacted] ea.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/valmont/products

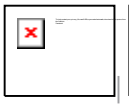
On 8 August 2017 at 16:03, [redacted] wrote:

> Hi [redacted],

The max. would be 20º.

[redacted]

[redacted]
Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council
[redacted]

[redacted] | **W** Wellington.govt.nz |  | 

From: [redacted]
Sent: Tuesday, 8 August 2017 3:34 p.m.
To: [redacted]
Subject: [SPF: Suspicious Sender] Re: Spigot Adaptors

Hi [redacted],

What is the worst case outreach spigot tilt you have on the network at the moment - is it say 20º upward? or bigger or less?

i.e the more accurate we can be on the angles needed, the less headache we have in the design.

Rgds

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/valmont/products

On 8 August 2017 at 13:55, [redacted] [redacted] wrote:

Hi [redacted],

Further to your discussion with [redacted] just now, sending you NXT's details as follows:

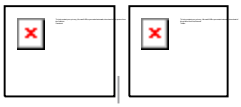
There are mainly two different variants: NXT – M & NXT –S.

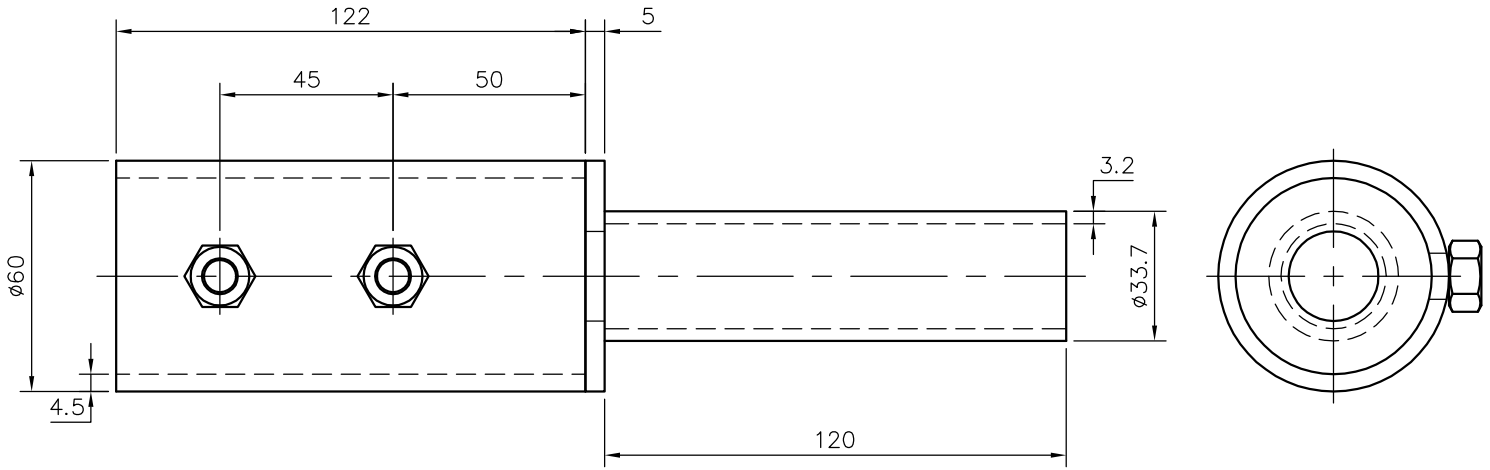
Regards,

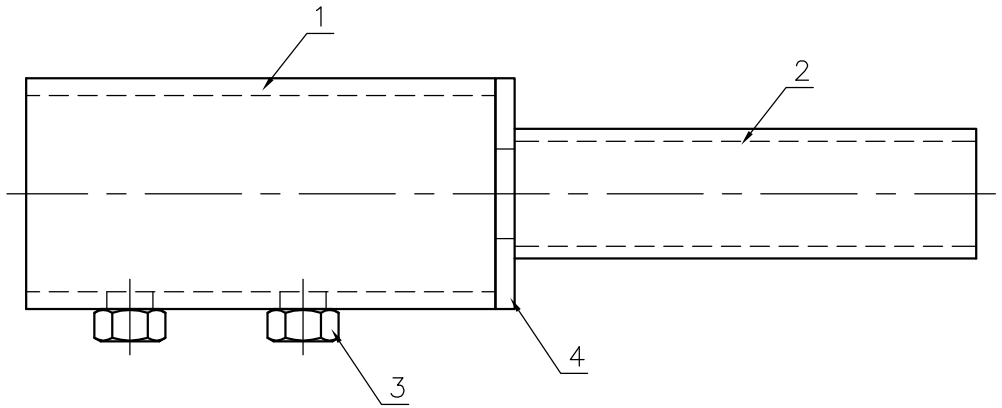
[redacted]

[redacted]

[redacted]
Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council
[redacted]

[redacted] | **W** Wellington.govt.nz | 





NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED AS PER AS/N7S 4680

NO	PART NO.	DESCRIPTION	QTY
5		M10 x 20 SS SET SCREW	2
4		PLATE 60 OD x 25 ID x 5 THK.	1
3		NUT M10 BLACK	2
2		PIPE ø33.7 x 3.2 WALL x 120 LG. Q235B	1
1		PIPE ø60 x 4.5 WALL x 122 LG. 235B	1

gess Columns & Streetlights
valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

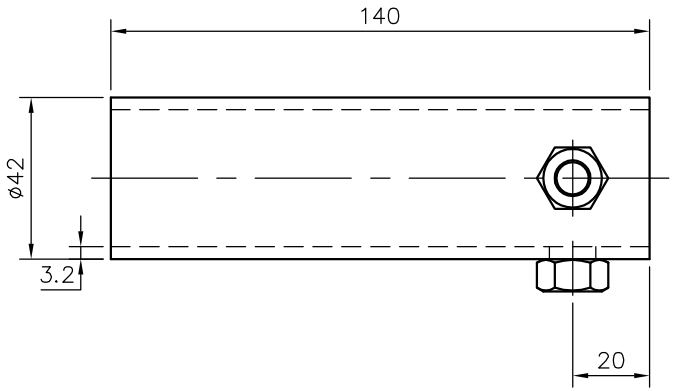
DWG SIZE A4H CLASS CODE IA

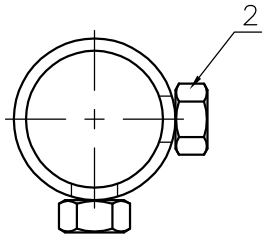
CUSTOMER

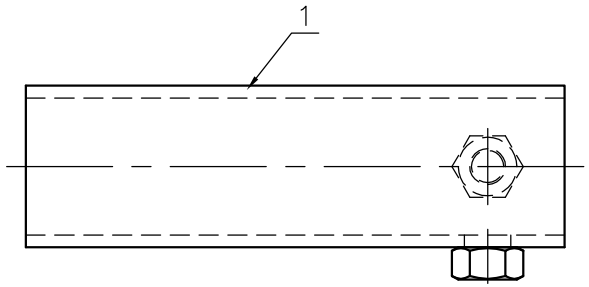
DESCRIPTION STEPPED SPIGOT ADAPTOR FOR 48 OD. PIPE

REV ID.	DATE	REVISION DESCRIPTION

DRAWN	JJH8	2016-02-19	MATERIAL		ORDER NO
ENGR	CQ2	2016-02-19	THK(mm)		SCALE
CHECKED			WT(kg)	1.5	P/N :C515817
SPECIFICATIONS					







NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED AS PER AS/N7S 4680

NO	PART NO.	DESCRIPTION	QTY
3		M10 x 20 SS SET SCREW	2
2		NUT M10 BLACK	2
1		PIPE ø42 x 3.2 WALL x 140 LG. Q235B	1

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valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE IA

CUSTOMER

DESCRIPTION LED SPIGOT ADAPTOR

REV ID.	DATE	REVISION DESCRIPTION

DRAWN	JJH8 2016-02-19	MATERIAL		ORDER NO
ENGR	CQ2 2016-02-19	THK(mm)		SCALE
CHECKED		WT(kg)	1.0	P/N :C515816
SPECIFICATIONS				

LE15372
QUOTATION #

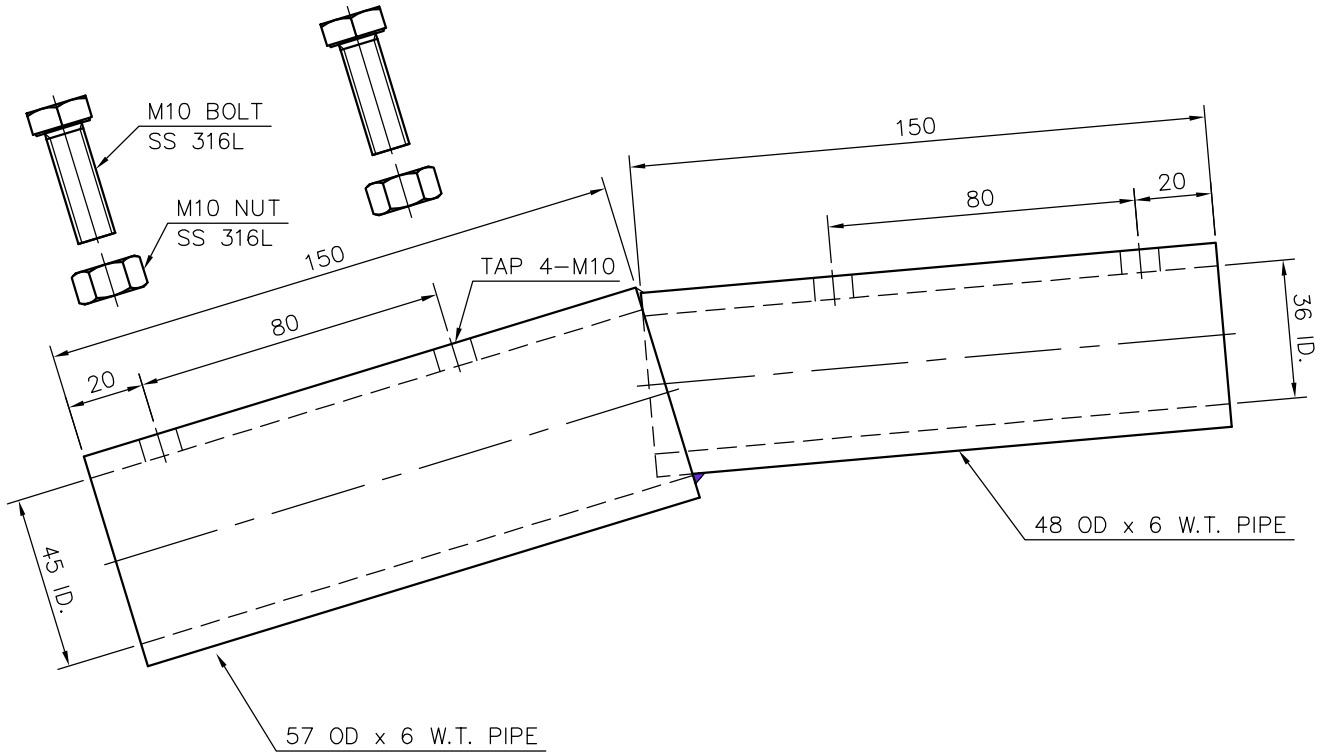
DESIGN APPROVAL

☐ COMPLIANT ☐ NON-COMPLIANT

NAME: _____

SIGN: _____

DATE: _____



NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED PER ASTM A123

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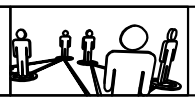


Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE ___

CUSTOMER	OPUS
DESCRIPTION	COMBINATION ADAPTER

REV ID.	DATE	REVISION DESCRIPTION

DRAWN	CQ2	2015-11-04	MATERIAL		ORDER NO	
ENGR	CQ2	2015-11-04	THK(mm)		SCALE	N
CHECKED			WT(kg)			
SPECIFICATIONS					P/N :LE15372-4	

LE15372
QUOTATION #

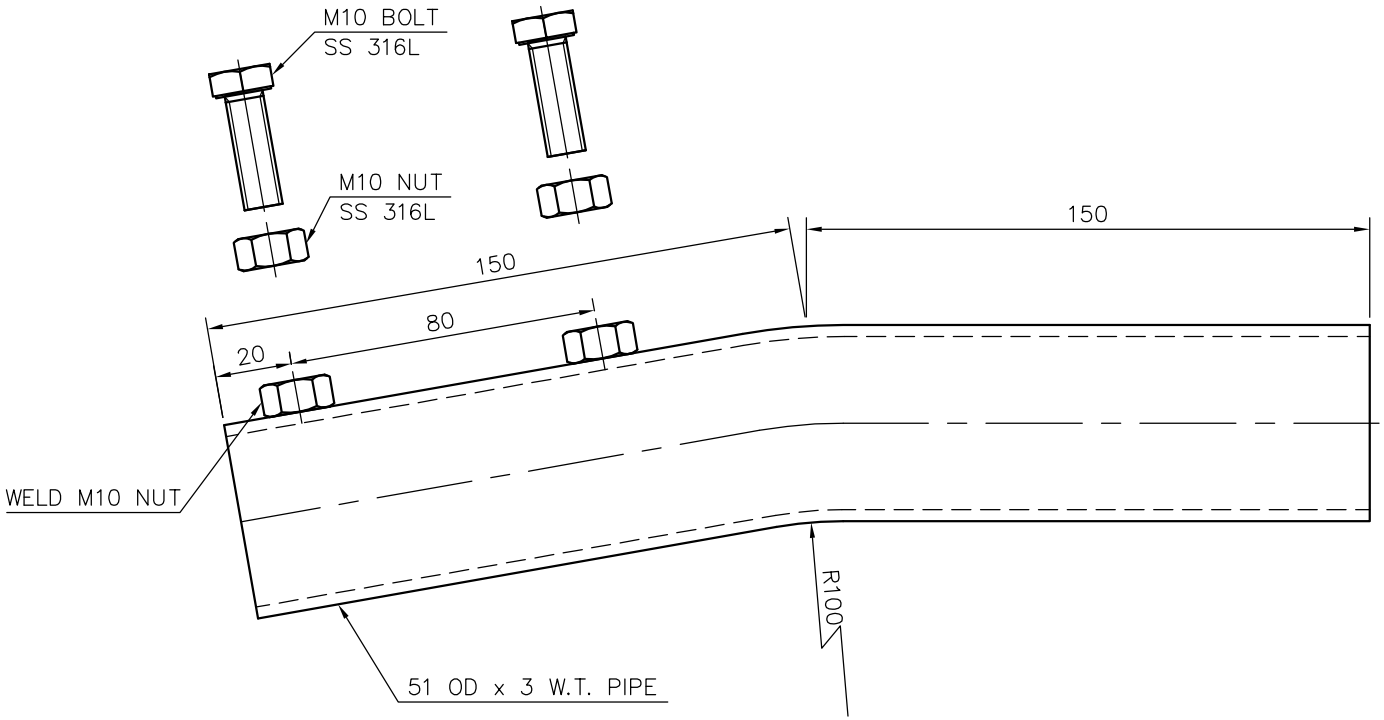
DESIGN APPROVAL

☐ COMPLIANT ☐ NON-COMPLIANT

NAME: _____

SIGN: _____

DATE: _____



NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED PER ASTM A123

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P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE ___

CUSTOMER	OPUS
DESCRIPTION	ADAPTER 42-51

			DRAWN	CQ2 2015-11-04	MATERIAL		ORDER NO	
			ENGR	CQ2 2015-11-04	THK(mm)		SCALE	N
			CHECKED		WT(kg)		P/N :LE15372-2	
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS					

LE15372
QUOTATION #

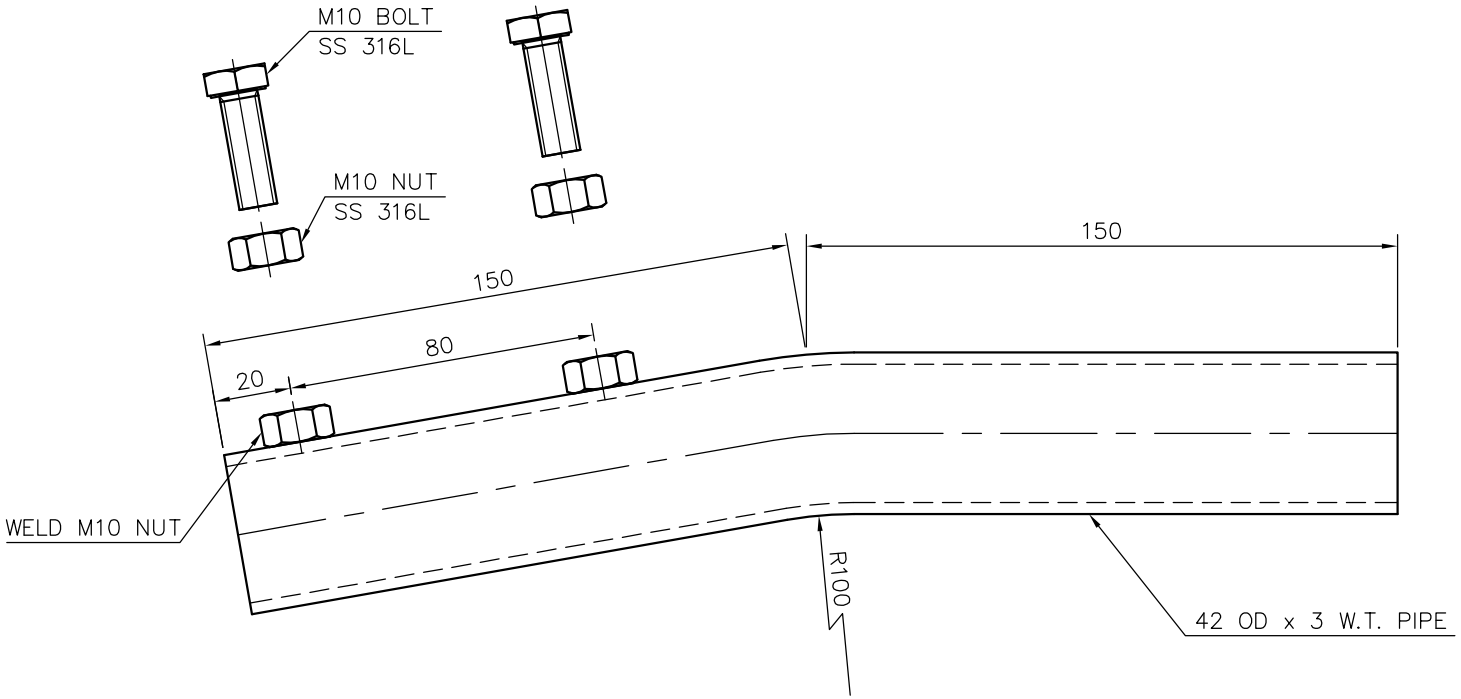
DESIGN APPROVAL

☐ COMPLIANT ☐ NON-COMPLIANT

NAME: _____

SIGN: _____

DATE: _____



NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED PER ASTM A123

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Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE ___

CUSTOMER	OPUS
DESCRIPTION	ADAPTER 34-42

			DRAWN	CQ2	2015-10-30	MATERIAL		ORDER NO
			ENGR	CQ2	2015-10-30	THK(mm)		SCALE N
			CHECKED			WT(kg)		P/N :LE15372-1
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS					

LE15372
QUOTATION #

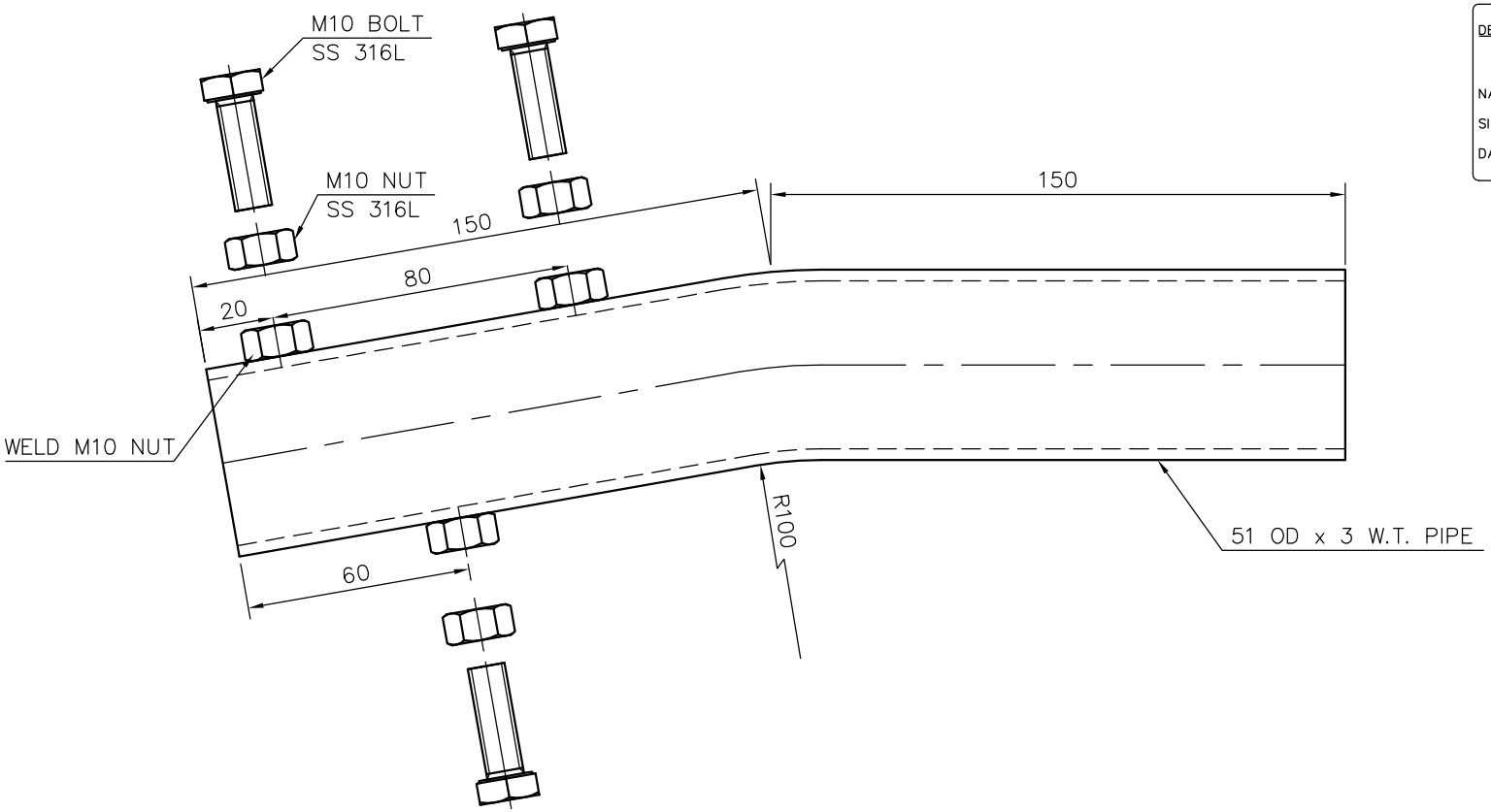
DESIGN APPROVAL

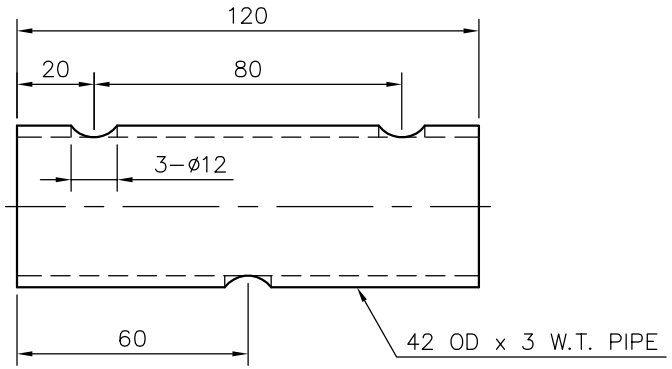
☐ COMPLIANT ☐ NON-COMPLIANT

NAME: _____

SIGN: _____

DATE: _____





ADAPTER SLEEVE DETAIL

NOTES:
1. ALL WELDS TO BE SP (STRUCTURAL PURPOSE) GRADE TO AS/NZS 3404.
2. HOT DIP GALVANIZED PER ASTM A123

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valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE ___

CUSTOMER	OPUS
DESCRIPTION	ADAPTER 34/42-51

REV ID.	DATE	REVISION DESCRIPTION

DRAWN	CQ2	2015-11-03	MATERIAL		ORDER NO	
ENGR	CQ2	2015-11-03	THK(mm)		SCALE	N
CHECKED			WT(kg)		P/N :LE15372-3	
SPECIFICATIONS						

Asha Harry

From: [redacted]
Sent: Tuesday, 15 August 2017 10:06 am
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: WCC Adapter Sizes

Okay thanks,
That is what we are pricing.

Rgds

[redacted]

Apologies for succint response, but sent from my mobile.

On 15/08/2017 9:08 AM, "[redacted]" wrote:

> Hi [redacted]
>
> From my discussions with the contractor, the 3 spigot sizes are as you have listed (the variable end of the adapter must slide over these)
>
> I gather from your email, all 3 adapters will be 60mm OD on the end that connects with the luminaire.
>
> Cheers
>
> [redacted]
>
> [redacted]
> Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
> [redacted] | **W** Wellington.govt.nz |
>
>

From: [redacted]
Sent: Tuesday, 15 August 2017 8:33 a.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] WCC Adapter Sizes

Hi [redacted]

Can you please confirm adapter sizes.

I have read Janet's notes from last week and after my conversation with [redacted] I need some clarification

I have so far that there are 3 size spigots on the WCC network:

Ø25OD, Ø34OD & Ø42OD

The NXT lights can take a side entry of any size spigot of between Ø42 and Ø60

So we are pricing up adapters that will fit over the 3 sizes mentioned above, and all will adapt to a Ø60mm OD spigot.

Please confirm correct, and if not - what are the sizing requirements?

Many thanks

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/valmont/products

Asha Harry

From: [redacted]
Sent: Wednesday, 30 August 2017 5:01 pm
To: [redacted]
Cc:
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Spigot Adapters

Hi [redacted]
We have had to make a few design adjustments to allow a 20 x 15 hole through (Cable is 15.2 x 11.4)
This then gets checked with the die makers and casting company.

We are re-pricing and will have something through to you by tomorrow/Monday at the latest.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 30 August 2017 at 16:56, [redacted] wrote:

> Hi [redacted]
>
> Have you figured out the price yet?

Regards,

[redacted]

[redacted]

[redacted]
| Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council |
| [redacted] |

| E [redacted] | W Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 23 August 2017 4:54 p.m.
To: [redacted]
Cc: [redacted]
Subject: RE: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Spigot Adapters

Hi [redacted]

Ø16 hole is fine.

We are slightly concerned that the cable sheath might get damaged in the process of piercing cable though the adapter – do you think the adaptor may require any sleeve on sharp corners to protect the cable?

Thoughts?

Regards,

[redacted]

[redacted]

[redacted]
| Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council |
| [redacted] |

| E [redacted] | W Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 23 August 2017 10:57 a.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Spigot Adapters

Confirm that you would need a Ø16 hole as a minimum, or bigger?

If bigger what Ø would be acceptable?

Rgds

[redacted]

Gess Ltd

[redacted]

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Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 23 August 2017 at 10:53, [redacted] wrote:

Hi [redacted]

I am afraid looking at the 2 Core 2.5 mm^2 NS Cable company's datasheet (from General cable and Olex) would not work with the diameter you are proposing.

Please see below:

General Cable

ENERGY CABLES

Neutral Screen

Copper

2 Core

0.6/1kV

APPLICATION		
Service entrance or consumer mains for underground residential distribution and unenclosed situations where the neutral/earth screen provides protection against the hazards of electric shock. The screen offers the same resistance as a phase conductor and has 60% coverage to facilitate mechanical protection of the phase conductors.	STANDARD	AS/NZS 4961
	VOLTAGE	600/1000V
	CONDUCTOR	Copper
	INSULATION	(2.5 - 16mm²) PVC, V-90 (10 - 50mm²) XLPE, X-90 Red, Blue
	SHEATH	PVC, V-90 Black
	NORMAL OPERATING TEMP	90°C-XLPE 75°C-PVC

TECHNICAL SPECIFICATIONS

ITEM NUMBER	CONDUCTOR		NOMINAL OVERALL DIAMETER	APPROX. MASS	MINIMUM INSTALLED BENDING RADIUS
	mm^2	(No./mm)	Major x Minor mm	kg/km	mm
PVC INSULATED - For Direct Burial (3.2mm sheath radial)*					
17101016	2.5	7/0.67	15.0 x 11.4	270	145
17260016	4	7/0.85	16.8 x 12.3	330	155
17375016	6	7/1.04	18.0 x 12.9	400	160

TWO CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath

Product Sheet No. 080-02 A						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
2.5	0.8	5	24 x 0.53	3.2	15.2 x 11.6	0.28

Regards,

[redacted]

[redacted]

[redacted]
| Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council |
| [redacted] |

| [redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Tuesday, 22 August 2017 7:15 p.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Spigot Adapters

Evening gentleman,

I have pricing ready to go, but have a final query.

What Ø cable will you be using?

We can get Ø11mm through the center - will that work?

Rgds

[redacted]

Gess Ltd

[redacted]

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Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Friday, 1 September 2017 11:17 am
To: [redacted]
Cc: [redacted]
Subject: Quote Q001548 from Gess Ltd - WCC Adjustable Spigots
Attachments: Q001548.pdf

Hi [redacted]
Please find attached your quote for the spigot adapters. Please note the lead times. We have included a testing regime under the PS. We felt this is important as the natural cycles of SLC is 1s, which is a huge amount in a 20/25 year lifespan.

We have put a lot of thought and care into our design and we are confident that the spiots will perform as required. The stainless steel threaded grubscrews may be swopped for galvanised ones if the certifying engineer determines that it is better from a galvanic corrosion perspective.

Please note that we only have a short 10 day quote validity as the aluminium spot pricing is fluctuating quite heavily at present, we can however keep checking the aluminium price and reconfirming every 10 days

If you need any further information or any clarification, please contact me on number or email below.

Rgds

[redacted]

GESS Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

QUOTE

Attention: [redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
31 Aug 2017

Quote Number
Q001548

Job Number

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Adjustable Spigots

PLEASE NOTE:

QUOTE VALIDITY:
Due to the current highly fluctuating price of aluminium, the quote validity has been set at 10 days.

LEAD TIMES:
All lead times quoted are from receipt of signed approved drawings, NOT from order number.

FREIGHT & UNIT PRICE:
Rates are calculated based on the relationship between quantity and volume. Any changes to the qty WILL affect the unit price.

EXCHANGE RATE:
Pricing is based on exchange rate of $US/$NZ = 0.71. Any fluctuation by more than 3% is for customers account.

WARRANTY:
1 year defect liability period from date of final delivery

This quote is issued as per Gess Ltd standard terms and conditions of which a copy is appended hereto.

All Spigot adaptors are made from Aluminium alloy A356.0 (see characteristics below) and Heat Treated (T5).

ALUMINIUM ALLOY A356.0

Alloy A356.0 has greater elongation, higher strength and considerably higher ductility than 356.0. It has these improved mechanical properties because impurities are lower in A356.0 than in 356.0.
Typical applications are airframe castings, machine parts, truck chassis parts, aircraft and missile components, and structural parts requiring high strength.
Castability — All casting characteristics are excellent for this alloy.
Machinability — Alloy A356.0 has good machinability. Abrasiveness can be overcome and high tool wear can be minimized by using sharp, carbide-tipped tools with high rakes and clearances. Moderate to fast speeds are recommended.
Finishing — Electroplated finishes are good. Chemical conversion coatings give good protection, but anodized appearance is only fair. Mechanical finishes on A356.0 are good.
Weldability — All common welding methods are excellent for joining this alloy.
Corrosion Resistance — This alloy has good resistance to most forms of corrosion.

HEAT Treatment T5:

T5 — Artificially age. This type of heat treatment is done at a comparatively low temperature and serves to eliminate growth of thermal cycle. It also is used to stabilize castings dimensionally (improving mechanical properties somewhat), to improve machinability and to relieve stress.

Description	Quantity	Rate	Amount
Cast Aluminium Spigot Adapter - Ø25 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 26mm & 6 x M10	3,000.00	[redacted]	[redacted]

Description	Quantity	Rate	Amount
grubscrews connecting to Ø60OD spigot x 200mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.			
Cast Aluminium Spigot Adapter - Ø34 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 36mm & 6 x M10 grubscrews connecting to Ø60OD spigot x 120mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.	6,000.00	[redacted]	[redacted]
Cast Aluminium Spigot Adapter - Ø42 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 44mm & 6 x M10 grubscrews connecting to Ø60OD spigot x 120mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.	6,000.00	[redacted]	[redacted]
Freight and Lead time Single delivery freight to your yard, Wellington . Unloading purchasers care. Client welcome to collect. Please NOTE: 1. A HIAB delivery is available but at additional cost, please inquire should you require this. Hiab bookings to be made 5 days in advance of the delivery. 2. A maximum of 1 hour unload time has been allowed for - from arrival of truck on site to departure. 3. Any additional hours or part hours will be billed at $165.00 + GST, at full hourly rates, not on a pro-rata basis.. 4. Assumption is made that there is free unencumbered access with turning space AND that the ride-on surface is suitable for a fully loaded truck. Manufacturing lead time is 12-14 weeks (poles) from receipt of confirmation of all details and/or order number. Any changes made whilst in production may incur additional cost(s) and/or extend the lead time. Mould - 1 week Casting - 3 weeks Heat treatment - 2 weeks Powdercoating if required - 2 weeks Check and Pack - 1 week Shipping 3/4 weeks Please see Testing Lead time under Options.	1.00	[redacted]	[redacted]

Subtotal	[redacted]
GST	[redacted]
Total	[redacted]

Options	Quantity	Rate	Amount
Optional Powder Coating Powder coat spigots . Colour: TBC. NOTE: Pricing is based on a standard colour range. Any non-standard or metallic paint colour will result in a price premium. This option will also add two weeks to the lead time.	15,000.00	[redacted]	[redacted]

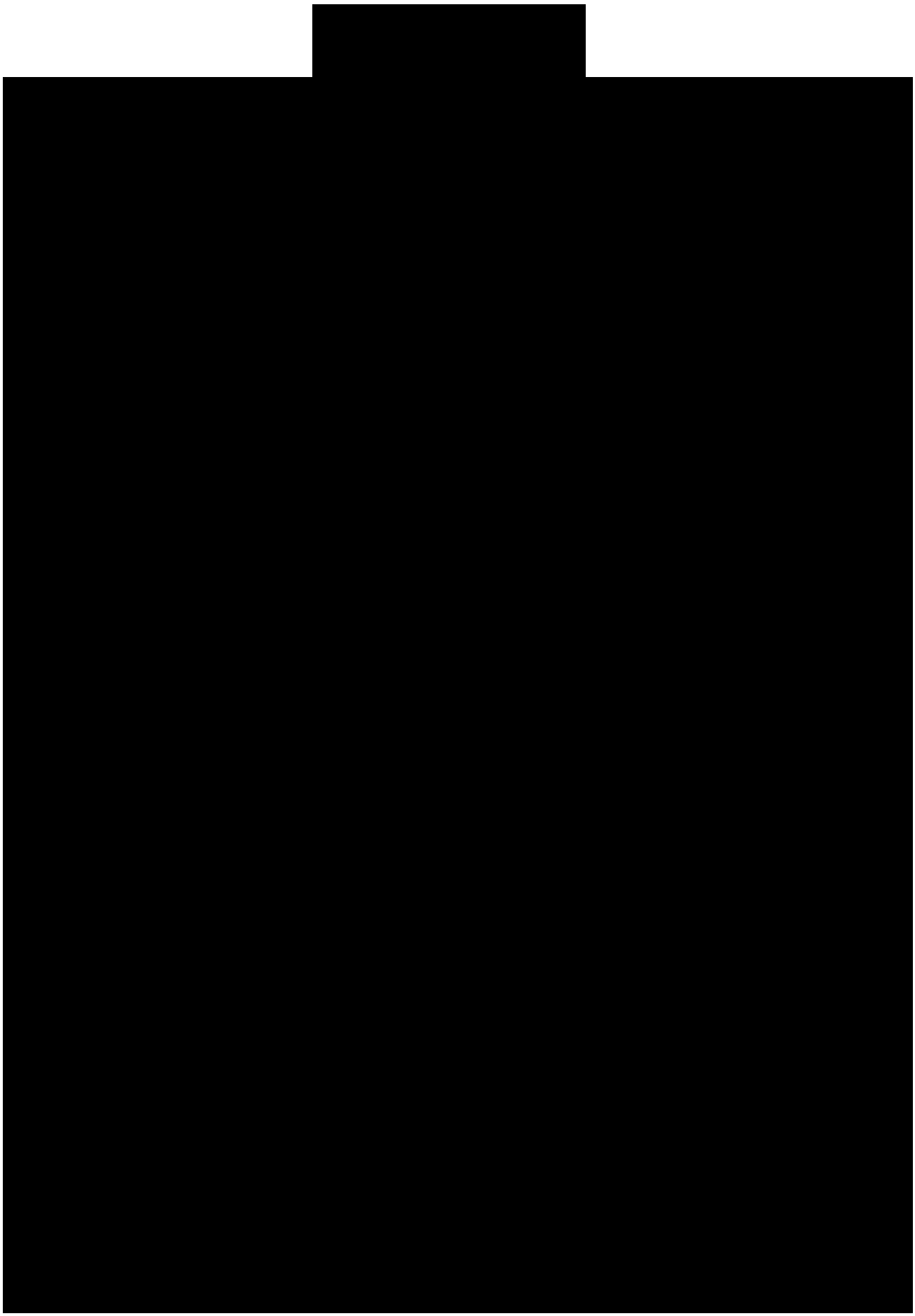
Options	Quantity	Rate	Amount
Optional Producer Statement Optional Producer statement by ACH Consulting. This includes certifying the adapters based on load testing - “Prototype Testing” covered by Section 17 of NZS3404 and potentially some fatigue testing. ACH report will also include a durability statement worded as comments but not a guarantee. Please note that the testing regime will increase the lead time between 2-3 weeks.	1.00	[redacted]	[redacted]

Valid To: 9 Sep 2017

The quote is prepared for the supply of goods named herein, and subject to Gess Ltd standard Terms and Conditions (Copy Appended)

To accept this quote, please sign below and return:

Sign: _____



Asha Harry

From: [redacted]
Sent: Tuesday, 12 September 2017 5:48 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Re: WCC Adjustable Spigots

Thanks,
I will forward this to Valmont.

You don't use the grub-screw to adjust 5º - most you would adjust is +2.5º or -2.5º

i.e if you spigot was at +17º and you needed the luminaire at 0º, you would set the spigot adapter down -15º and then adjust the other -2º by adjusting your top front grubscrew to create your small angle needed together with the opposite bottom screws. The others can then be tightened. A lot of poles are not perfectly perpendicular (And would have been installed within the specified 1 to 2 degrees., but quite a few would have moved over time as well).

Majority of the much older of older spigots were made at a few common angles - 25, 20, 17, 15, 12 &10 and the modern ones are now generally all 5º. Majority will cope with the 5º, only the old 17º will possibly need additional adjustment. In the event that you hit an odd size - say 23º, same principle applied - ramp the spigot down to -25º and adjust the grubscrews to achieve the other 2º

The contractors can either do a workshop set-up test/measure to get the feel, or within a few lights would have the technique sorted.

Rgds

[redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

print, or copy any part of this message if you are not the intended recipient. No confidentiality or privilege is waived or lost by any such mis-transmission or error.

On 12 September 2017 at 16:53, [redacted] wrote:

Hi [redacted]

Please check the attached datasheet of the cable that we intend to use – This is the minimum size as per the regulations and also agreed with electricity company.

Could you elaborate how the 5º increments can be done by adjusting the Grub-screws?

Regards,

[redacted]

[redacted]

Project Engineer Street Lighting | Transport and Infrastructure | Wellington City Council

[redacted] | W Wellington.govt.nz

From: [redacted]
Sent: Tuesday, 12 September 2017 2:17 p.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: WCC Adjustable Spigots

Hi [redacted]

We have not forgotten you (and a weekend in-between!)

Just an update:

We have now finalized all the tests that will be required by the structural engineers, both load and fatigue tests.

This has gone back to Valmont and they are working through all the requirements and which of their test labs will deal with it.

Valmont modeling suggests that there may still be difficulty in passing through the cable, so are investigating a few options.

Valmont are also producing a mock-up and will check that the cables will pass through, if not easily - without too much of a problem.

If this proves to be awkward, they may want to increase the size of the knuckle as well.

(Unless you have a smaller size cable you would be happy to use for the lights? If so please send us some data)

In terms of the wheel increments - they will remain at 5º to allow for bigger/stronger teeth.

Experience has shown that if you go too small:

1. The teeth become difficult to cast in this size,
2. Become ineffective at locking properly and are more susceptible to damage.

FYI - the minor adjustment required between the 5º increments can be done by adjusting the Grub-screws.

I trust that this all meets your approval and hope to revert with confirmations on everything by end of the week.

Everyone is conscious of what is at stake, and so getting this done properly - right from the start.

Rgds

[redacted]

Gess Ltd

[redacted]

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On 8 September 2017 at 09:37, [redacted] wrote:

Hi [redacted]

I left a message on your voicemail earlier today.

I was very impressed with your knuckle solution, and am working hard to tick all the boxes in order to place an order for it.

Out of interest what are the adjustment steps of the graduated centre piece? They look to be around 2 degrees.

I have contacted our 4 suppliers and 3 of them (so far) are more than happy to have the Council supply the adapters. The 4th has no issue personally but needs to consult with his business partner. I expect his final response to come through later today.

We have further considered the number of adapters for each of the 3 sizes. We have no records to guide us. We think it will be safer to order more of the larger sizes as the larger ones could be locally sleeved down more easily the smaller ones sleeved up (if needed). Our contractor advises that the bulk of the outreach arms would be 42mm.

So on this basis, our best estimate of numbers for each size would be:

25mm – 2000

34mm – 5000

42mm - 8000

Will this materially change the price?

Please give me a call when you get the chance.

Cheers

[redacted]

[redacted]

Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council

[redacted]

Asha Harry

From: [redacted]
Sent: Friday, 15 September 2017 9:46 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] WCC Adjustable Spigots (External E-Mail)

Hi [redacted],
There is not a lot we can do around the time frames.
The only way we can speed it up is to forgo the testing, but I do not think that is an option.
We must get this right and ensure that we have put everything through a rigorous approval/testing process.

I can ask ACH Consulting, Metlab and Valmont next week what would be the tightest time frames that can be delivered on, and revert.

In terms of the invoicing,
We envisage some tooling invoice once samples are ready - will be around 3-4 weeks after order - at this stage It will be no more [redacted]
The certification and testing by ACH & Metlab will follow within 2 weeks the same time and will be in the order of [redacted]

That is my best estimate at this stage.

Now that we ahve your approval on the new design, we will forward an updated quote next week.
This will have more accurate numbers in it and I will be able to give you a more accurate $value and timeframe.
Everything will depend on when we kick off with the order number.

Rgds & hope you enjoy your weekend.

[redacted]

Gess Ltd
[redacted]

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On 15 September 2017 at 13:09, [redacted] wrote:

Hi [redacted]

Your changes to the current design are all excellent improvements and worth doing.

I am concerned about the tight timeframe. 15 weeks puts us into January and that is on the very limit for timely completion. I was hoping to get some luminaires air freighted early December to our installers for them to play with and iron out any install problems, including any associated with the adapter.

I will get a sample of the cable to you next week. [redacted]

Let me know how much you would be seeking for tooling and certification, and when you would be likely to invoice it.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Friday, 15 September 2017 12:03 p.m.

To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] WCC Adjustable Spigots (External E-Mail)

Hi [redacted]

Please see attached for your perusal and comment.

As you are aware we picked up on the cable data sheet that was sent through a few days ago - had a minimum allowable radius of 50mm for the cable.

If we can go smaller (as often happens in practice), please let us know.

In order to facilitate this radius we have had to increase the knuckle size.

The one positive out of this larger size is that we are able to go to 3º increments.

As can be seen in 9.png the spigot inside the adapter can allow for another 2º increment. This will cover off any angles that you need to get to 0º

Furthermore, we have, together with the structural engineer have decided to do all lab testing (load and dynamic) here in Auckland at Material Testing Laboratories (Metlab)

Once we have your input, and any changes requested/required, we will update the quote.

An envisioned process as below:

- WCC to courier some Nexans cabling that will be used
- Valmont will make some tooling and make the first sample
- Test samples with supplied cable to ensure it passes through with no issues.
- Courier sample to WCC for approval
- Any comments/input from WCC incorporated until WCC satisfied
- Once sample approved - production can commence
- First samples sent to Auckland for Testing
- After approval and testing pass - full production will commence.

Please note that in terms of lead time, this will be a fairly long process, particularly if there is any design changes.

We are looking at lead times as follows:

- 4 weeks for sample production
- 4 weeks for sample approvals and testing
- 4 weeks for production
- 3 weeks shipping

The above makes assumption that there are no major design/testing issues.

Please note that we would like to discuss an invoice for tooling, Structural engineers certification and Material Testing Labs once all approved.

I look forward to hearing back from you

[redacted]

Gess Ltd

[redacted]

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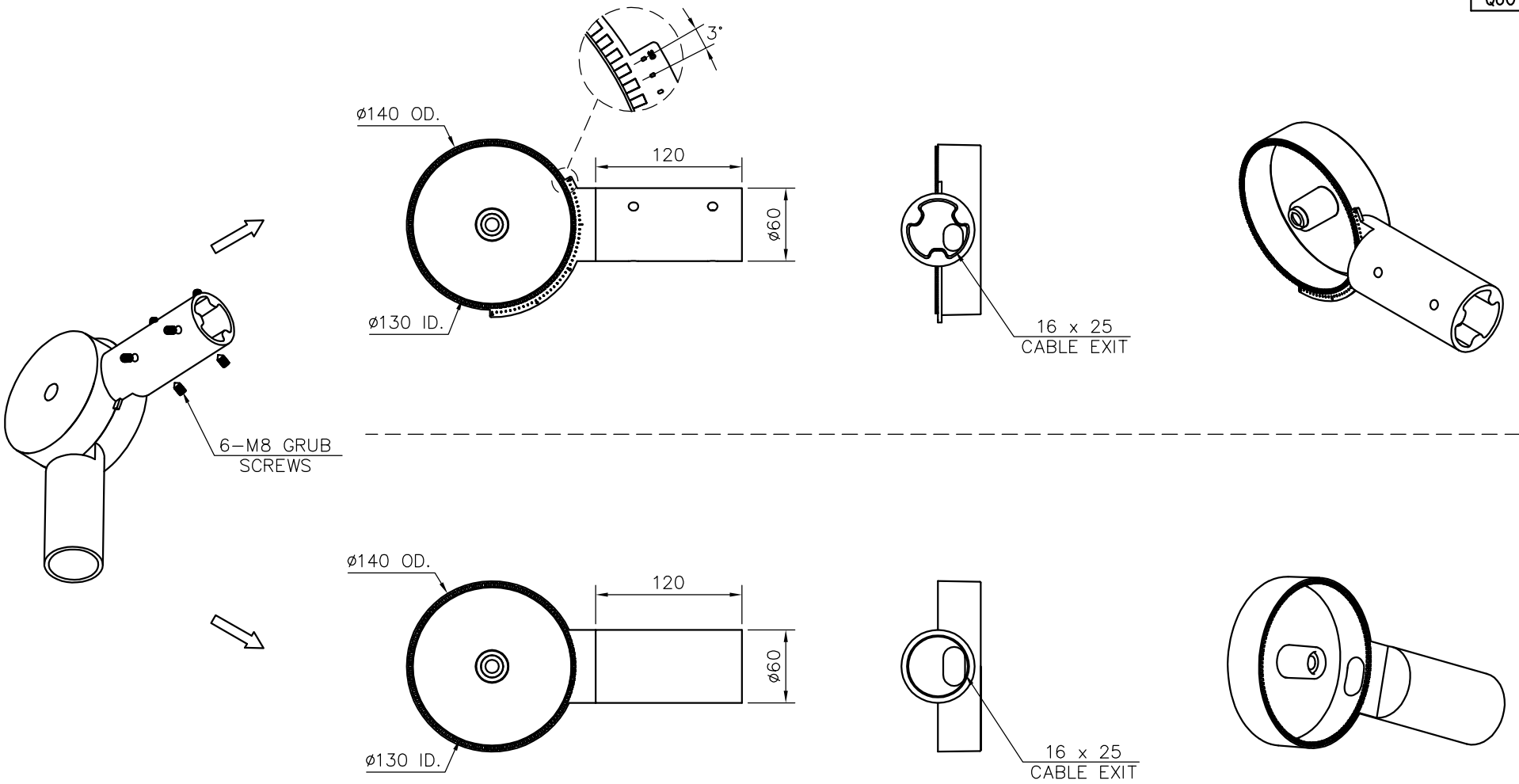
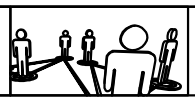
LE17424VB
QUOTATION #



gess
Columns & Streetlights
valmont



Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

5 10 15 20 25 30 35

DWG SIZE A4H	CLASS CODE IA
CUSTOMER	
DESCRIPTION	ADAPTOR 25–60

			DRAWN	CQ2	2017–09–13	MATERIAL		ORDER NO	
			ENGR	CQ2	2017–09–13	THK(mm)		SCALE	N
			CHECKED			WT(kg)		P/N :	
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS						

Asha Harry

From: [redacted]
Sent: Friday, 29 September 2017 8:09 am
To: [redacted]
Cc: [redacted]
Subject: Quote Q001624 from Gess Ltd
Attachments: Q001624.pdf

Hi [redacted],
Please find attached your updated quote based on revised splits and reflecting the increased size of the spigots to accommodate the bending radius of the specified cable. We have also gone through numerous discussions with the two testing laboratories here together with the regimes necessary for the testing thereof., this was unfortunately around a week+ of discussions, meetings and emails. I will send you a simple proposed Gantt chart shortly.

If you need any further information or any clarification, please contact me on number or email below.

Rgds

[redacted]

GESS Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

QUOTE

Attention: [redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
26 Sep 2017

Quote Number
Q001624

Job Number

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Adjustable Spigots

PLEASE NOTE:

QUOTE VALIDITY:
Due to the current highly fluctuating price of aluminium, the quote validity has been set at 10 days.

LEAD TIMES:
All lead times quoted are from receipt of signed approved drawings, NOT from order number.

FREIGHT & UNIT PRICE:
Rates are calculated based on the relationship between quantity and volume. Any changes to the qty WILL affect the unit price.

EXCHANGE RATE:
Pricing is based on exchange rate of $US/$NZ = 0.71. Any fluctuation by more than 3% is for customers account.

WARRANTY:
1 year defect liability period from date of final delivery

This quote is issued as per Gess Ltd standard terms and conditions of which a copy is appended hereto.

All Spigot adaptors are made from Aluminium alloy A356.0 (see characteristics below) and Heat Treated (T5).

ALUMINIUM ALLOY A356.0

Alloy A356.0 has greater elongation, higher strength and considerably higher ductility than 356.0. It has these improved mechanical properties because impurities are lower in A356.0 than in 356.0.
Typical applications are airframe castings, machine parts, truck chassis parts, aircraft and missile components, and structural parts requiring high strength.
Castability — All casting characteristics are excellent for this alloy.
Machinability — Alloy A356.0 has good machinability. Abrasiveness can be overcome and high tool wear can be minimized by using sharp, carbide-tipped tools with high rakes and clearances. Moderate to fast speeds are recommended.
Finishing — Electroplated finishes are good. Chemical conversion coatings give good protection, but anodized appearance is only fair. Mechanical finishes on A356.0 are good.
Weldability — All common welding methods are excellent for joining this alloy.
Corrosion Resistance — This alloy has good resistance to most forms of corrosion.

HEAT Treatment T5:

T5 — Artificially age. This type of heat treatment is done at a comparatively low temperature and serves to eliminate growth of thermal cycle. It also is used to stabilize castings dimensionally (improving mechanical properties somewhat), to improve machinability and to relieve stress.

Description	Quantity	Rate	Amount
Cast Aluminium Spigot Adapter - Ø25 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 26mm & 6 x M10	2,000.00	[redacted]	[redacted]

Description	Quantity	Rate	Amount
grubscrews connecting to Ø60OD spigot x 200mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.			
Cast Aluminium Spigot Adapter - Ø34 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 36mm & 6 x M10 grubscrews connecting to Ø60OD spigot x 120mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.	5,000.00	[redacted]	[redacted]
Cast Aluminium Spigot Adapter - Ø42 to Ø60 Cast Aluminium adapter in Aluminium A356.2 x 4.5mm thick. Heat treated T5. Consisting of spigot 120mm long with ID of 44mm & 6 x M10 grubscrews connecting to Ø60OD spigot x 120mmL on other end. Capable of 120º arc with a graduated center piece. Central M10 stainless steel lock bolt. Capable of fitting 15.2 x 11.6 two core neutral screen cable through.	8,000.00	[redacted]	[redacted]
Freight and Lead time Single delivery freight to your yard, Wellington . Unloading purchasers care. Client welcome to collect. Please NOTE: 1. A HIAB delivery is available but at additional cost, please inquire should you require this. Hiab bookings to be made 5 days in advance of the delivery. 2. A maximum of 1 hour unload time has been allowed for - from arrival of truck on site to departure. 3. Any additional hours or part hours will be billed at $165.00 + GST, at full hourly rates, not on a pro-rata basis.. 4. Assumption is made that there is free unencumbered access with turning space AND that the ride-on surface is suitable for a fully loaded truck. Manufacturing lead time is 12-14 weeks (poles) from receipt of confirmation of all details and/or order number. Any changes made whilst in production may incur additional cost(s) and/or extend the lead time. Mould - 1 week Casting - 3 weeks Heat treatment - 2 weeks Powdercoating if required - 2 weeks Check and Pack - 1 week Shipping 3/4 weeks Please see Testing Lead time under Options.	1.00	[redacted]	[redacted]

Subtotal	[redacted]
GST	[redacted]
Total	[redacted]

Options	Quantity	Rate	Amount
Optional Powder Coating Powder coat spigots . Colour: TBC. NOTE: Pricing is based on a standard colour range. Any non-standard or metallic paint colour will result in a price premium. This option will also add two weeks to the lead time.	15,000.00	[redacted]	[redacted]

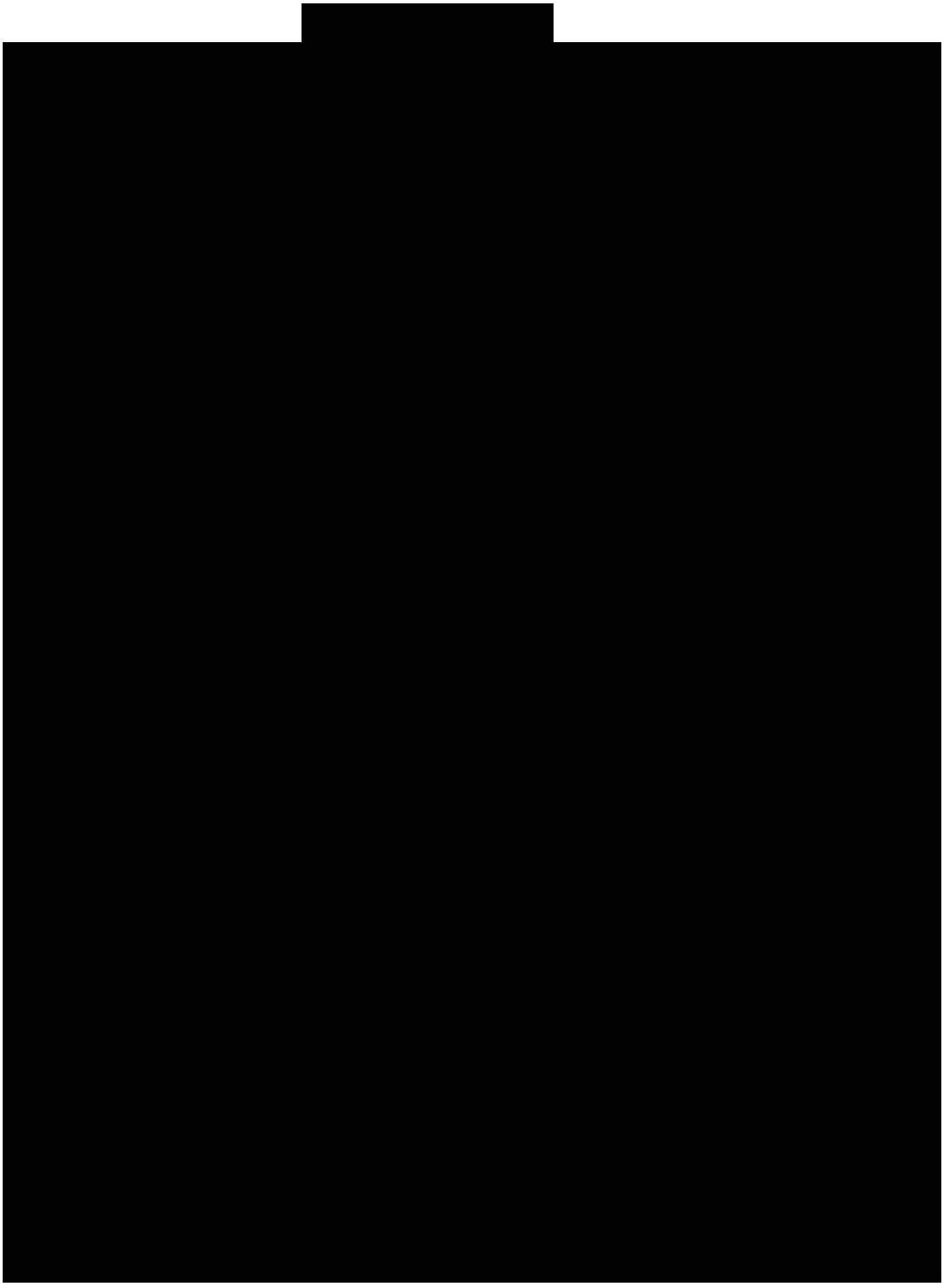
Options	Quantity	Rate	Amount
Optional Producer Statement Optional Producer statement by ACH Consulting. This includes certifying the adapters based on load testing - “Prototype Testing” covered by Section 17 of NZS3404 and potentially some fatigue testing. ACH report will also include a durability statement worded as comments but not a guarantee. Please note that the testing regime will increase the lead time between 2-3 weeks.	1.00	[redacted]	[redacted]

Valid To: 6 Oct 2017

The quote is prepared for the supply of goods named herein, and subject to Gess Ltd standard Terms and Conditions (Copy Appended)

To accept this quote, please sign below and return:

Sign: _____



Asha Harry

From: [redacted]
Sent: Wednesday, 18 October 2017 8:31 am
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Fwd: WCC Spigots (External E-Mail)
Attachments: adapters 25 to 60_2017092.jpg; adapters 25 to 60_2017092-2.jpg; adapters 25 to 60_2017092-3.jpg

Hi [redacted]
After the cancellation of the small adapter - FYI & below, looks like that's where Valmont started, but will now move on to the next size.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

---------- Forwarded message ----------
From: [redacted]
Date: 17 October 2017 at 20:34
Subject: RE: WCC Spigots (External E-Mail)
To: [redacted]
Cc: [redacted]

We just finished the drawing for 25mm adapters and planned to submit it today but will hold it since customer no longer need it. Attached is some cable through sketches for 25mm size for your reference.

It was planned to finish 25mm adapters first for customer's review before we prepare the drawings for other two sizes. Now we'll work on the design for 34-60 and 42-60 and should be ready within this week.

Regards,

[redacted]

valmont

International Business Department | Valmont Industries (China) Ltd [redacted]

From: [redacted]
Sent: Tuesday, October 17, 2017 3:38 AM
To: [redacted]
Cc: [redacted]
Subject: WCC Spigots (External E-Mail)

DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Have just taken a call from Wellington City Council.

They have been doing lots of measurements on the poles. They have found that there are very few poles with 25mm spigot.

They want to can the 25mm adapters (i.e no 25mm to 60mm), and increase the qty of the two other sizes.

So they only want the two bigger sizes, but the quantities can be increased by 1000 each.

Please let me know any implications.

Rgds

[redacted]

Gess Ltd

[redacted]

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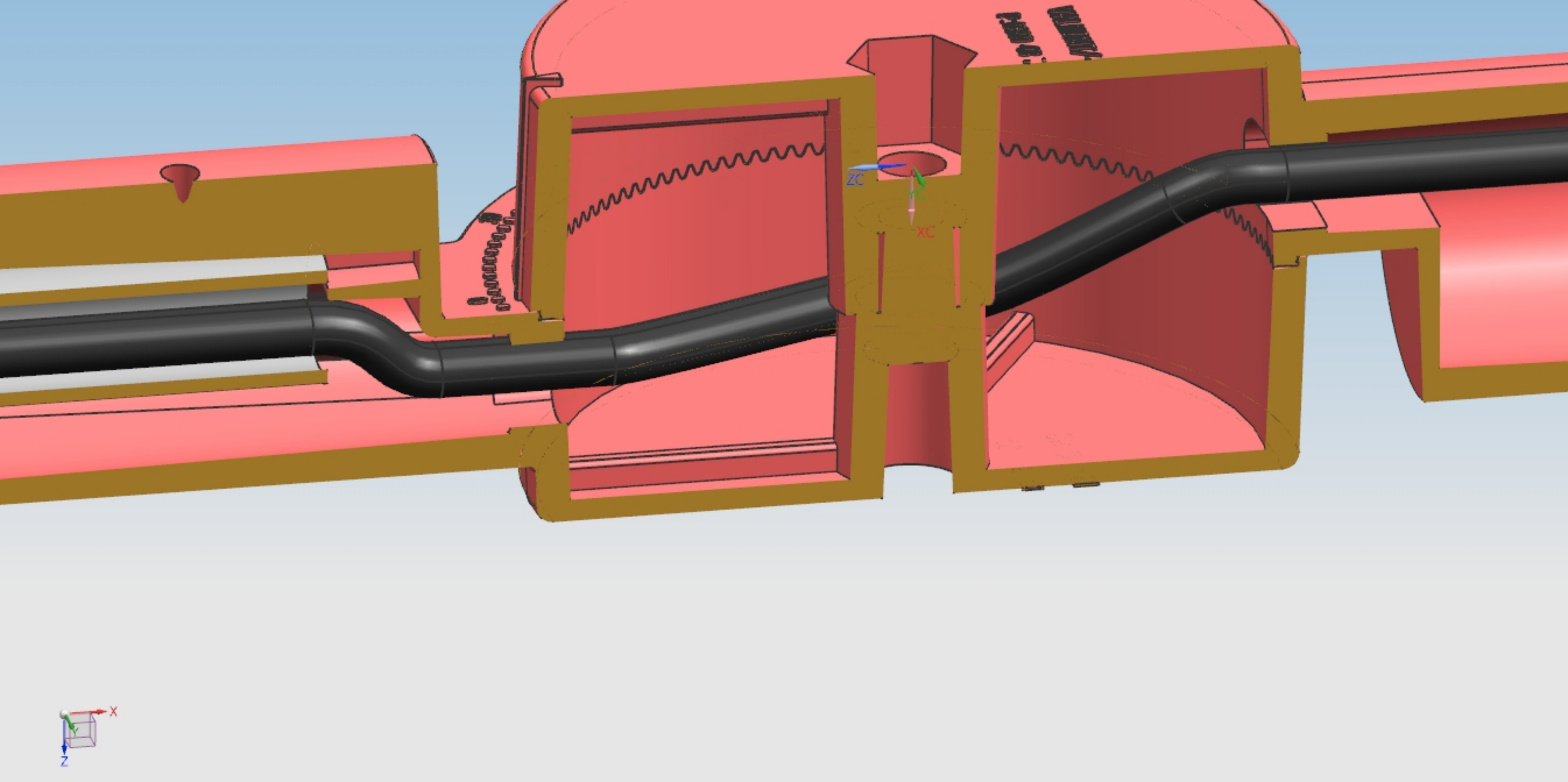
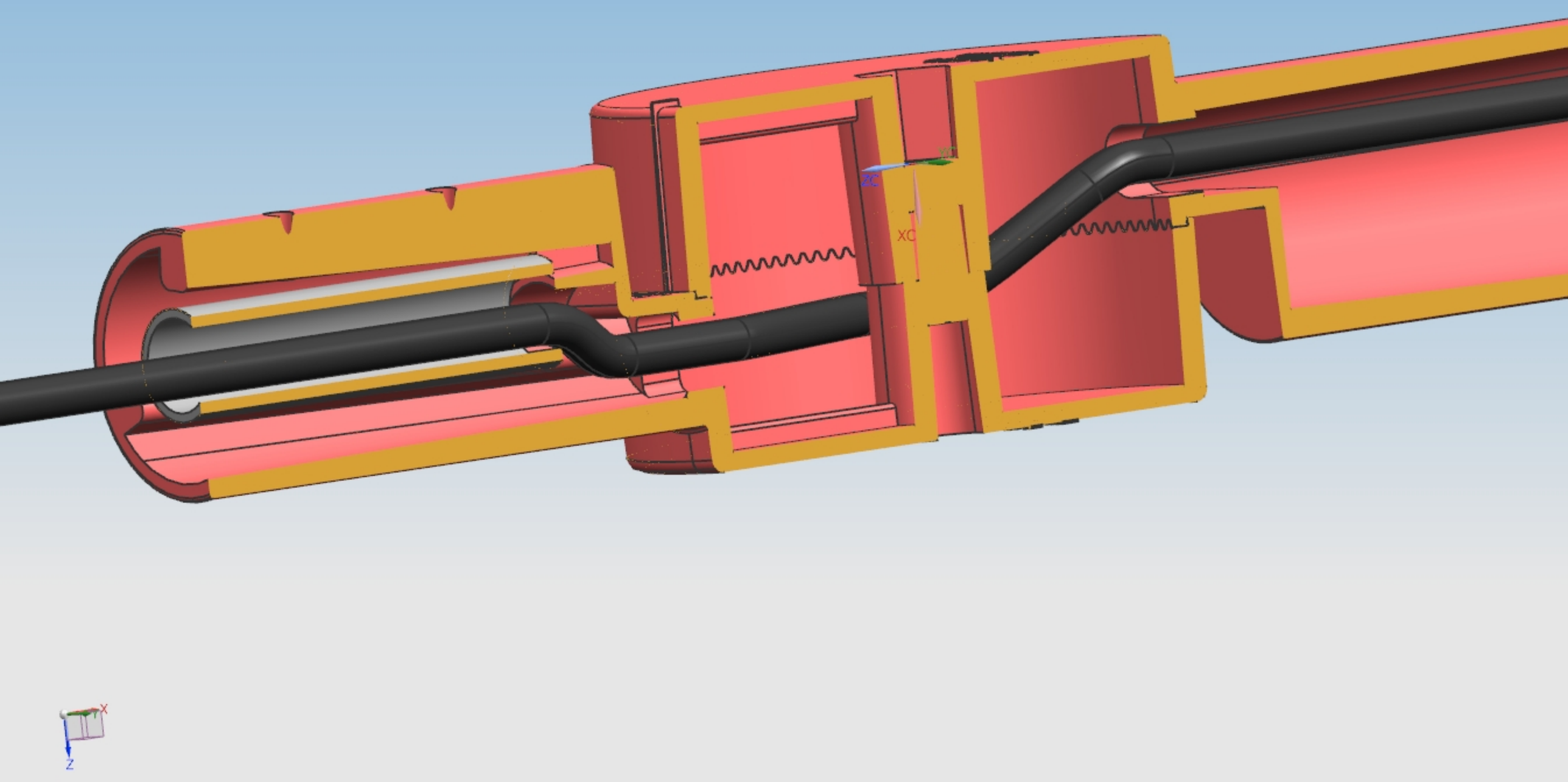
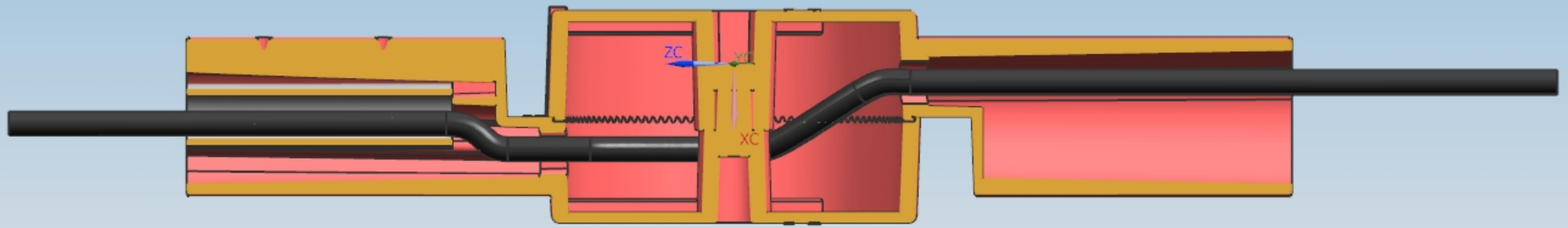
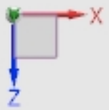
Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions


ZC
YC
XC
X
Z


YC
ZC
XC
X
Z


ZC
YC
XC


X
Z

Asha Harry

From: [redacted]
Sent: Friday, 20 October 2017 7:15 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Drawings for Approval - WCC Spigot Adapters
Attachments: LE17424VC adapters 42 to 60 adjustments Dwg.pdf; LE17424VC adapters 34 to 60 adjustments Dwg.pdf

Hi [redacted]
Please find attached drawings for approval.
Please approve by signing and email back to me.

Rgds

[redacted]

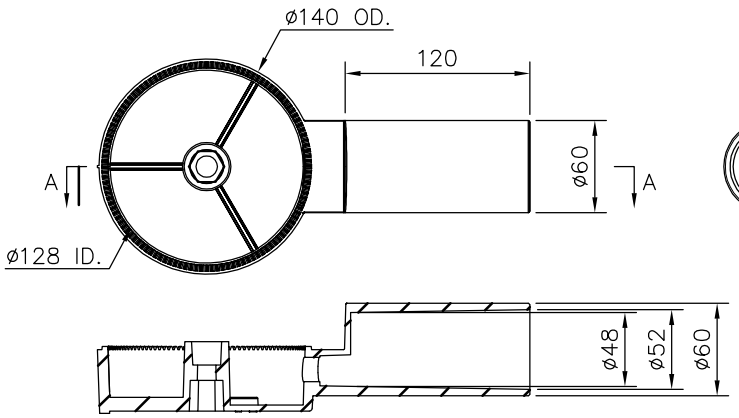
Gess Ltd

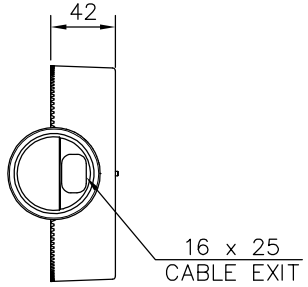
[redacted]

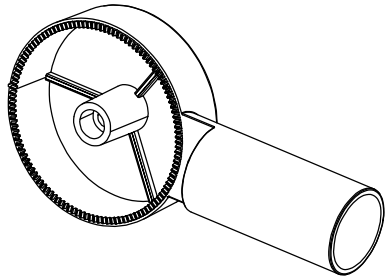
Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

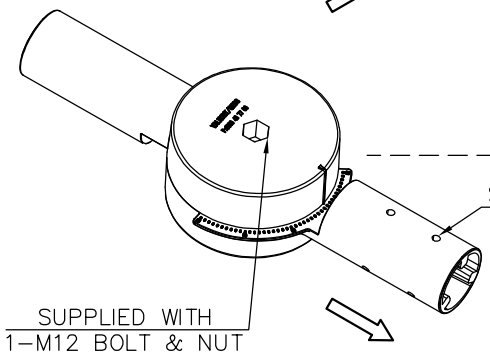
LE17424VC
QUOTATION #

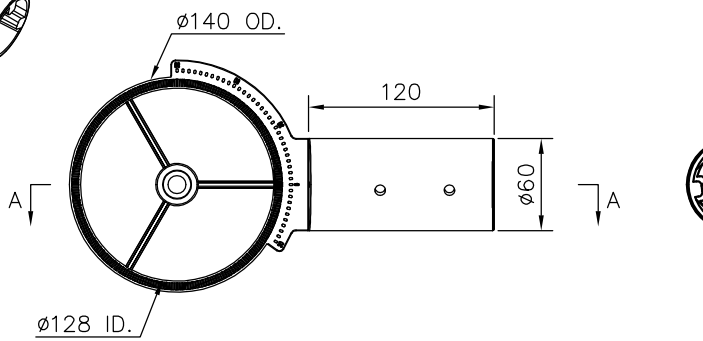


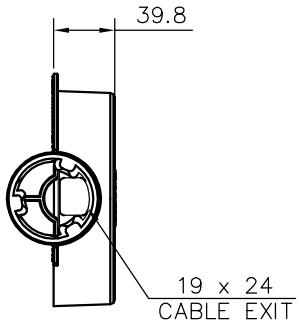


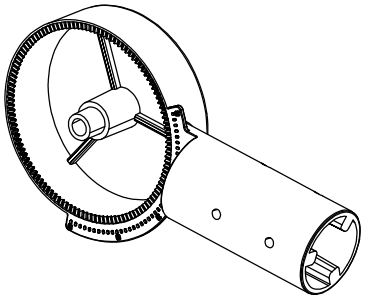


A–A









A–A

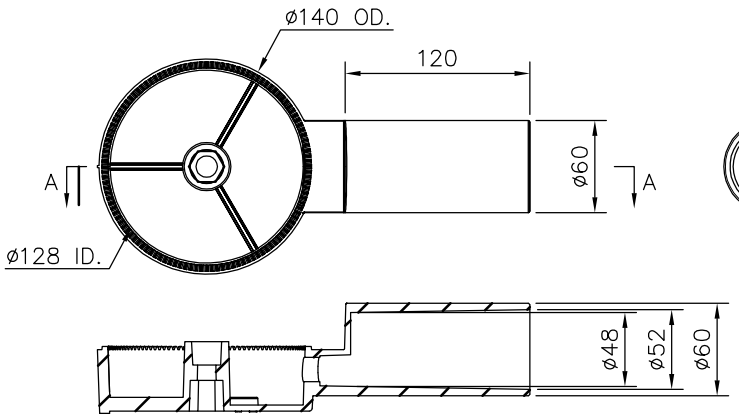
gess
Columns & Streetlights
valmont
Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

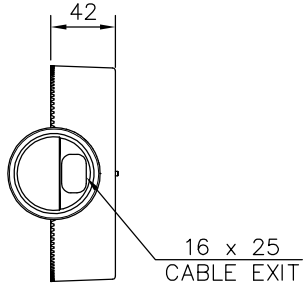
DWG SIZE A4H CLASS CODE IA

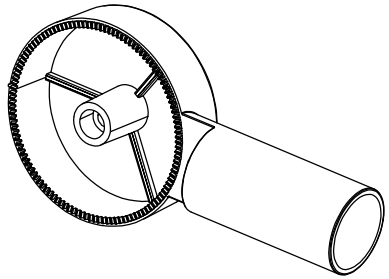
CUSTOMER	
DESCRIPTION	ADAPTOR 34–60

			DRAWN	CQ2 2017-10-20	MATERIAL		ORDER NO	
			ENGR	CQ2 2017-10-20	THK(mm)		SCALE	N
			CHECKED		WT(kg)		P/N :	
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS					

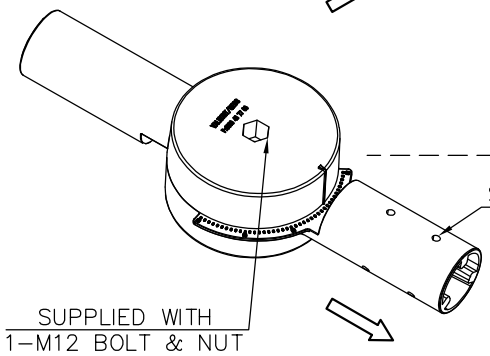
LE17424VC
QUOTATION #

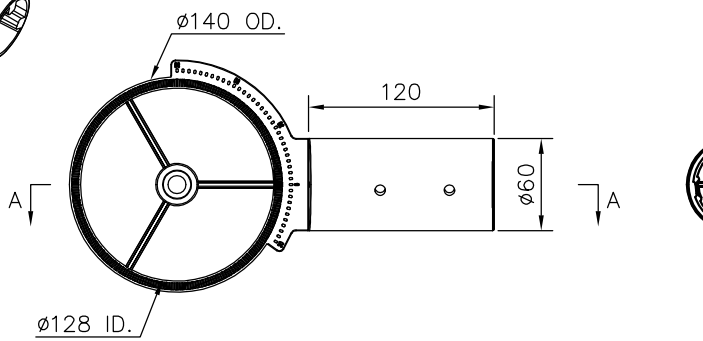


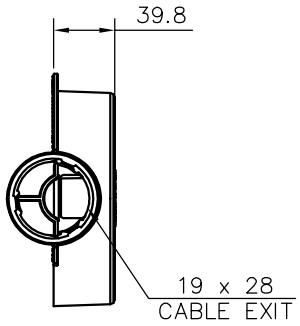


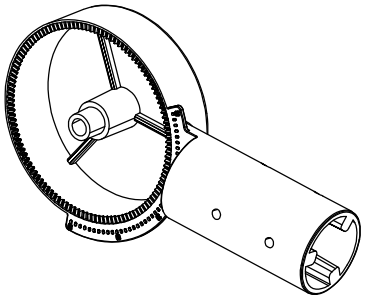


A–A









A–A

gess
Columns & Streetlights
valmont
Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE IA

CUSTOMER	
DESCRIPTION	ADAPTOR 42–60

			DRAWN	CQ2	2017–10–20	MATERIAL		ORDER NO	
			ENGR	CQ2	2017–10–20	THK(mm)		SCALE	N
			CHECKED			WT(kg)		P/N :	
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS						

Asha Harry

From: [redacted]
Sent: Tuesday, 24 October 2017 7:35 am
To: [redacted]
Subject: [SPF: Suspicious Sender] RE: [SPF: Suspicious Sender] Drawings for Approval - WCC Spigot Adapters

Thanks [redacted]
Could you please ask [redacted] to sign on your behalf for now. We have to have a client approval signature on the drawing prior to manufacturing commencing.

Rgds

[redacted]

Apologies for succint response, but sent from my mobile.

On 23/10/2017 9:02 PM, [redacted] wrote:

> Hi [redacted]
>
> Drawings look good.
>
> I looked at them over the long weekend and I see the changes to the diameters have been made.
>
> I have a cold at the moment and may not be at work tomorrow. I don't want to hold things up so thought I would send you an email to say as soon as I get to work I will send the signed drawings through.
> (Because I am remotely accessing the Council system, I cannot use my home printer and scanner without doing fancy work-arounds).
>
> Cheers
>
> [redacted]
>
> [redacted]
> T/I Transport Infrastructure | Roading Traffic Ops | Wellington City Council

[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Friday, 20 October 2017 7:15 p.m.
To: [redacted]
Cc: [redacted]

Subject: [SPF: Suspicious Sender] Drawings for Approval - WCC Spigot Adapters

Hi [redacted]

Please find attached drawings for approval.

Please approve by signing and email back to me.

Rgds

[redacted]

Gess Ltd

[redacted]

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Tuesday, 24 October 2017 8:34 am
To: [redacted]
Subject: [SPF: Suspicious Sender] Re: Drawings for Approval - WCC Spigot Adapters

Thanks [redacted]
Just come out of a meeting where we finalized all the testing equipment with automation engineers - so that side is rolling as well.

Rgds

[redacted]

Gess Ltd
[redacted]

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Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 24 October 2017 at 08:10, [redacted] wrote:

> Hi [redacted]
>
> See attached.
>
> Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] W Wellington.govt.nz |

From: [redacted]
Sent: Tuesday, 24 October 2017 7:35 a.m.
To: [redacted]
Subject: [SPF: Suspicious Sender] RE: [SPF: Suspicious Sender] Drawings for Approval - WCC Spigot Adapters

Thanks [redacted]

Could you please ask [redacted] to sign on your behalf for now. We have to have a client approval signature on the drawing prior to manufacturing commencing.

Rgds

[redacted]

Apologies for succint response, but sent from my mobile.

On 23/10/2017 9:02 PM, [redacted] wrote:

Hi [redacted]

Drawings look good.

I looked at them over the long weekend and I see the changes to the diameters have been made.

I have a cold at the moment and may not be at work tomorrow. I don't want to hold things up so thought I would send you an email to say as soon as I get to work I will send the signed drawings through.
[redacted]

Cheers

[redacted]

[redacted]
T/I Transport Infrastructure | Roading Traffic Ops | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Friday, 20 October 2017 7:15 p.m.
To: [redacted]
Cc: [redacted]

Subject: [SPF: Suspicious Sender] Drawings for Approval - WCC Spigot Adapters

Hi [redacted]

Please find attached drawings for approval.

Please approve by signing and email back to me.

Rgds

[redacted]

Gess Ltd

[redacted]

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Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Wednesday, 25 October 2017 1:22 pm
To: [redacted]
Subject: [SPF: Suspicious Sender] Re: Quote Q001660 from Gess Ltd - WCC Spigot Adapters

Sorry,
It is correct, [redacted]
The qty stayed the same, but the unit prices dropped with the movement from the smaller qty spigots to the larger sizes.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 25 October 2017 at 13:13, [redacted] wrote:

> That is weird,
> The total should not have dropped - should have gone up.
>
> I will go check it.
>
> Rgds
>
> [redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 25 October 2017 at 13:10, [redacted] wrote:

Thanks [redacted]

I see the rates are all the same, just that the total value has dropped slightly.

I have signed the quote in relation to the amounts, but please note the previous correspondence regarding warranty and in relation to the Council's terms and conditions on our Purchase Order.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] | W Wellington.govt.nz | |

-----Original Message-----
From: [redacted]
Sent: Wednesday, 25 October 2017 10:08 a.m.
To: [redacted]
Cc: [redacted]

Subject: Quote Q001660 from Gess Ltd - WCC Spigot Adapters

Hi [redacted],
For your records, please find your updated quote reflecting the changes made. Just keeping everything neat and tidy.

If you need any further information or any clarification, please contact me on number or email below.

Rgds

[redacted]

GESS Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Asha Harry

From: [redacted]
Sent: Wednesday, 8 November 2017 3:23 pm
To: [redacted]
Cc:
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Drawings - WCC Spigot Adapters

Hi [redacted],
The other half has internal gussets so to speak, so was always stronger.

We will have a small delay in the arrival of the samples, but not enough to compromise our program.
We are also have all testing set up to try to complete within 10 days, so should have that time made up there +

In terms of contractors, we can discuss how WCC wishes to distribute the product.
My preference is that WCC accepts and signs for the consignment and then distributes to their installers OR at least has a WCC rep sign off and oversee the collection of the product.
We can deliver to a central location that suits all and have a Gess Representative on hand (including myself or [redacted]

Rgds

[redacted]

Gess Ltd
[redacted]

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On 8 November 2017 at 14:30, [redacted] wrote:

> Thanks [redacted]

I see the gussets are only on the luminaire half of the adapter. The other half has the boss with the gradations so would have been stronger from the outset.

How is the programme looking? The installers have now been appointed and some are rearing to go and to move quickly.

Confirming the addresses of all the installers:

Downer [redacted]

Fulton Hogan [redacted]

Higgins and Power Construction and Lighting [redacted]

City Electricians [redacted]

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted]
W Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 8 November 2017 11:20 a.m.

To: [redacted]
Subject: [SPF: Suspicious Sender] Drawings - WCC Spigot Adapters

Hi Gents,

Please find updated drawings attached..

Engineers have asked that we put in additional gussets for strength.

Rgds

[redacted]

Gess Ltd

[redacted]

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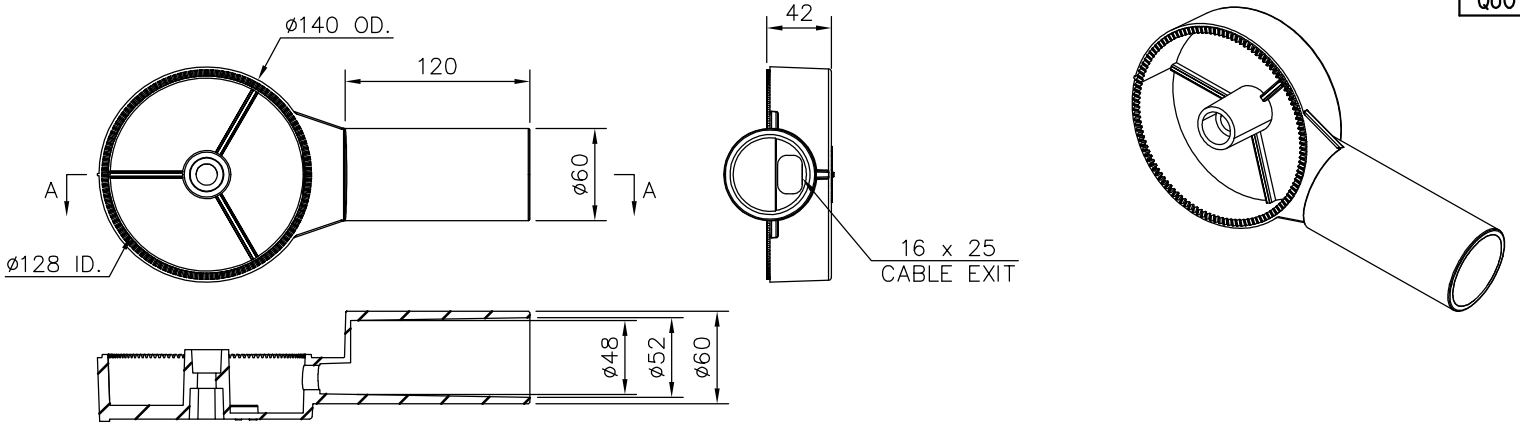
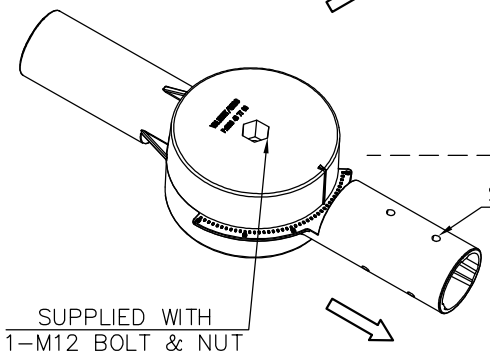
Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

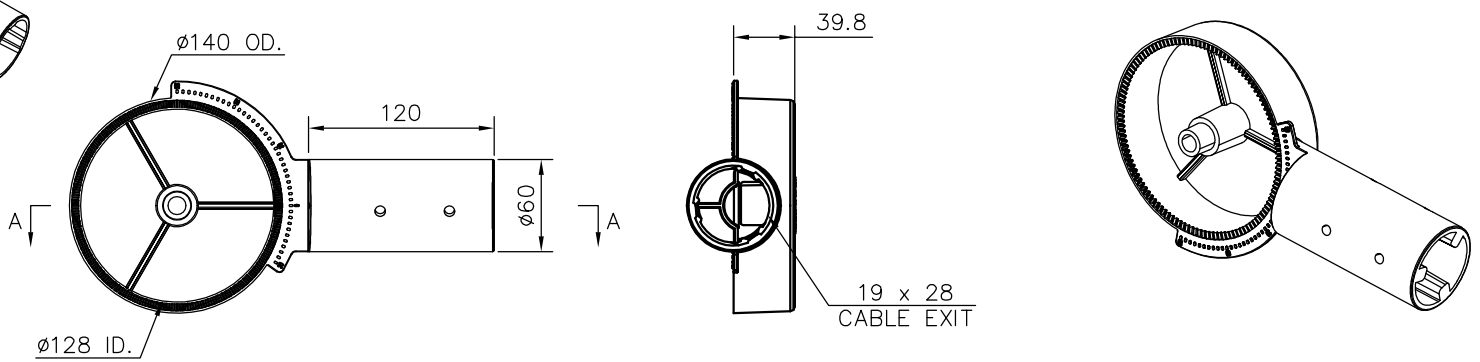
destroy any hard copies of it and notify the sender. You must not, directly or indirectly, use, disclose, distribute, print, or copy any part of this message if you are not the intended recipient. No confidentiality or privilege is waived or lost by any such mis-transmission or error.

LE17424VD
QUOTATION #



A–A





A–A

gess
Columns & Streetlights
valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE IA

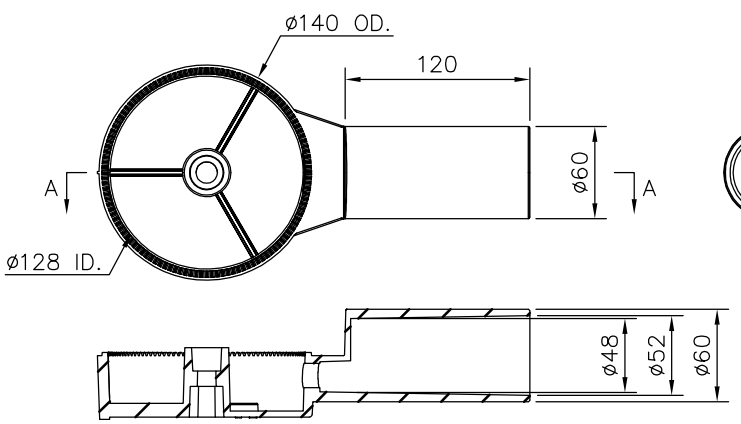
CUSTOMER

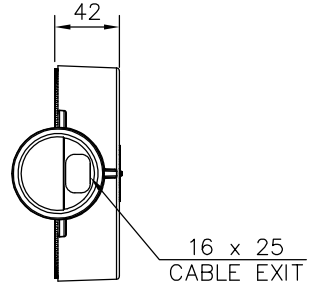
DESCRIPTION ADAPTOR 42–60

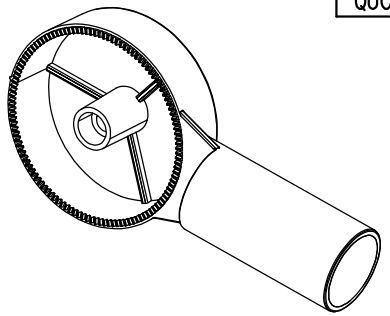
REV ID.	DATE	REVISION DESCRIPTION

DRAWN	CQ2	2017-11-07	MATERIAL		ORDER NO	
ENGR	CQ2	2017-11-07	THK(mm)		SCALE	N
CHECKED			WT(kg)		P/N :	
SPECIFICATIONS						

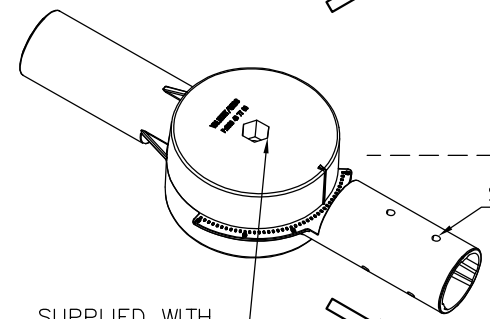
LE17424VD
QUOTATION #

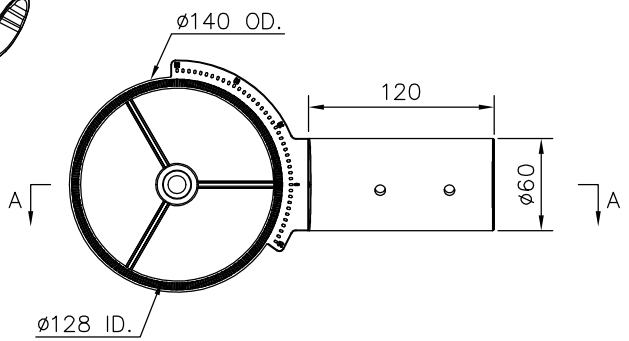


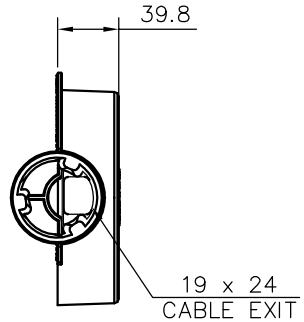


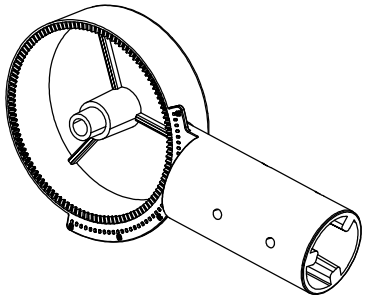


A–A



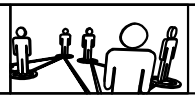






A–A

gess
Columns & Streetlights
valmont



Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

5 10 15 20 25 30 35

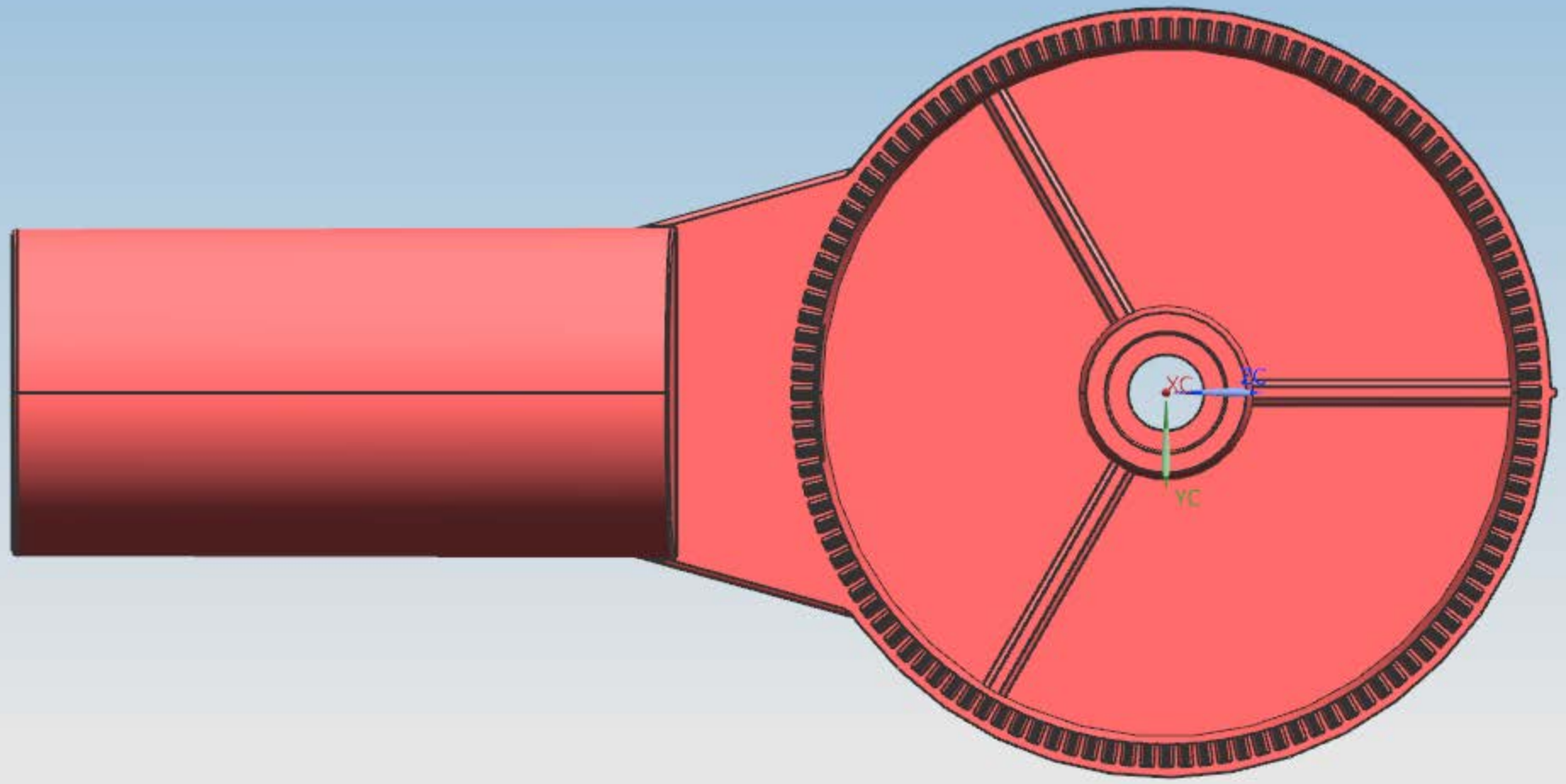
DWG SIZE A4H CLASS CODE IA

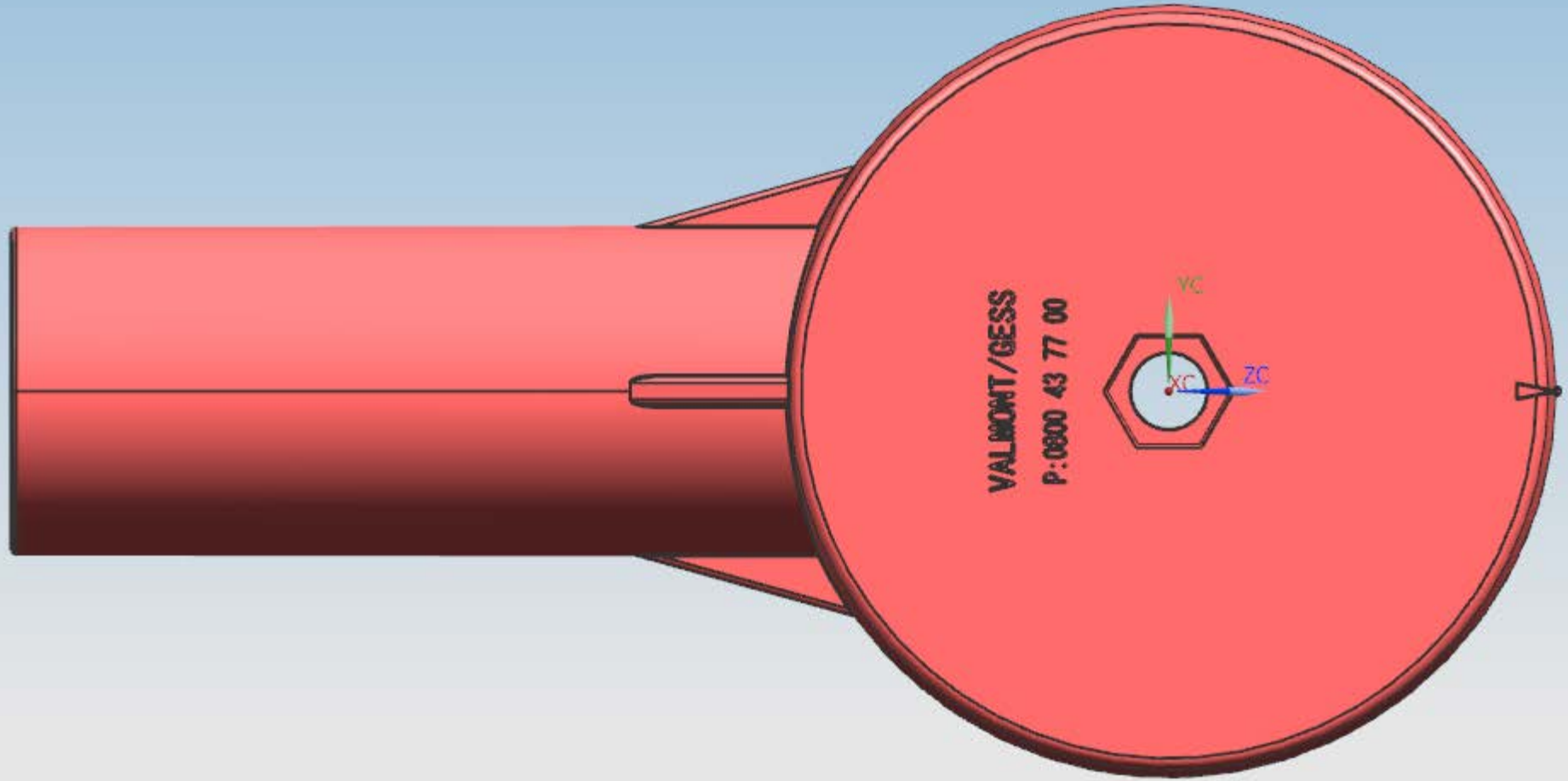
CUSTOMER

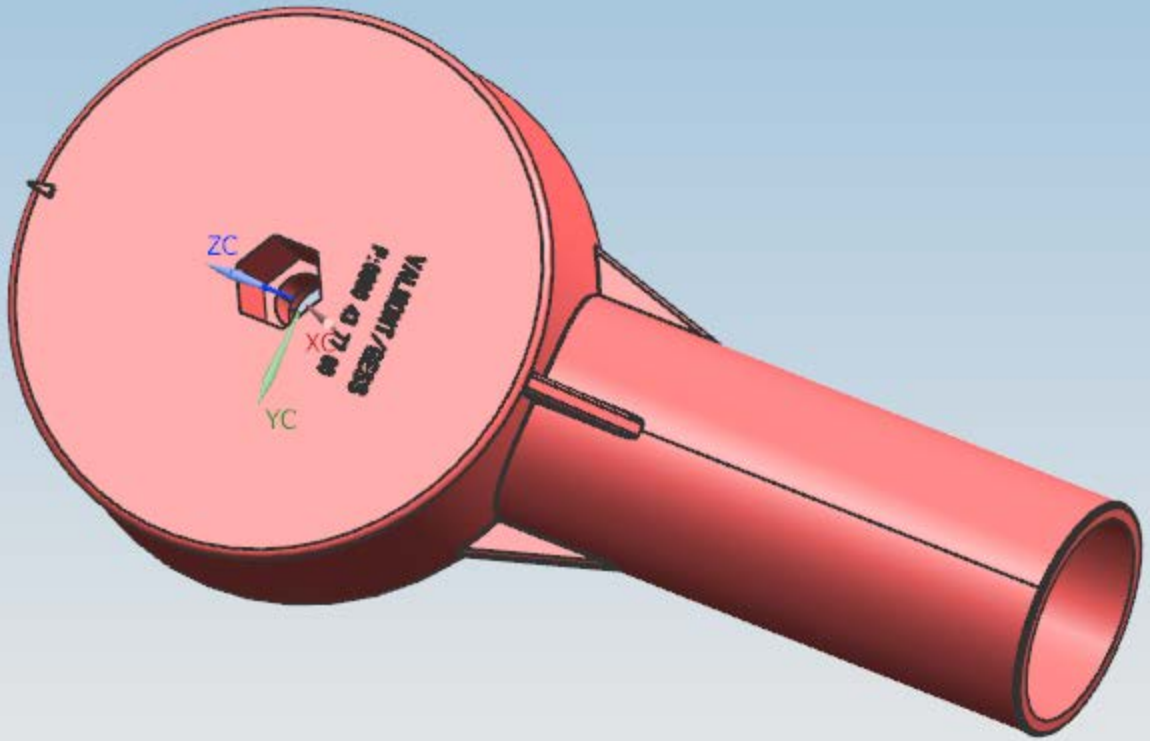
DESCRIPTION ADAPTOR 34–60

REV ID.	DATE	REVISION DESCRIPTION

DRAWN	CQ2	2017–11–07	MATERIAL		ORDER NO
ENGR	CQ2	2017–11–07	THK(mm)		SCALE N
CHECKED			WT(kg)		
SPECIFICATIONS					P/N :


XC
ZC
YC


VALMONT/GESS
P:0800 43 77 00
YC
XC
ZC


ZC
XC
YC

Asha Harry

From: [redacted]
Sent: Thursday, 9 November 2017 11:39 am
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Drawings - WCC Spigot Adapters

HI [redacted]
They will be as assembled inside boxes, I will confirm from Valmont but probably a volume advantage and also less messy that having 3 different "halves" floating around.
The halves in different boxes has potential to unravel.

We will have a word with our Logistics company that does all our Devanning etc and see if we can distribute from their Warehouse in Wellington.
I think it would be okay. [redacted] can sign for the product there, and we would then distribute to the 4 suppliers as per your requirements.

Will revert.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 9 November 2017 at 08:44, [redacted] > wrote:

> Hi [redacted],

Thinking about the deliveries of the adapters, will the components be assembled, or will they be delivered as individual components (32, 42 and 60mm)?

As the components will need to be dismantled in order for the cable to be threaded through, it probably makes sense to keep them apart.

If the 2 containers are delivered to a central point, I need to be able to divide each of the 3 components into 4 lots; one for each of the installers (ie 3750 of the 60mm ends in each lot etc). Will the components be boxed within the container? This would make it easier for subsequent redistribution.

I have previously discussed with Downer that we may need to use their depot in Porirua as a central distribution point for project components. However I also thought we canvassed with you deliveries of adapters going directly to each of the installers yards – but I may be mixing up supplier conversations.

Downer's depot in Porirua is:

[redacted]

[redacted] will be our representative to inspect deliveries with you.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 8 November 2017 3:23 p.m.
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Drawings - WCC Spigot Adapters

Hi [redacted]

The other half has internal gussets so to speak, so was always stronger.

We will have a small delay in the arrival of the samples, but not enough to compromise our program.

We are also have all testing set up to try to complete within 10 days, so should have that time made up there +

In terms of contractors, we can discuss how WCC wishes to distribute the product.

My preference is that WCC accepts and signs for the consignment and then distributes to their installers OR at least has a WCC rep sign off and oversee the collection of the product.

We can deliver to a central location that suits all and have a Gess Representative on hand (including myself or [redacted]

Rgds

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 8 November 2017 at 14:30, [redacted] wrote:

Thanks [redacted]

I see the gussets are only on the luminaire half of the adapter. The other half has the boss with the gradations so would have been stronger from the outset.

How is the programme looking? The installers have now been appointed and some are rearing to go and to move quickly.

Confirming the addresses of all the installers:

Downer [redacted]

Fulton Hogan [redacted]

Higgins and Power Construction and Lighting [redacted]

City Electricians [redacted]

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 8 November 2017 11:20 a.m.
To: [redacted]
Subject: [SPF: Suspicious Sender] Drawings - WCC Spigot Adapters

Hi Gents,

Please find updated drawings attached..

Engineers have asked that we put in additional gussets for strength.

Rgds

[redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Monday, 20 November 2017 2:45 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Spigot Coatings

Hi [redacted],
Just a heads up.
We are having some discussions with the consulting engineers around the removal of the powder coating.
If you recollect you chose not to have that option to try speed up the delivery time-frame, however it looks like the engineers will want it for the corrosion protection of the aluminium (has copper content) in a coastal environment.

I will keep you in the loop.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess Ltd will be closed from Wednesday 12pm 20 December 2017, and will reopen on Monday 08 January 2017. Thank you for your support throughout the year and have a very Merry Christmas!

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Wednesday, 22 November 2017 1:58 pm
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Aluminium Casting for Spigots
Attachments: image001.png

Hi [redacted]
We need some guidance from you.

There are no standards wrt aluminium spigot adapters in NZ.
Please see attached extract from the latest version of AS/NZS 1158.6 wrt Luminaires (has a slightly different name now) .
This however is in particular reference to Luminaire bodies (which are considerably thinner than the spigot adapters), but will most likely apply in the absence of a specific specification for spigot adapters.

Copper (Cu) increases the fluidity in casting, contributes to strength & fatigue ability of aluminium, however it is also a material with a high rate of corrosion.
Currently the A380 aluminium alloy proposed has a content of 3-4% of Cu.
This exceeds the standards max recommended limit of 1%

If we go for a 1% Cu content, we will have to powder coat as per the standards.
If we stay below the 0.3% content we don't have to coat but we are not sure what result we will get out of our fatigue testing (We might not have any issues whatsoever, but we wont know until testing).

Can you please guide us as to which way you wish to proceed.

Rgds

[redacted]

Gess Ltd
[redacted]

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Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

print, or copy any part of this message if you are not the intended recipient. No confidentiality or privilege is waived or lost by any such mis-transmission or error.

2.3 LUMINAIRE BODY

2.3.1 Material

The material of the luminaire body, if of cast or extruded aluminium alloy without any additional surface protection shall comply with the following:

(a) Cast aluminium alloy shall comply with AS 1874, or an equivalent specified by that Standard, and have a copper content of not greater than 0.3%. Where additional surface protection is applied to the luminaire body, the copper content may exceed 0.3% but shall not exceed 1%. The additional protective treatments shall be applied to all outside surfaces of the luminaire body such that the body so treated performs satisfactorily when tested in accordance with ISO 9227.

(b) Extruded aluminium alloy shall comply with EN 1090-3 or equivalent.

(c) The luminaire body does not include the visor or any non-load-bearing covers. These may be constructed of other materials of proven durability (refer also to Clause 2.4.)

NOTES:

1 It is recommended that in extreme marine and geothermal areas castings should be sealed using an exterior coating. For extruded aluminium alloy, anodizing to at least 25 μm should be used.

2 Refer also to Appendix A for information on the use of materials other than aluminium alloy.

Asha Harry

From: [redacted]
Sent: Wednesday, 29 November 2017 8:52 am
To: [redacted]
Subject: [SPF: Suspicious Sender] Re: [SPF: Suspicious Sender] Spigot drawings - Temp Spigot Adapters

Okay will do,
Yes 5º & we will produce a set of drawings for sign off.
The Ø51 is now Ø50, but we have had no issues with any supplied to market on ID.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess Ltd will be closed from Wednesday 12pm 20 December 2017, and will reopen on Monday 08 January 2017. Thank you for your support throughout the year and have a very Merry Christmas!

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 29 November 2017 at 08:33, [redacted] wrote:

> Hi [redacted]
>
> The drawings do not show an angle. I presume it is 5 degrees as previously discussed. The 3mm wall thickness will give IDs of 36mm and 45mm, which should slip easily over 34mm and 42mm outreach arm spigots respectively

Please proceed with these.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted]
[redacted] W Wellington.govt.nz |

From: [redacted]
Sent: Wednesday, 29 November 2017 8:17 a.m.
To: [redacted]
Subject: [SPF: Suspicious Sender] Spigot drawings - Temp Spigot Adapters

Attached as discussed,

Rgds

[redacted]

Gess Ltd

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Gess Ltd will be closed from Wednesday 12pm 20 December 2017, and will reopen on Monday 08 January 2017. Thank you for your support throughout the year and have a very Merry Christmas!

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Asha Harry

From: [redacted]
Sent: Wednesday, 29 November 2017 10:13 am
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] Re: Quote Q001756 from Gess Ltd - WCC Temporary Spigot Adapters

Okay will do,
[redacted] will Liaise with [redacted]

Rgds

[redacted]

Gess Ltd
[redacted]

Gess Ltd will be closed from Wednesday 12pm 20 December 2017, and will reopen on Monday 08 January 2017. Thank you for your support throughout the year and have a very Merry Christmas!

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 29 November 2017 at 09:58, [redacted] wrote:

> Hi [redacted]
>
> Signed quote attached.
>
> Please keep me posted on delivery dates once you know them definitely. If deliveries are not going directly to the 4 installers yards, [redacted] will need to make the necessary distribution arrangements.
>
> Please use the current purchase order number when invoicing for these and the swivel adapters.
>
> Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] W Wellington.govt.nz | |

-----Original Message-----
From: [redacted]
Sent: Wednesday, 29 November 2017 9:34 a.m.
To: [redacted]
Cc: [redacted]
Subject: Quote Q001756 from Gess Ltd - WCC Temporary Spigot Adapters

Hi [redacted],
Please see attached for your temporary spigot adapters.

If you need any further information or any clarification, please contact me on number or email below.

Rgds

[redacted]

GESS Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Asha Harry

From: [redacted]
Sent: Thursday, 1 February 2018 8:58 am
To: [redacted]
Cc: [redacted]
Subject: [SPF: Suspicious Sender] FW: Delivery of 6 Crates of WCC Adjustable Spigot Adaptors
Attachments: WCC Temporary Spigot Adaptors LCL Shipment Delivery Note 31.01.18.pdf

Hi [redacted],

The 6 crates are at the Mainfreight Wellington Depot ready for delivery to you an could you please sign the Gess Ltd Delivery Note when the product is received and return to me.

Regards

[redacted]

Logistics Co-ordinator

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway extension and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand
http://www.valmont.com/home/products-and-solutions

From: [redacted]
Sent: Wednesday, January 31, 2018 12:00 PM
To: [redacted]
Subject: Delivery of 6 Crates of WCC Adjustable Spigot Adaptors

Hi [redacted]

Please find attached the Delivery Note for 6 Crates of WCC Adjustable Spigot Adaptors which should be delivered by Mainfreight 01 or 02.02.18. I will follow them on the Trace and Trace and advise of any problems.

Regards

[redacted]

Logistics Co-ordinator

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway extension and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand
http://www.valmont.com/home/products-and-solutions

Delivery Note

[redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
31 January 2018

Job Number
J000386

Wellington City Council Order #
P1016167

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Temporary Spigot Adapters Ex LCL Shipment

Items

Description	Quantity
Ø42 - Ø50 Adapter	863.00
Ø34 to Ø42 Adapter	500.00

Shipped in 6 Wooden Crates:

Crate 1 – 270 PCS 42-50mm Spigots

Crate 2 – 179 PCS 42-50mm Spigots

Crate 3 – 207 PCS 42-50mm Spigots

Crate 4 – 207 PCS 42-50mm Spigots

Crate 5 – 270 PCS 34-42mm Spigots

Crate 6 – 230 PCS 34-42mm Spigots

Name: _____

Date: _____/_____/_____

Signature: _____

Asha Harry

From: [redacted]
Sent: Thursday, 1 February 2018 4:43 pm
To: [redacted]
Cc: [redacted]
Subject: Invoice I000701 from Gess Ltd - WCC Temporary Spigot Adapters
Attachments: I000701.pdf

Hi [redacted]
Please find attached your invoice for your temporary steel spigot adapters.

If you need any further information or any clarification, please contact me on number or email below.

Rgds

[redacted]

GESS Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

TAX INVOICE

Attention: [redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
31 Jan 2018

Invoice Number
I000701

GST # 108-554-622

Client Order Number
P1016167

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Temporary Spigot Adapters

Description	Quantity	Rate	Amount
Ø42 - Ø50 Adapter Galvanised Spigot Adapter from Ø50 OD x 3mm pipe complete with 5º bend. complete with 2 x M10 welded nuts and SS lock nuts/bolts. Generally as per approved drawings Price Includes 700 air freighted into Wellington, balance by Sea freight.	1,500.00	[redacted]	[redacted]
Ø34 to Ø42 Adapter Galvanised Spigot Adapter from Ø42 OD x 3mm pipe complete with 5º bend. complete with 2 x M10 welded nuts and SS lock nuts/bolts. Generally as per approved drawings Price Includes 500 air freighted into Wellington, balance by Sea freight.	1,000.00	[redacted]	[redacted]

Subtotal	[redacted]
GST	[redacted]
Total	[redacted]
Less Amount Paid	[redacted]
Amount Due	[redacted]

Due Date: 20 Mar 2018

This is a payment claim under the Construction Contracts Act 2002.

Direct Credit: Gess Ltd - BNZ acc#:02-0404-0198252-000

PAYMENT ADVICE

Gess Ltd
Po Box 204062
Highbrook
2161

Customer	Wellington City Council
Invoice Number	I000701
Amount Due	[redacted]
Due Date	20 Mar 2018
Amount Enclosed	$

Enter the amount you are paying above

Asha Harry

From: [redacted]
Sent: Wednesday, 14 February 2018 12:12 pm
To: [redacted]
Subject: [SPF: Suspicious Sender] Delivery of 1st 40' container of Aluminium Spigots
Attachments: J000366 - 1st 40' Container Ex AKL of Aluminium Spigots.docx

Hi [redacted]

Please find attached the delivery note for 4000 x 34mm to 60mm Aluminium Spigots & 4000 x 42mm to 60mm Aluminium Spigots delivered to Downer NZ Ltd [redacted] 12.02.18. Please and return to all named on this email.

Rregards

[redacted]

Logistics Co-ordinator

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway extension and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand
http://www.valmont.com/home/products-and-solutions

Delivery Note

[redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
14 February 2018

Job Number
J000366

Wellington City Council Order #
P1016167

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Adjustable Spigots

Supplied Ex Valmont Shipping container BEAU4690555

Delivered 12.02.18

Items

Description	Quantity
Cast Aluminium Spigot Adapter - Ø34 to Ø60	4,000.00
Cast Aluminium Spigot Adapter - Ø42 to Ø60	4,000.00

Name: _____

Date: _____/_____/_____

Signature: _____

Asha Harry

From: [redacted]
Sent: Monday, 5 March 2018 1:38 pm
To: [redacted]
Subject: [SPF: Suspicious Sender] PO & Invoices
Attachments: Gess Adapter PO.pdf; I000677.pdf; I000705.pdf

Hi [redacted]
Please see attached.

1. Your PO for [redacted]
2. Progress Invoice (I000677) for testing and Producer Statement - [redacted] (PAID)
3. Final Invoice (I000705) for spigots themselves - [redacted]

Total of the above two invoices = [redacted] ([redacted] less than your PO Value)
The reason for this difference is your change in type and qty required after PO issued (You dropped the Ø25 adapter and increased the qty of the other two types)

There was another invoice generated for the steel spigots using the same PO# (As instructed)
If you need copy of that one let me know.

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

Wellington City Council

PURCHASE ORDER

Absolutely Positively **Wellington** City Council
Me Heke Ki Pōneke

GST number: **53-204-635**

Telephone: +64 4 499 4444
Email: apinvoices@wcc.govt.nz

Gess Ltd
PO Box 204062
Highbrook
Auckland 2161
New Zealand

Attention: [redacted]

Order Nbr: P1016167
Date Issued: 05/10/2017
Vendor Nbr: 19042
Date Required: 08/01/2018
Requisition Nbr: R0040390
Page: 1 of 1

Product Code	*Description*	*Qty*	*Inc Unit Price*	*Inc Amount*
100110	LED Adapters	0 EACH	0.00	[redacted]

Order Total : [redacted]

Email invoice to: apinvoices@wcc.govt.nz
Invoice to: Wellington City Council
PO Box 682
Wellington 6140

Deliver to: Wellington City Council
101 Wakefield Street
Wellington Central
Wellington 6011

Enquiries
Please telephone our call centre on +64 4 499 4444 and ask to speak to the Buyer - [redacted]

Terms
Unless the supply of goods or services is provided under a written agreement with us, acceptance of this purchase order constitutes acceptance of Wellington City Council Trade Terms - see www.wellington.govt.nz

The above Purchase Order Number must appear on all shipments, shipping papers, invoices and correspondence. Over shipments will not be accepted unless authorised by the Buyer prior to shipment

TAX INVOICE

Attention: [redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
28 Feb 2018

Invoice Number
I000705

GST # 108-554-622

Client Order Number
P1016167

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Adjustable Spigots

Description	Quantity	Rate	Amount
Cast Aluminium Spigot Adapter - Ø34 to Ø60 Cast Aluminium adapter in Aluminium A380. As per Approved drawing Adaptor 34-60	6,000.00	[redacted]	[redacted]
Cast Aluminium Spigot Adapter - Ø42 to Ø60 Cast Aluminium adapter in Aluminium A380. As per Approved drawing Adaptor 42-60	9,000.00	[redacted]	[redacted]
Freight and Lead time Container delivery freight to your Downers yard, Wellington . Unloading purchasers care.	1.00	[redacted]	[redacted]

Subtotal	[redacted]
GST	[redacted]
Total	[redacted]
Less Amount Paid	$0.00
Amount Due	[redacted]

Due Date: 20 Mar 2018

This is a payment claim under the Construction Contracts Act 2002.

Direct Credit: Gess Ltd - BNZ acc#:02-0404-0198252-000

PAYMENT ADVICE

Gess Ltd
Po Box 204062
Highbrook
2161

Customer	Wellington City Council
Invoice Number	I000705
Amount Due	[redacted]
Due Date	20 Mar 2018
Amount Enclosed	$

Enter the amount you are paying above

TAX INVOICE

Attention: [redacted]
Wellington City Council
PO Box 2199
Wellington 6140

Date
19 Dec 2017

Invoice Number
I000677

GST # 108-554-622

Client Order Number
P1016167

Gess Ltd
12 Offenhauser Drive
East Tamaki
2013

PO Box 204062
Highbrook
2161

Phone: 0800 437 700

WCC Adjustable Spigots

Description	Quantity	Rate	Amount
Producer Statement & Testing Producer statement/certificate by ACH Consulting. This includes certifying the adapters based on load testing - "Prototype Testing" covered by Section 17 of NZS3404 and will include fatigue testing as well as load testing to destruction. ACH report will also include a durability statement worded as comments but not a guarantee.	1.00	[redacted]	[redacted]

Subtotal	[redacted]
GST	[redacted]
Total	[redacted]
Less Amount Paid	[redacted]
Amount Due	$**0.00**

Due Date: 20 Jan 2018

This is a payment claim under the Construction Contracts Act 2002.

Direct Credit: Gess Ltd - BNZ acc#:02-0404-0198252-000

PAYMENT ADVICE

Gess Ltd
Po Box 204062
Highbrook
2161

Customer	Wellington City Council
Invoice Number	I000677
Amount Due	$0.00
Due Date	20 Jan 2018
Amount Enclosed	$

Enter the amount you are paying above

Asha Harry

From: [redacted]
Sent: Wednesday, 21 March 2018 4:16 pm
To: [redacted]
Subject: [SPF: Suspicious Sender] Fwd: Knuckle Adaptor - Auxilary power outlet
Attachments: 21032018150835.pdf

Hi [redacted] as below and attached,

Rgds

[redacted]

Gess Ltd
[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

---------- Forwarded message ----------
From: [redacted]
Date: 21 March 2018 at 16:12
Subject: RE: Knuckle Adaptor - Auxilary power outlet
To: [redacted]

Hi [redacted]

ONE 6mm DIA hole may be drilled in the zones shown ONLY.

Let me know if you have any further questions.

Kind regards,

_____

[redacted]

Engineer

[redacted]

[redacted]

[redacted]

PO Box 84-287, Westgate 0657
3 Kawakawa Place, Westgate, Auckland 0814 (off Northside Drive)

From: [redacted]
Sent: Wednesday, 21 March 2018 3:48 p.m.
To: [redacted]
Subject: Re: Knuckle Adaptor - Auxilary power outlet

Correct,

Please see attached (part of your PS1)

Rgds

[redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 21 March 2018 at 15:44, [redacted] wrote:

> Hi [redacted]

I am guessing this is the spigot adaptor that you load tested? If this is the case, send through the shop drawings of it and I will mark up where the best place to position the hole is.

Kind regards,

[redacted]

Engineer

[redacted]

[redacted]

[redacted]

ACH
CONSULTING ENGINEERS

PO Box 84-287, Westgate 0657
3 Kawakawa Place, Westgate, Auckland 0814 (off Northside Drive)

From: [redacted]
Sent: Wednesday, 21 March 2018 11:29 a.m.
To: [redacted]; [redacted]
Subject: Re: Knuckle Adaptor - Auxilary power outlet

Gents,
My client is looking for an answer as emailed a week ago?

Thanks

[redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

On 14 March 2018 at 14:52, [redacted] wrote:

> [redacted] can you or [redacted] answer the query below please.

Thanks

[redacted]

Gess Ltd

[redacted]

Gess are delighted to be supplying 330 poles for the NZTA Auckland Southern Corridor Motorway Improvements and 200 poles for the NZTA SH16 Lincoln to Westgate extension.

Exclusive distributor of Valmont Poles in New Zealand http://www.valmont.com/home/products-and-solutions

---------- Forwarded message ----------
From: [redacted]
Date: 14 March 2018 at 14:19

Subject: Knuckle Adaptor - Auxilary power outlet
To: [redacted]

Hi [redacted]

The new luminaires we have purchased have the facility to provide 24v 10watt DC auxiliary power to sensors and other low mounted outside the luminaire.

We need to get the auxiliary power out of the luminaire to the external sensor.

The core of the phase and neutral cables would only be 2mm max, so we would need to drill a hole either in the luminaire or in the knuckle adaptor.

My preference would be to drill a 6-8mm diameter hole in one of the flat discs of the knuckle adaptor, fit a rubber grommet and feed the cable out through the grommet.

Do you think this would cause problems? If not a problem, where on the disc would cause the least concern (eg drill near the hub or near the disc perimeter, etc.)

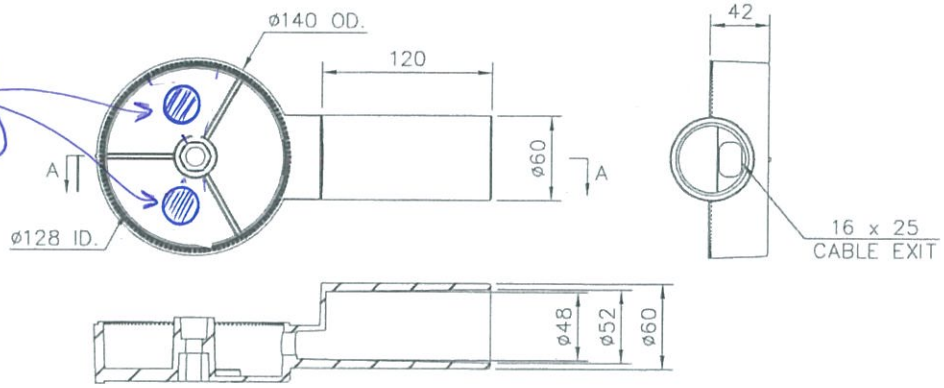
Cheers

[redacted]

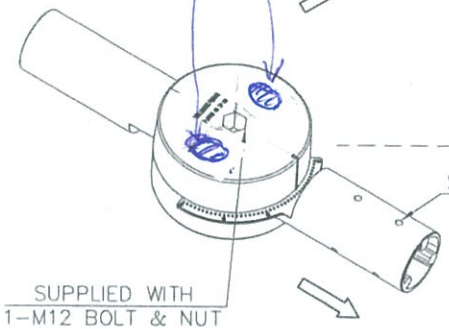
[redacted]
Team Leader Transport Infrastructure | Transport & Infrastructure Business Unit | Wellington City Council
[redacted] W Wellington.govt.nz |

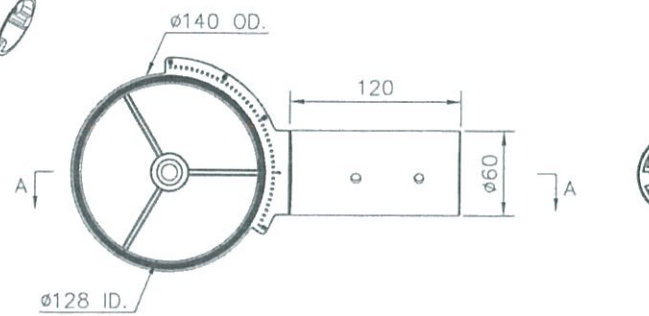
LE17424VC
QUOTATION #

1/6mmø HOLE IN THESE ZONES ONLY

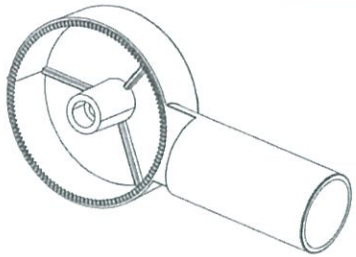


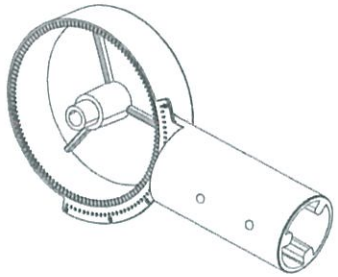
A–A





A–A





ACH CONSULTING.
21/03/18 MB

Received
24/10/17

			DRAWN	CQ2 2017-10-20	MATERIAL		ORDER NO	
			ENGR	CQ2 2017-10-20	THK(mm)		SCALE	N
			CHECKED		WT(kg)			
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS				P/N :	

gess Columns & Streetlights
valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE IA

CUSTOMER

DESCRIPTION ADAPTOR 34–60

City Electricians
Luminaire Assembly Procedure

Assembly Area: Inside of City Electricians Depot

Personnel: 1 Competent Electrician or Lineman.

Hardware Required: 1 x Luminaire (27 or 158)
Correct length of single core 2.5mm N/S
90mm of 4.8mm black heatshrink
50mm of 12.7mm black DWST heatshrink.

Before work commences the assessment for each job will be analysed to check we have the correct Category of light (P or V), Correct Size Spigot adaptor and The correct length cable.

Stage	Procedure
Step 1	Remove Luminaire from box. Check for Damage.
Step 2	Place Protective light cap on Luminaire
Step 3	Place Luminaire on secure workbench and Open.
Step 4	Remove metal Shim from neck of Luminaire by bending until free
Step 5	Loosen bolts as far out as possibly without removing from neck of Luminaire.
Step 6	Get Spigot adaptor and fit into Luminaire on the 0 degree mark. Check it is straight and tighten using 1/2inch ratchet.
Step 7	Cut Single core 2.5mm N/S to correct length. Then Bundle up cable leaving approx 1m free.
Step 8	Remove bolt(hex head) from Spigot Adaptor
Step 9	Thread cable through Spigot Adaptor and into Luminaire until 100mm past termination block
Step 10	Bolt Spigot Adaptor together setting it at 0 degrees. Tighten to 48Nm with Torque wrench.
Step 11	Strip 100mm of Single phase N/S. Pull N/S away from phase and twist together.
Step 12	Place 4.8mm Black heatshrink over N/S and pull down as far as possible. Apply heat until sufficiently sealed
Step 13	Place 12.7mm Black DWST heatshrink over both N/S and phase and pull up to where they separate covering separation point. Apply heat until sufficiently sealed
Step 14	Insert red wire into left side of termination block and tighten.
Step 15	Insert Neutral into middle of Termination block.
Step 16	Get 2.5mm Earth wire Approx 70mm long and insert one end into Middle point of Termination block with Neutral and the other end into right side of Termination block into Earth. Tighten both
Step 17	Tight cable tie around cable to avoid cable pulling out of the Termination box
Step 18	Screw all 6 Lugs into Spigot adaptor so the end is level with inside of Adaptor. Apply Nickel Anti-seize to all threads
Step 19	Do testing Prove test Prove Polarity
Step 20	Place in box with Barcode on box at the same end as the head.
Step 21	Tape up box and label box on same end as barcode with street name and street distance(m).

Asha Harry

From: [redacted]
Sent: Friday, 21 July 2017 4:11 pm
To: [redacted]
Subject: WCC LED Documents
Attachments: 114.066 Volumes 2-4 Contract Documents Draft.docx; 114.066 Volume 1 Tendering.docx

HI [redacted]

Documents attached

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
[redacted] | **W** Wellington.govt.nz |

Transport and Waste Operations Accelerated Rollout of Street Lighting LEDs and CMS Contract 114.0##

Dated 25 July 2017

Volume 1 – Request for Tender

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Tender and Contract Document Structure

For ease of use, the Tender and Contract Documents comprise eight sections contained in five volumes as follows. This volume is highlighted below:

Volume 1 – Request for Tender
- Section 1 – Request for Tender

Volume 2 – Conditions of Contract
- Section 2 – Conditions of Contract and Schedules
- Section 3 – General Requirements
- Section 4 – Activity Specifications

Volume 3 – Payment
- Section 5 – Schedule of Prices and Basis of Payment

Volume 4 – Specifications and Appendices
- Section 6 – Technical Specifications
- Section 7 – Standard Drawings
- Section 8 – Appendices

Volume 5 – NTTs and Post Tender Correspondence

INTRODUCTION

This Request for Tender (RFT), and any contract resulting from it, is to enable Wellington City Council (the Council) to appoint a closed Panel of four street lighting installers (the Installers) to each install 4000 more or less Light Emitting Diode luminaires (LEDs) over the Contract Period in accordance with Council conditions and requirements. The installation will include removing and disposing of the existing streetlight and its associated components. It also includes updating the Council's RAMM database as the installation progresses.

The installation work will be offered to the Panel of Installers in work packages of 750 (more or less) units each so as to enable a complete replacement of the Council's street lights (approximately 17,500 in total, some of which have already been renewed with LEDs). The installation work includes the fitting of a light point controller (LPC) to each LED installed, to enable implementation of a Centralised Management System (CMS).

Tenders are invited from suitably qualified contractors who have acknowledged their interest in and submitted their details in response to the Registration of Interest (ROI) previously issued by the Council. These tenders are to complete the scope of work provided in the tender documents, which includes:

1. Site assessment
2. LED preparation
3. LED installation

Installation work is expected to be completed by the 30th of June 2018. Further details on the Works required and nature of the contract arrangements are set out in this RFT.

The Council's budget for Works to be undertaken by the Panel of Installers is [redacted] in total.

Information for Tenderers

Wellington City Council has clearly defined Conditions of Tendering included within this document which require the Tenderer's compliance if proposals are to be considered for evaluation.

Please read carefully the Conditions of Tendering and utilise the Checklist attached to this document.

Failure to comply with the Conditions of Tendering may disqualify your proposal from further consideration.

Tenderer's Checklist

(for Tenderers' reference only and not required to be submitted with tenders)

Tender for Works for **114.0##**

In Envelope 1:-

2 copies of all required Contractor information including:-

1. a covering letter for this tender ☐
2. a tag schedule for any non-price tags ☐
3. the completed Tender Form (Appendix One) ☐
4. a complete executive summary ☐
5. full details of corporate structure ☐
6. identification of proposed subcontractors, and includes:- ☐
   - a completed schedule of subcontractors
   - subcontractors non price attributes
7. all required insurance information ☐
8. a description of relevant experience ☐
9. a description of track record ☐
10. a description of relevant skills ☐
    - a complete schedule of personnel to be used on the contract within this tender ☐
11. a description of resources, which includes:- ☐
    - a completed schedule of plant to be used on the contract within this tender ☐
12. a completed schedule of current commitments ☐
13. a complete list of outstanding tenders ☐
14. a description of methodology (including construction programme) ☐
15. all required health and safety information ☐

And in Envelope 2:-

All required pricing information including:-

1. the completed Price Form (Appendix Two) ☐
2. the completed Schedule of Prices (Appendix Three) ☐
3. any financial tags identified in a tag schedule ☐

Table of Contents

Section A – Overview and Tender Process

Overview

1 Purpose and Objective of Request for Tender (RFT)

1.1 The Wellington City Council requests tenders for Installers to accelerate the delivery of LEDs across Wellington City. The Council's desired outcome is to negotiate with the Panel of Installers to agree a uniform unit rate for the installation of LEDs, and to be able to offer an equal division of work to all selected Installers with certainty of a regular level of work available over the Contract Period. LEDs are being purchased and imported by the Council, so the offer of regular work is subject to the LED delivery schedule and the LEDs' availability from the Council's nominated distribution yard in Wellington.

1.2 The objective of this RFT is to identify a Panel of up to four Tenderers for the provision of the Works.

1.3 This RFT is issued by the Council.

1.4 This is a closed RFT and is being issued to parties who successfully registered their interest in the Works (the Registration of Interest process) within the allocated time.

1.5 The Council will supply the types, make and models of LEDs that meet its objectives for providing lighting in accordance with AS/NZS 1158, and at the same time meet its objectives for minimising glare and light spill. The Council intends to enter into a direct supply agreement with a number of suppliers for the supply and delivery of these LEDs.

1.6 The Council will contract directly with its existing street lighting maintenance contractor (Downer) to provide local warehousing and distribution facilities for the stock of Council purchased LEDs and LPCs.

1.7 The Council requires Installers to assess each LED renewal site, record measurements and observations directly into fields set up in Pocket RAMM (on a Tablet provided by the Council), supply cabling, spigot adaptors etc., prepare and programme LEDs in the Installer's workshop as per instructions from the Engineer following the site assessment then, install the LED, all as set out in the Contract.

1.8 The Council will select a CMS system and supply the associated Light Point Controllers (LPCs). These will be supplied to the Installers from the distribution facility in time for fitting to LEDs at the time of installation.

2 How to Use this Document

2.1 This RFT consists of:

Section A - Overview and Tender Process

Section B - Tender Conditions
Section C - Evaluation and Acceptance
Section D - Information required from Tenderers
Appendices

Appendices

a) Response Forms (where applicable)

- Appendix One - Tender Form
- Appendix Two - Price Form
- Appendix Three - Schedule of Prices
- Appendix Four - Tender Tag/Qualifications Schedules (price and non-price forms)
- Appendix Five - Personnel Form
- Appendix Six - Subcontractors Form
- Appendix Seven - Tenderer's Plant
- Appendix Eight - Health and Safety Information
- Appendix Nine - Tenderer's Current Commitments Form
- Appendix Ten - Insurance Details Form
- Appendix Eleven – Tender Briefing Intent to Respond Form

b) Additional Information

- Appendix Twelve - The Council's List of Known Risks and Hazards
- Appendix Thirteen - Marking Sheets
- Appendix Fourteen - Conditions of Contract, Specifications and associated Appendices

2.2 Sections A, B and C of this document provide background information, instructions and conditions that apply to this RFT process. Tenderers need to read and understand these sections.

2.3 Section D of this document sets out the information required in tenders submitted in response to this RFT document.

2.4 The Appendices contain additional information and forms referenced from sections A through to D of this RFT document.

2.5 The term "Tenderer" is used in this RFT document to refer to potential Tenderers who respond to this RFT process.

3 Background

3.1 The Council is responsible for providing and maintaining roading

(including street lighting) assets and facilities for the benefit of the public in Wellington City. The Council has bylaws and policies to manage in a fair and consistent way:-

- The supply of roading facilities and services to the public: and
- The activities of others in their use and development of land and facilities for the purposes of land transportation.

3.2 In calling tenders for this contract, the Council is supplying roading (street lighting) facilities and services to the public in a fair and consistent way.

3.3 The Council's budget needs for the maintenance and improvement of its transport network and facilities are planned through its Annual and Long Term Planning processes.

3.4 Maintenance and improvements to the transportation network are funded mostly from rates and from the New Zealand Transport Agency (NZTA) subsidies. The funding from NZTA is subject to work being carried out in a properly planned manner with good processes and good quality of work. Work is audited to ensure compliance. The work included in the proposed Contract is funded predominantly by NZTA and as such the Council is required to follow the rules and processes outlined in NZTA's Procurement Manual and the Council's NZTA endorsed Procurement Strategy, both documents being available on-line from the respective organisations' websites.

3.5 This RFT stands alone from the documentation referred to in clause 3.4 above, which are referred to for guidance only.

3.6 This RFT reflects the requirements of NZTA's Procurement Manual and the Council's endorsed Procurement Strategy.

3.7 The Council wishes to obtain the best value possible from this tender process. As a result of this process the Council seeks to achieve an outcome that safely completes the Works to Specification, within its budget and with the least disruption to the public.

3.8 The scope of this RFT includes but is not limited to the following:

- Site assessments requiring travel, inspection and recording of measurements, assessments and observations made at the site using Pocket RAMM.
- Ordering, and receiving LEDs and LPCs from the Council's nominated warehousing and distribution facility.
- In a dry workshop environment, preparing the LEDs and programming the LED driver as instructed by the Engineer, to suit the assessed lighting needs of the install site.

- Supply and fitting of spigot and other adaptors as required. Note some suppliers will provide a range of adaptors as part of their LED supply arrangements, and Installers are encouraged to make use of this
- Installation of new LEDs.
- Safe and environmentally responsible disposal of old street lights and associated componentry.
- Contract administration and workforce management, including compliance with health and safety requirements, temporary traffic management and the allocation of night shift work.

3.9 The Council has a quality driven approach to its maintenance and construction contracts. In keeping with this philosophy, Installers are expected to achieve the highest standard of performance on all aspects of delivery of the Works.

3.10 Installer monitoring and auditing will be carried out to ensure that quality standards and Specification requirements are met.

3.11 The Engineer to the Contract will be sourced internally within the Council.

RFT Process

4 Timetable

4.1 The anticipated timetable for this RFT process is:

Activity	Date
Issue RFT	26th July 2017
Deadline for questions on this RFT	4pm 15th August 2017
Tender closing time and date	4pm 22nd August 2017
Tenderers notified of outcome of evaluation by	3rd October 2017
Works commence	TBA. This is dependent on delivery of sufficient quantities of LEDs and LPCs landed – current projection is mid-November 2017

4.2 **Note**: This timetable is indicative only and may be subject to change at the Council's sole discretion. Tenderers will be notified of changes by the Council's Authorised Representative.

5 Submission of Tenders

5.1 Tenders must be completed in accordance with the instructions in Section D.

5.2 A conforming tender will include all non-price information plus all price information. Price information will include a priced Schedule. The tender price for the conforming tender will be that recorded on the Price Form.

5.3 Tenderers are required to submit two (2) hard copies of their tender non price submission and one (1) hard copy of their tender price submission

5.4 For the two envelope process of this tender, the following applies:

(a) Each Tenderer must ensure that all pricing components of their tender are provided separately from the remainder of their tender

(b) All information relating to pricing must be contained in a separate sealed envelope (including any tags that affect pricing)

(c) The pricing information must be clearly marked 'Pricing Information' to indicate that it contains the pricing information. This is to ensure that the pricing information cannot be viewed when the package containing the other elements of the tender is opened.

5.5 All copies of tenders (including the 2 envelopes separating the price and non-price information) must be enclosed in one sealed package, with the Tenderer's name clearly shown on the outside of the packaging and clearly marked and addressed as follows:

Tender for Contract 114.0##; Accelerated Rollout of Street Lighting LEDs and CMS

Wellington City Council

101 Wakefield St

Wellington

Tenders shall be delivered or forwarded by mail to the address above.

5.6 Delivered Tenders must be placed in the tender box located at the above address before the closing time and date noted in clause 4.1. While every care will be taken to place postal or couriered tenders in the tender box, the Council has no responsibility for failure to do so before the closing date and time.

5.7 Tenders sent by facsimile or email will not be accepted.

5.8 Tenderers must ensure that their tender is placed in the tender box before the closing date and time. The Council's policy is not to evaluate late tenders. However, the Council retains the right to evaluate late

tenders where, in the Council's sole opinion, there is no material prejudice to other Tenderers.

5.9 A consortium and/or joint proposal may be submitted. All parties to a joint proposal are jointly and severally liable and one of the parties must be identified in the Tender Form at Appendix One as the contact point for all communications with the Council relating to the tender.

6 Communication between the Council and Tenderers

6.1 All communications with the Council concerning this RFT process must be conducted in writing through the Council's Authorised Representative as below.

6.2 The Council's Authorised Representative is:

Authorised Representative:	[redacted]
Physical Address:	101 Wakefield St Wellington
Postal Address:	PO Box 2199, Wellington 6140
Phone:	[redacted]
Fax:	-
Email:	[redacted]

6.3 The Council may change the Authorised Representative at any time. It will notify Tenderers of any such change. The Council may notify Tenderers either via mail or email.

6.4 Where a Tenderer has an existing contract with the Council then business as usual communication, for the purpose of that contract, will continue using the usual contacts. Tenderers must not use business as usual contacts to lobby the Council, solicit information or discuss any aspect of this RFT.

7 Tender Briefing

7.1 There will be no Tenderer briefing.

8 Site Inspections/Orientation

8.1 As a citywide asset, access to the street lighting "Site" is a publicly available domain. Unless otherwise confirmed by the Council's Authorised Representative, no organised Site visit for Tenderers will be provided. The Council's Authorised Representative will, however, advise intending Tenderers of details of a Site visit if one is to be arranged.

8.2 Tenderers are encouraged to familiarise themselves with all the relevant

aspects of the required Works and the Council's operations in respect of the Works.

8.3 Tenderers shall be held to have satisfied themselves as to the nature, value and extent of the Works, and to the feasibility of carrying out the Works to the requirements of the Contract Documents, including satisfying themselves concerning access to the Site, the rights and interest of other parties and any other matters that may affect the execution of the Works.

9 Additional Information and Clarification

9.1 Any requests for additional information or clarification of this RFT must be made in writing or by email through the communication process set out in clause 6.

9.2 The Council reserves the right to circulate any clarification response to one Tenderer, to all recipients of this RFT.

9.3 Responses to requests for information or clarification that relate solely to one Tenderer and contain commercially sensitive information may be made generic and provided to all Tenderers.

9.4 The Council will issue any clarification and/or change to this RFT by way of notice in writing, via email or mail. All amendment notices will become part of this RFT.

9.5 The Council will not be bound by any statement, written or verbal, made by any person other than the Council’s Authorised Representative. The Council’s Authorised Representative is the only person authorised to make representations or explanations in relation to this RFT.

10 Drawings and Specifications

10.1 All Drawings and Specifications issued in this Contract (if any) are intended to show the general nature of the scope of the Work and do not purport to show the full and minute details. The Tenderers and all their sub-contractors will be deemed to have allowed in their tenders for completing the Works to specification ready for possession by the Principal.

10.2 Should ambiguities or contradictions appear to exist on the Drawings or in the Specification, Tenderers shall allow that method which in their opinion will involve the greater cost.

10.3 The Wellington Electricity standard for street lighting installation “Electricity Network Standard: Street Lighting Installation Requirements” shall be complied with and adhered to. A copy is included within Appendix 14, Volume 4, Specifications and Appendices

11 Tender Presentations

11.1 Tender presentations will not be required.

12 Tender Validity Period

12.1 Every tender will be a continuing offer and irrevocable for sixty (60) calendar days after the tender closing date and time referred to in clause 4.1 or such longer period as agreed to between the Council and the Tenderer(s).

13 Tender Deposit

13.1 A tender deposit is not required.

14 Pricing and GST

14.1 Prices tendered must be exclusive of goods and services tax (GST) and in New Zealand dollars.

15 Alternative Tenders

15.1 The Council's preference is to contract on the basis set out in this RFT. However, the Council may consider alternative tenders at its sole discretion.

15.2 Any alternative tenders should be clearly identified as an "Alternative Tender" and clearly outline the commercial advantage and added value offered to the Council. The Council reserves the right not to consider an alternative tender.

15.3 Alternative tenders must be accompanied by a conforming tender.

16 Mandatory Requirements of Tenderers

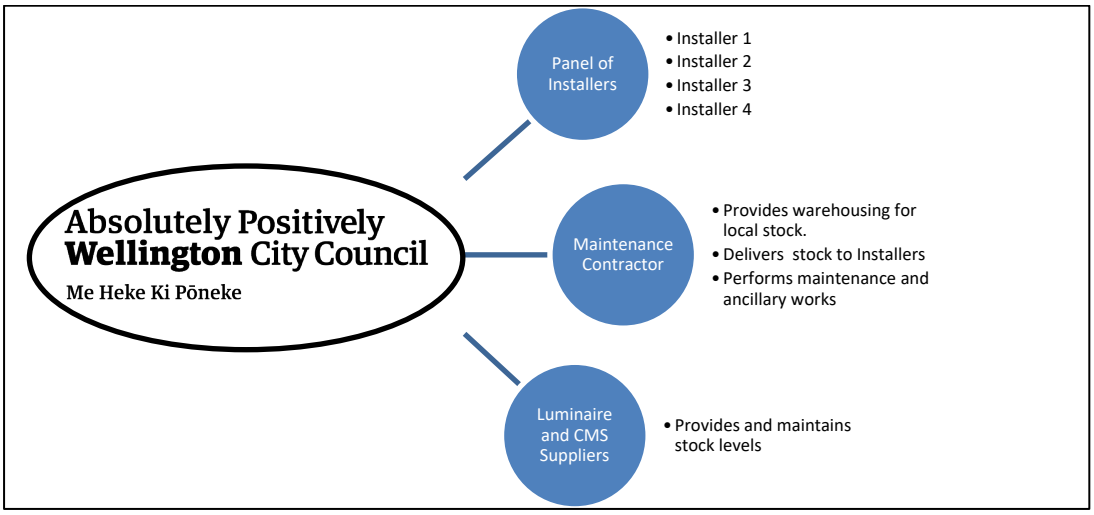
Mandatory requirements which if not met will result in rejection of a tender, include the provision of evidence in the tender of:

- Wellington Electricity certification to the appropriate competency levels to work on or within 4m of their overhead network or in proximity to their underground network (Cover Letter and Relevant Skills)
- The ability to obtain and provide an on-demand performance bond for 5% of the contract value from a New Zealand registered bank with a credit rating of AA- or better in accordance with section 80 of the Reserve Bank of New Zealand Act 1989 (Cover Letter)
- An accredited quality management system which is independently certified as being compliant with NZTA's TQS1 quality standard, or similar (Relevant Skills);

- The available resources capable of carrying out the LED installation work at a rate of at least 550 units per month (Resources);
- Trained and qualified staff or resources certified to STMS level 2 available to carry out temporary traffic management duties in compliance with NZTA's CoPTTM on all work sites for the duration of the contract (Relevant Skills).

17 The Contractual Relationship

The following diagram illustrates the intended set of contractual relationships for the implementation of a complete replacement of the Council's current street lights with LEDs in 2017/18. All parties will be contracted to the Council.



However, any indication of a distribution or share of installation work by the Council to any Installers on the Panel is not a guarantee of a fixed quantum of work, or indeed, of any work.

18 The Secondary Procurement Process

In accordance with Rule 54.10 of the Government Rules of Sourcing, the required "Secondary Procurement Process" for allocation of Work shall be as follows:

- The Council has divided the lighting network into job lot packages of approximately 750 units each. At the commencement of the installation contracts, the Engineer will issue 2 work packages to each of the Installers as soon as the Engineer is satisfied sufficient stocks of P and V category LEDs have landed.
- Once an Installer has successfully completed the installation of 300 LEDs from their first package, it will be invited to select its third package from the remaining packages. Once they have completed 300 LEDs from the second package they will be invited to select their fourth

package, and so on until there are no remaining packages to choose from

- Installers having made their selection, then commence work on that package
- Installers who maintain a higher level of output and maintain an acceptable quality of work will be able to gain a higher share of the available work, and an earlier opportunity to select those packages that best suit them
- Work quality will be monitored by the Council through the Installer's agreed QA system. The Council will have a performance monitoring system in place using the Non Conformance Reporting (NCR) process. One consequence of poor performance could be that the Installer is not invited to select its next package until all outstanding NCRs have been satisfactorily closed out.
- Refusal to select any work package from the available pool shall be treated as a default under the Contract.

Section B –Tender Conditions

19 Rights Reserved by the Council

19.1 The Council reserves the right to:

- reject all or any tenders and not accept any tender;
- call and/or re-advertise for tenders or revisit any prior ROI process;
- waive any irregularities or informalities in the tendering process;
- amend the closing date, the acceptance date, or any other date in the Tender documents;
- amend this RFT document and any associated documents, by the issue of a written notice;
- seek clarification of any tender;
- suspend or cancel (in whole or in part) this RFT process;
- consider or reject any alternative tender, at the Council's sole discretion;
- deal separately with any of the divisible elements of any tender;
- enter into discussions and/or negotiations with any Tenderer (to the exclusion of any other Tenderer) at any time before or after acceptance of a tender and upon any terms and conditions before or after acceptance of a tender;
- meet with any Tenderer before and/or after Tender close and prior to award of any Contract.

19.2 The Council will not be bound to give any reasons for decisions made as a result of this RFT process or as an outcome of the evaluation of tenders.

19.3 The Form of Contract for the provision of Works attached in Appendix Fourteen is substantially the Contract that the Council will require any successful Tenderer to enter into. However, the Council may at its discretion negotiate outside this contract form during any negotiation phase.

20 Canvassing

20.1 Any Tenderer who indirectly or directly canvasses any councillor, officer, employee or advisor of the Council other than the Council's Authorised Representative concerning any aspect of this RFT process may, at the Council's discretion, be disqualified from further consideration under this RFT.

21 Council Provided Information

21.1 Tenderers must examine this RFT document themselves, and make all other investigations that Tenderers consider necessary (including with regard to information provided by the Council in relation to this RFT document and RFT process), before submitting their tender.

21.2 Tenderers are responsible for verifying the accuracy and adequacy of information supplied by or on behalf of the Council at their own cost.

21.3 All information provided by the Council in relation to this RFT is released on the following basis:

- such information provides a background only;
- the Council makes no representation or warranty with regard to such information;
- Tenderers rely on all information provided by the Council at their own risk;
- the information will not form part of any subsequent contract documents other than as specified in this RFT.

21.4 This RFT document is the property of the Council and may not be copied or reproduced in any way (other than for the purposes of preparing and submitting tender submissions) without the prior written approval of the Council.

22 Confidentiality

22.1 The information supplied by the Council (either itself or through its consultants or advisors) in connection with this RFT or any Contract that may arise out of it, is confidential. Tenderers must not release or disclose any of the information to any other person (other than to their employees or advisors as part of their preparation of a tender response) without the prior written consent of the Council.

22.2 Before releasing any confidential or commercially sensitive information to a Tenderer, the Council may require the Tenderer (and any employees, subcontractors or agents of the Tenderer) to sign a confidentiality deed.

22.3 The Council will consider tenders received confidential. However, the Council is subject to the Local Government Official Information and Meetings Act 1987 and may be required to disclose information under that Act or under any other law or by any Court.

22.4 No advertisement or other information relating to this RFT or any Contract that may arise out of it shall be published in any newspaper, magazine, journal or other advertising medium, or broadcast/ disseminated by radio, television or other electronic media without the prior written approval of the Council.

23 Tenderer Provided Information

23.1 Tenderers warrant to the Council that:

(a) All information provided by them in their respective tenders is complete and accurate in all material respects; and

(b) The provision of information to the Council, and the use of it by the Council for the evaluation of tenders and for the negotiation of any resulting Contract, will not breach any third party intellectual property rights.

23.2 All tenders submitted to the Council in response to this RFT shall be retained by the Council.

23.3 The Council may request clarification and additional information from any Tenderer about any aspect of its tender. The Council is not required to request the same clarification or information from each Tenderer.

23.4 Tenderers must provide the clarification or additional information in writing and within the time notified by the Council. The evaluation team may take such clarification or additional information into account in evaluating tenders.

23.5 If a Tenderer fails to respond adequately or within the time stipulated by the Council to any request for clarification or additional information, the Council may cease evaluating the Tenderer's tender.

23.6 The Council reserves the ability to adjust its evaluation and scoring of a Tenderer's tender following the collection of further information.

24 Anti-collusion/Bid Rigging

24.1 In submitting its tender, each Tenderer warrants that its tender has not been prepared with consultation, communication, arrangement or understanding with any competitor (unless for joint venture, consortium or subcontracting purposes).

24.2 The Council reserves the right, at its discretion, to report suspected collusive or anti-competitive conduct by Tenderers to the appropriate authority and to provide that authority with any relevant information including a copy of the Tenderer's tender.

25 Errors and Omissions

25.1 The Council is under no obligation to check tenders for errors. Acceptance of a tender that contains errors will not invalidate a Contract that may be negotiated/awarded on the basis of that tender.

26 Tender Tags and Qualifications

26.1 Any tender subject to significant tags and/or qualifications may be

considered as an alternative tender.

26.2 Tenderers are to list all tags and qualifications in the tag/qualifications schedule Appendix Four. Any tags/qualifications not listed in Appendix Four will not be considered by the Council and will be deemed as excluded from the Tenderer's tender.

26.3 Tenderers are to provide a price (where the tag/qualification has a price implication) for the tagged item and a price for the item if the tag is withdrawn. Tags that have price implications must be recorded in the Tender Tag/Qualifications Schedule (Price Form) Appendix Four.

26.4 Tenderers may be requested to remove unacceptable tags/ qualifications. Refusal to remove tags/qualifications may result in a tender being rejected. If the consequence to Council of the tag/ qualification is unacceptable, the tender will be considered to be non-conforming and will be rejected.

26.5 Tenderers must also, if possible, identify the consequences of any tags/ qualifications in the respective tag schedule Appendix Four.

27 Verification and Credit Check by the Council

27.1 Tenderers must confirm to the Council, on its behalf and on behalf of their personnel referred to in their tenders that the Council is authorised to:

- verify with the referees listed in their tender and with any other person, any information included in the tender submission
- carry out a credit check on the Tenderer.

27.2 The Council is not obliged to contact, or to only contact referees provided by Tenderers and may seek further information on any issues from sources other than the referees provided, including the execution of a credit check. The Council may also take into account knowledge it already has regarding Tenderers and/or their personnel.

28 NZTA Competition Monitoring System

28.1 The Council may supply information to NZTA as required in the NZTA Procurement Manual. This information may be made available to tendering authorities and their advisors (excluding information that identifies Tenderers).

29 Tender Costs

29.1 All costs incurred by Tenderers in connection with their tenders are the sole responsibility of each Tenderer, including but not limited to costs arising from:

- preparation of their tender;
- any communication and/or negotiation with the Council;

- any meetings, interviews or presentations with the Council; and
- site visits.

30 Governing Law

30.1 This RFT is governed by New Zealand law. New Zealand courts have non-exclusive jurisdiction as to all matters relating to this RFT.

31 Liability Limitation

31.1 The Council and its agents or advisors will not be liable in contract or tort or in any other way for any direct or indirect damage, loss or cost incurred by any Tenderer or other person in respect of this RFT other than under an award of the actual contract to undertake the Works.

32 No Contract

32.1 Nothing in the conduct of this RFT gives rise to any process contract or other legal obligation between the Council and any Tenderer unless and until a contract for the actual Works has been awarded by the Council to the successful Tenderer (if any).

32.2 This RFT does not give rise to a process Contract.

Section C – Evaluation and Acceptance

33 Evaluation of Tenders

33.1 The Council will assess the tenders received against the requirements set out in this RFT and at the Council's sole discretion.

33.2 The Council will convene an evaluation panel comprising members chosen for their relevant qualifications, expertise and experience. The Council may, at its sole discretion, invite independent advisors to evaluate tenders, or any aspect of tenders. Tenderers must not communicate with any member of the evaluation panel other than the Council's Authorised Representative in his role as Council's Authorised Representative and only as provided for under this RFT.

33.3 There will be no public opening of tenders.

33.4 Factors that will be taken into account when evaluating tenders will include those described in Section D.

34 The Evaluation Process

34.1 Tender evaluation will be carried out in accordance with NZTA's Procurement Manual. The supplier selection method to be used is quality based as described in Steps 1-3 of Appendix C of the NZTA Procurement Manual. Step 4 of the Procurement Manual is replaced with Step 4 set out below. The relevant sections of the manual relating to supplier selection are reproduced below. Note that the term “preferred supplier” in steps 1-3 refers to the panel of 4 preferred Installers.

Separation of non-price and price information

- *Proposals must be submitted in two separate envelopes. Envelope 1 must contain all proposal information other than the price. Envelope 2 must contain the price information.*
- *Approved organisations must complete steps 1-3 before opening envelope 2.*

Step 1 Grade the non-price attributes

- *Open Envelope 1*
- *Determine that the proposal is within the RFT's scope and requirements*
- *Grade each non-price attribute for each proposal from zero to 100*
- *Reject (exclude from further consideration) any proposal that fails against an attribute.*

Step 2 Calculate the weighted sum margin

- *Multiply the weight (specified in the RFT) by the grade for each non-price attribute and divide by 100. The result is the index for each non-price attribute.*
- *Add all the indices for each proposal. The result is the weighted sum of non-price attribute grades.*

Step 3 Identify the Preferred Supplier

- *The preferred supplier is the supplier that has the highest weighted sum of the non-price attributes grades.*

Complete Steps 1 – 3 before opening envelope 2

Step 4 Negotiate with the preferred supplier

- Open each of the 4 preferred Installers' envelopes 2 and enter into price negotiations with them individually
- Negotiation must be conducted in accordance with the RFT and any contract let must be within the scope of the RFT. The negotiation should not result in a large change in the quality or scope of the outputs, or in the prices proposed. Refer further notes below.
- The Schedule of Prices unit rate will be negotiated at a meeting with the four preferred Installers, the Council having disclosed the range of unit rates for the item across the four preferred Installers.
- The Council shall also disclose its own estimate of the unit rate and in the first instance shall seek agreement with the four preferred Panel Installers on a common (or close to common) unit rate for all Installers. The unit rate initially tabled by the Council as a starting offer may be based on a rate that will deliver the work within its installation budget.
- To give flexibility to the outcome:
    - If any preferred Installer is unable to agree to a final unit rate acceptable to the Council, or to otherwise enter into the Council's Installation Contract, then the Council may choose to reject that Installer and have less than four on the Panel
    - Alternatively the Council may choose to reject that Installer and qualify the Installer with the next highest weighted sum of non-price attribute grades from the original set of applicants so as to maintain its ability to contract up to four Installers.

- Alternatively again, the Council may choose to accept a different unit rate from the four preferred Installers but may also then set different nominal quantities of the total work with each of the Installers and/or may cap the total value of work to be made available to an Installer over the life of the contract.

- At the conclusion of these negotiations, the Council will offer an Installation Panel Contract to each of the remaining preferred Installers. The Contract shall be clear that any intention at the outset of a distribution or proportioning of work via a nominal quantity is not a guarantee of this amount of work or of any work, i.e., the Contract will be “measure and value”.
- When a Contract is awarded, the unopened price envelopes from each Installer that did not take part in the final negotiation process shall be returned to them.

34.2 **Attributes and Weightings**: The attributes, their status in terms of price quality weighting and their fail grades are as follows:-

Attribute	Weighting	Fail Grade
Relevant experience	25%	35
Relevant skills	25%	35
Methodology	25%	35
Resources	25%	35
Total	**100%**	**-**

Attributes will be graded in accordance with the following table:-

Grade	Description	Explanation
90, 95 or 100	Excellent	Demonstrates exceptional compliance of ability to convey exceptional provision of the requirement
75, 80 or 85	Good	Requirements are fully covered in all material aspects
60, 65 or 70	Above average	Requirements are adequately covered
50 or 55	Average	Adequate, with some deficiencies that are not likely to have any adverse effect

Grade	Description	Explanation
40 or 45	Below average	Barely adequate and would need considerable improvement in this attribute, if selected
35 or less	Poor	Total non-compliance and/or inability to convey provision of the requirement

34.3 **Weighted Attribute Fail Grade:** Any non-price weighted attribute that scores a fail grade as set out in clause 34.2 above, or scores less than the relevant fail grade, will exclude the Tenderer from further participation in this RFT process, and their tender will be rejected (**note**: fail grades do not apply to sub-attributes).

34.4 **Alternative Tenders:** Tender evaluation of Alternative Tenders, where evaluated by the Council, will be conducted as follows:

- Alternative Tenders may be considered by the Council at the Council's sole discretion
- Only Alternative Tenders which are within the scope of this RFT, and which meet the Council's requirements may be considered.

34.5 Notwithstanding that an Alternative Tender may be a preferred tender the Council is under no obligation to award a Contract in respect of any Alternative Tender.

34.6 The Council may also include in its evaluation of Tenderers' tenders its own past experience with Tenderers. This may include whether Tenderers have met all contractual requirements that they may have had with the Council, for example, previous service delivery record when providing goods, services and /or works, Tenderers' ability to promptly identify and resolve issues, provide timely and accurate information and adhere to plans and budgets.

35 Negotiations

35.1 The Principal's negotiation team will enter into negotiation with the preferred suppliers with the objective of entering into 4 contracts based on this RFT and the content of the preferred suppliers' tenders. The process will include, but is not limited to, verification of any assumption the tender evaluation team has made in evaluating the tender. The Principal seeks to minimise the points of negotiation and therefore the duration of the negotiation. (Refer to para. 34.1, Step 4, above.)

35.2 If any negotiations entered into with the preferred Supplier fail to reach agreement on a contract, that tender will be rejected and the Tenderer notified in writing.

35.3 Once a tender has been rejected, for any reason whatsoever, that tender shall not subsequently be accepted in its original form or in any

negotiated form. In this instance the Principal may commence negotiation with the next highest ranked Tenderer who shall then become a preferred Supplier.

35.4 Once the nominated negotiation team has successfully concluded negotiations with the preferred Suppliers, it will prepare a written “Tender Evaluation Report”, with recommendation, for the Principal’s consideration.

36 Communication of Decisions

36.1 The Council's Authorised Representative will notify each Tenderer of the decision(s) resulting from the evaluation of tenders in writing.

The successful Tenderers (the Installers) will be provided with the following tender evaluation information:-

- The names of the selected Installers
- The uniform agreed install rate or range of agreed install rates;
- The number of tenders received;
- Their attribute grades compared with the range of grades from all conforming tenders for each attribute.

Unsuccessful Tenderers will be provided with the following information:-

- The names of the selected Installers;
- The agreed install rate or range of agreed install rates;
- The range of grades for each non-price attribute across all conforming tenders, and the Tenderer’s individual non price attribute grades
- If their tender was assessed as non-conforming, then provide the reasons for this assessment, e.g., out of scope, etc.

36.2 Notification shall not extend to cover disclosure of the details of the tenders or of how the evaluation or Supplier selection was arrived at.

36.3 All notices will be forwarded to the email address provided by each Tenderer in its tender.

37 Preferred Tenderer

37.1 Notwithstanding any other provisions of this RFT, the Council is not obliged to negotiate with any Tenderer selected as a preferred Tenderer resulting from this RFT process.

37.2 Should the Council advise a Tenderer that it is a preferred Tenderer, such advice does not:

- constitute an acceptance of a Tenderer's tender by the Council, or create a Contract; or
- constitute an award of a Contract to the Tenderer; or,
- imply or create any obligation on the Council to enter into

negotiations with a Tenderer or award the Contract to a Tenderer.

37.3 The Council may discontinue any negotiations with Tenderers(s) at any time.

Section D – Information Required from Tenderers

38 Instructions

38.1 Tenderers are required to provide the information requested in Section D from "Cover Letter", clause 39, to “Assumptions”, clause 51. In answering questions, Tenderers should use the numbering system in Section D in their tender, and respond in the same sequence.

38.2 Where a question in Section D:

- is not relevant then Tenderers must indicate "Not Applicable" against the respective question number in their tender;
- invites Tenderers to provide information, and Tenderers choose not to, then that response is likely to be scored down. Similarly, information that is not fully supported by a rationale is likely to be scored down.

Tenderers should not leave any responses blank as these will be viewed as non-responses.

Note: To avoid assumptions or a lack of clarity by answering too briefly, Tenderers should ensure they give fully supported responses – these may include checklists, flow diagrams, sketches, detailed explanations, etc., where appropriate.

38.3 The Tender Form in Appendix One must be completed, signed and returned along with the Tenderer’s tender.

38.4 Wherever Tenderers are asked to provide information, wherever relevant, such information must also be provided for any subcontractors who are involved in performing the Works.

38.5 Tenderers are encouraged to be concise in their responses, and limit the information to that relevant to the Works. Tenderers are to limit their tender submission (inclusive of any subcontractor or joint party information required) to a maximum of twenty (20) single sided A4 pages, or ten (10) double sided A4 sheets with font size no smaller than 12 point Times New Roman or equivalent. This maximum excludes a cover letter, any of the forms required to be filled in and submitted, supporting certificates, outline management plans (Quality, Safety, Sequencing, and Temporary Traffic Management), and any CVs (which should be a maximum of two pages each).

39 Cover Letter

39.1 The Tenderer shall enclose a cover letter which in addition to any information the Tenderer may wish to supply:

- Confirms that the Tenderer has read and understood the RFT, all

the terms and conditions contained in the RFT, that the tender covers all of the requirements of the RFT, and that the RFT will continue to be complied with;

- Provides a statement of affirmation confirming the Tenderer's commitment to working within the required collaborative management culture;
- Confirms that the tender expressly identifies those requirements which are not covered by the tender;
- Discloses whether or not the Tenderer has any conflicts of interest;
- Advises whether the tender contains any tags (with tags being clearly set out in the respective price and non-price Tag Schedules). (**Note**: details of tags relating to price shall be included in Envelope 2);
- Sets out clearly any assumptions the Tenderer has made (including assumptions as to the interpretation of the Tender Documents upon which it is based);
- Provides the name and address of any proposed bond surety;
- Confirms that their insurance policies meet the requirements of the Contract;
- Confirms there are no excepted risks and/or exclusions in their respective insurance policies that will reduce the cover to the Council for the Works;
- Confirms the amount of the deductibles for all insurances required;
- Confirms the insurance policies will be kept current for the duration of the Contract;
- Confirms the tender is a conforming tender, and if not, provides details of why it is not a conforming tender. (**Note**: price details to be included in Envelope 2 only.)
- Confirms their nominated referees have been advised their names have been put forward for this RFT and that the Council may contact them for further information in relation to this RFT;
- Advises whether any invitation to make a presentation to the Tender Evaluation Team is accepted or declined;
- Provides contact details for the single point of contact for the Tenderer.
- indicative daily productivity rate (LEDs installed per Working Day)
- Confirms its electrical installation personnel have the necessary Wellington Electricity clearances and competencies to work on or within 4m of the overhead network, or in proximity to the underground network

40 Executive Summary

40.1 This section must include:

- An overview of the Tenderer's proposal for undertaking the Works required by this RFT;
- A summary of the major benefits which, in the Tenderer's opinion, the Council would gain from accepting its tender;
- An overview of the Tenderer's capability to carry out the Works and of any subcontractors which the Tenderer proposes to engage in connection with the Works.

41 Financial Viability and Organisation Fit

41.1 Tenderers are to provide an organisation profile that includes:

(a) name and address of its organisation;

(b) type of organisation, e.g., publicly listed company, private company, partnership, and the NZ Companies Office number (if registered);

(c) brief details of organisation ownership;

(d) numbers of staff the Tenderer employs locally and within New Zealand;

(e) a brief history of the organisation including the core areas of its business, relative position in the market, size of operation and future plans and focus;

(f) confirmation that if requested by the Council during tender evaluation, the Tenderer will supply one copy of their latest audited financial statement.

41.2 If the Tenderer is a consortium or joint tender, Tenderers are to:

(a) If a joint Tenderer, provide the information in section 41.1 above in respect of each party;

(b) If a consortium, provide information about any history the consortium members have of working together;

(c) For joint Tenderers, nominate one party as the lead party for communications.

42 Relevant Experience

42.1 This section includes, but is not limited to the following issues. Tenderers must as a minimum include a comment on each of the items listed and on any other issues in respect of this topic:

- Relevant experience with projects similar to the Works including their size, scope and complexity. Tenderers shall list 3 projects and describe how they are relevant to the Works, noting that this attribute refers to the relevant experience of the Tendering entity, its personnel and key subcontractors intended to be engaged on

the Works

- Relevant experience with working in Wellington or environments similar to that of Wellington
- Relevant experience of the tendering entity and personnel with the full range of work activities, including use of the various RAMM applications required under this RFT
- Relevant experience of personnel working on street lighting connected to the Wellington Electricity network or similar
- Relevant experience with the full range of contract management activities including programming, planning, recording and reporting as required of this RFT
- Relevant experience with quality, safety and temporary traffic management in particular as required in this RFT
- Relevant experience with customer services including pre-work notifications and contact with the public
- Experience with collaborative management (note this is not alliancing)

43 Track Record

43.1 Track Record is not scored as an attribute in the tender evaluations. However, to assist the TET, in this section the Tenderer should demonstrate a consistent delivery of quality service without requiring intensive supervision by the Principal or its advisors. Tenderers should also provide details that demonstrate:

- how the Tenderer added value, exceeded expectations, and worked with minimal client supervision;
- the Tenderer’s track record in dealing with members of the public and the local and/or public authorities;
- the Tenderer’s track record in temporary traffic management;
- the Tenderer’s track record in health and safety, including details of any certifications, awards, health and safety record, etc.

43.2 Referees - Tenderers may provide the name and contact details of up to three (3) referees, who are able and authorised by the relevant Tenderer, to comment effectively on the Tenderer's ability to carry out the Works required under this RFT document.

43.3 It is important to only nominate client referees that have had a significant involvement in a contractual relationship with the relevant Tenderer's organisation.

43.4 Tenderers are to confirm in their cover letter that the Council may contact any referees nominated in the tender.

44 Relevant Skills

44.1 This section includes, but is not limited to, the following issues relating to

both personnel and management systems.

Personnel – Technical and Management

44.2 Tenderers must as a minimum provide the following information and may include information on any other issues in respect of this topic that the Tenderer considers is relevant:

- Proposed management, technical and administration structure(s) for the Works covering contract management, planning, administration, supervision and delivery of the Works;
- Skills, qualifications, competence, responsibilities and availability of the key personnel proposed for the Works (including subcontractors) particularly in the following responsibility areas:
  - Contractor's Representative, Contract/Project Manager
  - Site Assessor
  - Key trades staff (e.g., electrical) and plant operators for the Works, with copies of certifications/competencies/licences required for close proximity work to live overhead and underground electricity networks, operating EWPs, etc.
  - RAMM applications (RAMM GIS, RAMM Contractor, Pocket RAMM, RAMM Assessment etc.)
  - Safety and traffic management;
  - Quality management, compliance testing and acceptance, and risk management;
  - Other specific to the Works (if any).
- CVs (max 2 pages per person) which detail the experience, competence, qualifications and training of the key personnel proffered for the Works;
- The personnel and subcontractors (if any) the Tenderer will be using on the Works. (Use Appendix Five - Personnel Form).

Systems – Technical and Management

44.3 Tenderers are to describe their systems for managing performance of the Works and the Contract. This includes in the management areas of planning/programming, workflow and progress monitoring, etc., as well as physical progress of the Works.

44.4 Tenderers shall comment briefly on their systems for recruitment, induction, performance management and training and development. Tenderers shall provide a summary of their relevant staff and industry training programmes, and whether these programmes are NZQA approved.

44.5 Traffic Management - Tenderers are to describe their systems for developing and implementing temporary traffic management plans.

44.6 Customer Services - Tenderers are to describe their systems for managing the customer/ratepayer/road user interface

44.7 Quality Management – Tenderers are to describe their Quality Plan, and how it will verify that the necessary resources and systems are in place for the Works, and that the Works will be completed to Specification.

44.8 Tenderers shall attach a copy of their current quality accreditation (if any) which should demonstrate that:

- The accreditation covers the scope of Works covered by this RFT;
- The accreditation is current and will be current to the expiry of the Validity Period and will be renewed if the Tenderer is awarded a Contract for the Works; and
- The accreditation covers the office or branch of the organisation which, if the Tenderer is successful with its tender, will deliver the Works.

44.9 The Health and Safety at Work Act 2015 (HSW Act) places certain duties on the Council as Principal to a contract. Tenderers are to provide the Health and Safety information listed in Appendix Eight. Those who hold relevant certifications shall describe their health and safety management systems and provide evidence of their certification.

45 Resources

45.1 Tenderers shall provide comment on the resources, including labour, plant, equipment, facilities and intellectual property, and supplier arrangements currently possessed or utilised which are appropriate to this RFT. The information provided should demonstrate suitability, availability and commitment for the role, and extend to cover the full range of activities for the proposed Contract.

45.2 Tenderers must as a minimum include a comment on each of the items listed (including that of key subcontractors) and on any other issues in respect of this topic that they consider relevant:

- Operational personnel
- Plant and equipment (eg EWP and other means for accessing LEDs at height where use of EWP not possible, transporting of LEDs to site, etc.). Refer also Appendix Seven – Tenderer's Plant.
- Depot facilities, including storage areas for secure, protected storage and handling of 1500 LEDs and 1500 LPCs (more or less) at a time
- Workshop facilities for preparing LEDs and recording data related to preparing the LEDs
- Location and availability of resources
- Testing/ certifying
- Communications systems

- Backup resources
- Other specific to the Works (if any)

46 Methodology

46.1 Tenderers shall describe the methodology they propose to carry out the Contract Works on time, and to the standards and requirements specified in this RFT. The following list is not exhaustive, and Tenderers should include any further items they consider worthy of mention. As a minimum, Tenderers shall describe/provide their:

- Overall approach to the planning, co-ordinating, delivery and review of the Works
- Proposed Sequencing Plan (Refer to Appendix Fourteen – Volume Four – Appendices and Specifications – Section 6 Technical Specifications)
- Proposed programme
- Proposed methodology for assessing the sites
- Proposed methodology for ordering, handling, storage, preparing and testing the LEDs and managing/controlling their assignment/release prior to installation on site
- Proposed methodology for installing LEDs and LPCs
- Specific quality control procedures for the Works including outline inspection and test plans, with hold points;
- Specific safety and traffic management procedures to be carried out for the Works, including any special notifications/signage required to inform the public of disruptions resulting from the Works;
- Collaboration, innovation and problem solving.

46.2 Tenderers shall indicate in their Cover Letter, their expected continuous Working Day (combined shifts) installation rate, noting that installation requires both site assessments and LED preparation to be also completed, and noting the variability of conditions associated with LED installation in Wellington. The Engineer will use Installers' indicative daily productivity rates and the quantity of LEDs and LPCs on hand and/or in transit when deciding on date of Possession of Site and number of shorting caps to provide.

Work commitments

46.3 Tenderers should indicate whether they or any of their key subcontractors have any existing or anticipated work commitments which might impact on the performance of the Works contemplated by this RFT. (Please also complete Appendix Nine).

46.4 Where capacity to manage the Works contemplated by this tender is an issue, Tenderers should comment on how they will meet the project management demands and timing requirements of the Works.

47 Subcontractors

47.1 Tenderers are to complete Appendix Six setting out the details of any subcontractors the Tenderer proposes to engage on the Works.

47.2 The Council requires detail relating to the Tenderer's key subcontractors (Relevant Experience, Relevant Skills and Resources). Tenderers may attach a separate addendum (within the specified page limit) covering each key subcontractor separately if preferred.

48 Insurance

48.1 Tenderers are to provide details of their insurance policies (use Appendix Ten).

Tenderers are to confirm in a covering letter:

- That their insurance policies meet the requirements of the Contract;
- That there are no excepted risks and/or exclusions in their respective insurance policies that will reduce the cover to the Council for the Works;
- The amount of the deductibles for all insurances required;
- That their insurance policies will be kept current for the duration of the Contract.

49 Tender Price and Added Value

49.1 Tenderers must:

(a) Complete the Price Form in Appendix Two and the Schedule of Prices in Appendix Three.

(b) Provide a total Contract Price (including any subcontractors' costs – to be incorporated in the tendered rates) in the Price Form. Prices shown in the Price Form must be in NZ dollars and exclusive of GST.

(c) Ensure that all rates are specified.

Note: All pricing information must be placed in Envelope 2.

50 Proposed Contract

50.1 The proposed Form of the Contract is attached in Appendix Fourteen. The Council may negotiate outside this Contract Form during any negotiation phase. The Council may for the purposes of any negotiations amend the proposed Contract.

51 Assumptions

51.1 Tenderers are asked to detail their assumptions made about:

(a) the Council's requirements for the Works required under this RFT document;

(b) all other relevant matters.

Appendices

Appendix One - Tender Form

Tenderers shall complete the following form
(To be included in Envelope 1)

To: **Wellington City Council**

We attach our tender for WCC Accelerated Rollout of LEDs and CMS, Contract 114.00##

This is a conforming tender: Yes/No

This is an alternative tender: Yes/No

The party* submitting this tender is: (* if a joint tender state all parties)			
The primary contact person name and details			
Name:			
Position:			
Phone:			
Mobile:			
Fax:			
Email:			
Postal address:			
Physical address:			
We acknowledge receipt of notices numbered		to	
We agree that this tender shall remain binding on us and may be accepted by the Council at any time prior to the expiry of the Tender Validity Period specified in the RFT being 60 Calendar Days.			
Checklist:			
• Read, understood and complied with this RFT	Yes / No		
• Provided all information required under Section D	Yes / No		
• Provided the requested number of tender copies (Refer Section A clause 5)	Yes / No		
• Completed the Price Form (Appendix Two)	Yes / No		
• Completed this Tender Form (Appendix One)	Yes / No		
Dated			
Signed by		(signature)	
		(print name)	
	for and on behalf of the submitting party (or parties if joint tender)		

Appendix Two - Price Form

Tenderers shall complete the following form

(To be included in Envelope 2)

Tender for WCC Accelerated Rollout of LEDs and CMS Contract 114.0##

We/I have examined the tender documents for Contract 114.0## as above ('the Contract Works') dated 25 July 2017.

☐ This is a conforming tender

☐ This is an alternative tender

(Tick one)

We/I offer to complete, handover and remedy defects in the Contract Works in accordance with the Tender Documents and our tender, for the sum of_____

_____

_____

$_____, excluding GST or such amount as shall be determined in accordance with the Contract Documents.

Our Tender Price has been transferred from the completed Schedule of Prices (Appendix Three) to this Price Form. Envelope 2 includes all required pricing information, including the Schedule of Prices

Tenderer:_____

_____

_____

Date:_____

Signature:_____

Appendix Three - Schedule of Prices

A copy of the Schedule of Prices is to be completed as part of the tender.

Tenderer's hardcopies of their completed Schedule of Prices may be submitted in Envelope 2 as a Windows printout, provided that in addition to the Tenderer's rates and amounts, printouts include all information shown on the Schedule, including the Tenderer's name, authorised signature and date.

				New Zealand Dollars		
Item	Description	Unit	Quantity	Rate	Amount	Total Amount (NZ$)
1	Site assessment, LED preparation and installation	ea	4000			
	TOTAL (excl G.S.T.)				Total in $NZ	

Tenderer's Name: …….. Date: ……...

Authorised Signature: …….....

Appendix Four - Tender Tag/Qualifications Schedule (Price)

Tag No.	Tag Description	Outcome/ Consequence of Tag	Price for tagged item (where the tag has a price consequence)	Price for the item/tagged matter if the tag is withdrawn/rejected

Appendix Four - Tender Tag/Qualifications Schedule (Non-Price)

Tag No.	Tag Description	Outcome/ Consequence of Tag

Appendix Five - Personnel Form

If our tender is accepted, we propose to employ the following personnel for the Works.

(Please detail personnel to be provided by each subcontractor separately)

(Please state not applicable - N/A - if a particular "personnel" is not required for the Works)

CONTRACTOR		
KEY PERSONNEL		
Position	**Name**	**% allocated to Contract**
Contract Manager		
Contractor's Representative		
Project Manager		
Site Assessor		
Workshop Technician		
Electrician (crew 1)		
Electrician (crew 2)		
Supervisor/Foreman		
Customer Services and Communication Manager		
Temporary Traffic Control Manager		
Safety Manager		
Quality Manager		
Other key staff (plant operators, etc.)		

GENERAL PERSONNEL (By Category)	Numbers	% allocated to this Contract

SUB CONTRACTORS		
KEY PERSONNEL		
Position	Name	% allocated to Contract
Manager		
Supervisor		
Other key staff		

Appendix Six – Subcontractor's Form

Tenders shall complete the following table detailing their proposed subcontractors and suppliers. Tenderers shall either confirm they will be using their own resources and if not, shall provide the names and relevant details of their proposed subcontractors and suppliers for key parts of the Works

Complete list of proposed subcontractors:

ACTIVITY	SUBCONTRACTOR	EXTENT OF WORK TO BE CARRIED OUT

Appendix Seven - Tenderer's Plant

Plant the Tenderer proposes to use in the Contract if the tender is accepted:-

CONTRACTOR			
KEY PLANT			
Item Description	**Make, Model and Capacity**	**Owned or Sourced**	**Availability**

Plant the Tenderer's subcontractors propose to use in the Contract if the tender is accepted:-

SUBCONTRACTOR			
KEY PLANT			
Item Description	**Make, Model and Capacity**	**Owned or Sourced**	**Availability**

Appendix Eight - Health and Safety Information

CONTRACT for WCC Accelerated Rollout of LEDs and CMS Contract 114.0##

Occupational Health & Safety (OHS)				**Long Version**
Health & Safety Management:				
Do you have a written health & safety policy? If yes please provide a copy	**Yes**		**No**	
Is the policy signed by the managing director (or equivalent)?	**Yes**		**No**	
How is the policy communicated to employees?				
Do you hold ***ACC WSMP, ACC WSD or AS/NZS 4801:2001 (Occupational Health and Safety Management Scheme) (or equivalent), OHSAS 18001, ISO 14001:2004, ECO Warranty; 2008, Enviromark, Envirostep*** or other certificates for OHS?	**Yes**		**No**	
If yes provide details:				
Do you have membership in a health and safety organisation?	**Yes**		**No**	
If yes provide details:				
Do you have accreditation in ACC injury prevention programme?	**Yes**		**No**	
If yes provide details:				
Do you have any health and safety accreditations?	**Yes**		**No**	
If yes provide details including details of the level of accreditation held:				
Do you have an employee participation scheme for dealing with health & safety issues?	**Yes**		**No**	
If yes provide details:				
Working practices:				
Name the senior manager in charge of health &safety:				
Is formal safety training given to employees and subcontractors?	**Yes**		**No**	

Occupational Health & Safety (OHS)					Long Version
Do the people carrying out the work have the appropriate training, experience and qualifications (including certificates of competency where required) to safely carry out the tasks and use of equipment?	**Yes**		**No**		
Is there OHS induction or training for new employees and subcontractors?	**Yes**		**No**		
Do you have employee health and safety representatives?	**Yes**		**No**		
If yes provide details of their qualification and experience:					
Provide details of how work is supervised and who is responsible for supervision:					
Records: Which of the following safety records do you maintain?					
- Accident Register (as required by Health & Safety at Work Act)?	**Yes**		**No**		
- Risk Register?	**Yes**		**No**		
- Risk information (such as Safety Data Sheets)?	**Yes**		**No**		
Are you able to provide records (for the last 5 years) for the following information?					
- Fatalities?	**Yes**		**No**		
- Lost days for injuries to workers?	**Yes**		**No**		
- Accidents resulting in environmental damage or pollution?	**Yes**		**No**		
- OHS related notice/warning/fine/prosecution?	**Yes**		**No**		
History: Have you received OHS award/s?	**Yes**		**No**		
If yes provide details:					
Have you had any prohibition, infringement, improvement notices or written warnings from a regulatory body in the last 5 years?	**Yes**		**No**		
If yes provide details of the reason for the prohibition, infringement, improvement notices					

or written warnings and what steps were taken to address the issues raised.				
Have you been fined or prosecuted for any health and safety breaches in the last 5 years?	**Yes**		**No**	
If yes provide details of the reason for the fine or prosecution and what steps were taken to address the issues relating to the prosecution.				
Emergency procedures:				
Do you have an emergency procedures plan?	**Yes**		**No**	
Does the plan identify who is responsible for different procedures?	**Yes**		**No**	
Do staff receive training in the emergency procedures plan?	**Yes**		**No**	
Have emergency drills been carried out in the last 6 months?	**Yes**		**No**	
If yes, how often are drills carried out?				
Hazard assessment:				
Are formal risk assessments carried out and recorded?	**Yes**		**No**	
If yes provide details:				
Where risks are identified is there a system to eliminate or minimise (where elimination is not reasonably practicable) those risks?	**Yes**		**No**	
If yes provide details:				
Are accidents or incidents reviewed for the existence of critical risks?	**Yes**		**No**	
Is there a system for identifying new risks?	**Yes**		**No**	
If yes provide details:				
Are there procedures for eliminating, isolating or minimising risks?	**Yes**		**No**	

Occupational Health & Safety (OHS)					Long Version
If yes provide details:					
Do you have a drug and alcohol policy?	**Yes**		**No**		
If yes provide details:					
Is the Accident Register reviewed for risk assessment?	**Yes**		**No**		
Do you have health and safety checklists or other tools you use to ensure systems are in place and behaviours are being followed?	**Yes**		**No**		
If yes provide details:					
Do you have a health and safety monitoring programme?	**Yes**		**No**		
If yes provide details:					
If required are you able to produce further evidence to attest to the above?	**Yes**		**No**		
Accident investigation:					
Is there always an investigation into any accident that results in harm, or could have resulted in harm?	**Yes**		**No**		
Do investigations include remedial action plans to initiate future prevention?	**Yes**		**No**		
Are the following advised of accidents?	**Yes**		**No**		
- the employees?	**Yes**		**No**		
- health and safety representatives?	**Yes**		**No**		
- WorkSafe (where there is a Notifiable Event)?	**Yes**		**No**		
- the principal (owner of the business)?	**Yes**		**No**		
Describe the responsibilities for notifying specified work and reporting illness or injury:					
Hazardous substances:					
Are key hazardous substances recorded?	**Yes**		**No**		
Are there safety data sheets accessible for hazardous substances?	**Yes**		**No**		

Occupational Health & Safety (OHS)				Long Version
Are test certificates current for required sites?	**Yes**		**No**	
Are there approved handlers for hazardous substances?	**Yes**		**No**	
Are MOSHH assessments carried out and regularly reviewed?	**Yes**		**No**	
List the hazardous substances used in your business:				
Plant & equipment:				
Are plant and equipment regularly inspected, tested, examined and maintained?	**Yes**		**No**	
If yes, do you have records available?	**Yes**		**No**	
Sub-Contractors				
Do you have systems for selecting trained, experienced and qualified sub-contractor(s) to safely carry out the tasks and use of equipment?	**Yes**		**No**	
Do you have systems to ensure all sub-contractors and their employees are inducted prior to commencing work?	**Yes**		**No**	
Do you have systems to monitor the health and safety performance of sub-contractors, i.e. monitoring and/or auditing performance during life of contract?	**Yes**		**No**	
Measuring & improving health & safety:				
Do you have:				
- regular in-house, safety meetings?	**Yes**		**No**	
- regular safety committee meetings?	**Yes**		**No**	
- regular safety inspections or audits	**Yes**		**No**	
- other forms of employee participation in health & safety?	**Yes**		**No**	
Describe how OSH performance is systematically assessed:				
Describe what happens to the results				

of OHS checks, investigations and audits:	
Describe how the principal (business owner) is involved in review processes?	

Appendix Nine - Tenderer's Current Commitments Form

A CURRENT WORK

Current work being carried out by Tenderer at the date of submitting the attached tender.

CLIENT	NAME OF JOB	CONTRACT PRICE (ROUNDED TO NEAREST $50,000)	COMPLETION DATE

B OUTSTANDING TENDERS

All outstanding tenders for which advice is awaited by the Tenderer at the date of submitting the attached tender.

CLIENT	NAME OF JOB	CONTRACT PRICE (ROUNDED TO NEAREST $50,000)	COMPLETION DATE

Appendix Ten - Insurance Details Form

TYPE OF COVER	SUM INSURED	EXCESS	EXPIRY DATE	NAME OF INSURER	POLICY NO.
Public liability					
Motor vehicle public liability					
Construction Insurance					
Contractor's Plant					

Appendix Eleven – Tender Briefing Intent to Respond Form

Not Required

Appendix Twelve – The Council's List of Known Risks and Hazards

The Council's list of significant risks and hazards for roading works is shown below. Tenderers should allow for relevant risks and hazards in their tenders, showing how each is to be controlled. Note that the list may not be complete and it is the Tenderer's responsibility to ensure all significant risks and hazards relating to the Contract Works are identified and controlled:

- Heavy Traffic > 10,000 vpd
- Speeding traffic > 75km/h
- Low speed Traffic < 75km/h
- Visibility of worksite to network users
- Hygiene (litter and refuse handling etc.)
- Contractor’s employees under the influence of drugs and alcohol, or showing traces of drugs or alcohol in their system
- Hazardous chemicals (weed spray, cleaning agents etc.)
- Driver/cyclist/pedestrian behaviour
- Special needs people including children and those with disabilities
- Fall hazard including that for excavations, structures or open manholes
- Tree work (e.g., fallen boughs and branches, fallen trees, use of chainsaws etc.)
- Manual clearing of vegetation on flat ground and on slopes
- Manual lifting and handling of heavy items
- Noise
- Weather (sun, storms, wind, ice)
- Night work
- Maintenance and construction plant and equipment
- Reversing Vehicles
- Hot Bitumen
- Underground/overhead or surface mounted utilities (gas, electricity, telecom, trolley bus lines, 3 waters etc.), particularly in relation to excavations, manoeuvring plant and flail mowing. Note: services may not always be in the location and depth required, or indicated on plans or as marked out.
- Dogs and other animals
- Slope stability during construction
- Work at height (from ladder, cherry picker, elevated platform, suspended cages, scaffolding, abseil access etc.)
- Cranage
- Railway operations

Appendix Thirteen - Marking Sheets

Attributes will be assessed and marked by the Tender Evaluation Team in accordance with the requirements set out in clause 34.2 (Section C) of the Tender Documents.

Appendix Fourteen – Proposed Contract

The General Conditions of Contract are NZS 3910:2013, Conditions of Contract for Building and Civil Engineering Construction, amended as set out in the Special Conditions.

The attached combined volumes 2, 3 and 4 plus any further volumes added during the tender stage comprise the proposed contract.

Transport and Waste Operations Accelerated Rollout of Street Lighting LEDs and CMS Contract 114.0##

Dated 25 July 2017

Volume 2 – Conditions of Contract and Schedules

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Tender and Contract Document Structure

For ease of use, the Tender and Contract Documents comprise eight sections contained in five volumes as follows. This volume is highlighted below:

Volume 1 – Request for Tender
- Section 1 – Request for Tender

Volume 2 – Conditions of Contract
- Section 2 – Conditions of Contract and Schedules
- Section 3 – General Requirements
- Section 4 – Activity Specifications

Volume 3 – Payment
- Section 5 – Schedule of Prices and Basis of Payment

Volume 4 – Specifications and Appendices
- Section 6 – Technical Specifications
- Section 7 – Standard Drawings
- Section 8 – Appendices

Volume 5 – NTTs and Post Tender Correspondence

Introduction

This volume of the Contract contains the following sections:

- Section 2 – Conditions of Contract and Schedules
- Section 3 – General Requirements
- Section 4 – Activity Specifications

Section 2 sets out the Conditions of Contract. The General Conditions of contract are NZS3910:2013 'Conditions of contract for building and civil engineering construction' and Schedules to General Conditions of contract, both amended as set out in this section.

Section 3 sets out the Council's General Requirements for this contract. It covers the Council's requirements in relation to working on the road, code of conduct, and a number of similar requirements that can apply to several areas of the Works.

Section 4 sets out the management activities relating to the various activities under the contract. These are termed Activity Specifications and detail the broad and management requirements relating to each activity. Activity Specifications are supported by the Technical Specifications included in Volume 4.

Table of Contents – Volume 2

Condition of Contract and Specifications

Table of Contents

Delete the Contract Agreement from NZS 3910:2013 and replace with the following:

CONTRACT AGREEMENT

CONTRACT FOR: WCC Street Lighting Accelerated Rollout of LEDs and CMS (*Contract Name)*

CONTRACT NUMBER: 114.0##..... (*Contract Number)*

THIS AGREEMENT is made on ..... 20…

BETWEEN .....(the 'Contractor')

AND WELLINGTON CITY COUNCIL (the 'Principal')

IT IS AGREED as follows:

1. The Contractor shall carry out the obligations imposed on the Contractor by the Contract.
2. The Principal shall pay the Contractor the sum of $..... or such greater or lesser sum as shall become payable under the Contract together with goods and services tax at the times and in the manner provided in the Contract.
3. Each party agrees to the terms and conditions set out in the Contract.
4. THE Contract comprises the following documents:
   (a) This Contract Agreement;
   (b) The notification of acceptance of tender or award of Contract;
   (c) The following:
      (i) post-tender documents (*identify any agreed post-tender documents to be included, for example correspondence that record changes to the documents issued under the RFT/RFP, tender tag schedule noted rejected and agreed tags, all changes to the Specifications and Drawings etc);*
      (ii) Notice to Tenderers (*Give details with dates*):
         i. ……
         ii. ……
         iii. ……
         iv. ……
   (d) Schedule 1: Special Conditions of Contract - Specific Conditions of Contract;
   (e) Schedule 2: Special Conditions of Contract - Other Conditions of Contract;
   (f) The General Conditions of Contract NZS 3910:2013 (including all Schedules stated as forming part of the Contract)
   (g) Specifications issued prior to the Date of Acceptance of Tender;
   (h) The Drawings issued prior to the Date of Acceptance of Tender;
   (i) The Schedule of Prices
   (j) The Contractor's tender dated ……

   The documents comprising the Contract shall be taken as mutually explanatory. Each item above shall prevail over any item appearing lower in the list where any conflict or ambiguity between them arises.

5. This Contract shall constitute the entire agreement between the parties. This Contract supersedes all prior negotiations, representations, and warranties, except so far as the same are expressly in incorporated herein.

Signed on behalf of **Wellington City Council**	
By: _____ Authorised signatory _____ Authorised signatory name _____ Authorised signatory designation	In the presence of: _____ Witness signature _____ Witness name _____ Occupation _____ Address
Signed on behalf of Contractor ……..	
By: _____ Authorised signatory _____ Authorised signatory name _____ Authorised signatory designation	In the presence of: _____ Witness signature _____ Witness name _____ Occupation _____ Address

GENERAL CONDITIONS OF CONTRACT

The **General Conditions of Contract** applicable to this Contract are those set out in:

NZS 3910:2013 "Conditions of contract for building and civil engineering construction" and as amended and scheduled herein.

SCHEDULES TO GENERAL CONDITIONS OF CONTRACT

Schedule 1 – Special Conditions of Contract – Specific Conditions of Contract

Contract for:	WCC Street Lighting Accelerated Rollout of LEDs and CMS Contract 114.0##

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
1.	**INTERPRETATION**	
1.2	**Definitions**	
	The Principal is:	Wellington City Council
	of:	101 Wakefield Street, Wellington
1.2, 10.2	**Separable Portion**	
	• Are there any Separable Portions in this Contract?	No
	• If yes, the Separable Portions are as follows and as further defined in the Contract:	
2.	**THE CONTRACT**	
2.1	**Type of Contract**	
2.1.1	This Contract is a:	
	(a) Lump sum contract governed by 2.2.	☐
	(b) Measure and value contract governed by 2.3.	☒
	(c) Cost reimbursement contract governed by 2.4.	☐
2.4	**Cost reimbursement contract**	
2.4.1	Allowance(s) which are to be added to Net Cost in a cost reimbursement contract or for parts of the Contract Works which are required to be carried out on a cost reimbursement basis: *(If percentages are shown as zero or nil, allowances for overheads and profit are deemed to be included in Net Cost)*	
	• Allowance for On-site Overheads:	NA
	• Allowance for Off-site Overheads and Profit:	NA
2.4.4	Indicative estimates of the Contract Price:	
	Are indicative estimates required?	NA
2.5	**Local authority contracts, contracts in public places, and road contracts**	
2.5.1	Is this Contract a local authority contract to which 2.5.2 applies?	Yes
2.5.3	Is this Contract a contract in a public place to which B1 and B2 of Appendix B apply?	Yes
2.5.4	Is this Contract a road contract to which Appendix B applies?	Yes
	If yes, the allowance under B3 shall be:	20 *(number of Working Days)*
2.6	**Evidence of Contract**	
2.6.2	How is the Contract Agreement to be executed?	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	(a) As stated in 2.6.2.	☒
	(b) In accordance with the following other requirements:	☐ ……
2.7	**Documents prepared by the Engineer or Principal**	
2.7.1	Copies of the Contract shall be supplied without charge to the Contractor in the following electronic form:	PDF
2.8	**Documents prepared by the Contractor**	
2.8.2	Copies of documents referred to in 2.8.2 shall be supplied without charge to the Engineer:	
	• Number of hard copy sets:	1
	• In the following electronic form:	PDF and MS Word
3.	**BONDS**	
3.1	**Contractor's Bond**	
3.1.1	Is a Contractor's Bond required?	Yes
3.1.2	If yes, the amount of the Contractor's Bond shall be: The surety must be a bank registered in New Zealand.	$150,000
3.2	**Principal's Bond**	
3.2.1	Is a Principal's Bond required?	No
4.	**SUBCONTRACTS**	
4.1	**General**	
4.1.4	Key Subcontractors to which 4.1.4 applies are	
	(a) As stated in the Contractor's tender.	☒
	(b) The following:	☐ …… …… ……
4.1.5	A Continuity Guarantee in the form set out at Schedule 17 is required from the following key Subcontractors:	
4.2	**Nominated Subcontractors**	
4.2.1	Are there any Nominated Subcontractors?	No
5.	**GENERAL OBLIGATIONS**	
5.3	**Control of Employees**	
5.3.2	Key personnel to which 5.3.2 applies are:	
	(a) As stated in the Contractor's tender.	☒
	(b) The following:	☐ …… …….. ……
5.4	**Possession of the Site**	
5.4.1	The Contractor shall be given possession of the Site:	
	(a) 10 Working Days after the Date of Acceptance of Tender:	☐

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	(b) On the following date:	☒ Following Acceptance of Tender, 10 Days after the date the Engineer advises the Installers that he is satisfied there are sufficient stocks of LEDs and LPCs landed or about to be landed to satisfy the daily production rate indicated in the Installers' tender submissions.
5.4.3	Limits on the Contractor's right of entry to adjoining properties are:	Subject to agreement of property owners and any conditions applying to right of entry as set out in those agreements
5.5	**Separate Contractors**	
5.5.1	Separate Contractors who may be carrying out work on the Site concurrently with the Contract Works are:	Other contractors appointed to the panel of contractors to jointly undertake the accelerated LED rollout across the city. Various construction project contractors (eg walls renewals) etc. Various road maintenance contractors. The street lighting maintenance contractor.
5.5.2	Are facilities for Separate Contractors required?	No
	If yes, details of facilities required are:	
5.5.2	Will Separate Contractors require possession of the Site or part thereof?	Yes
5.7	**Protection of Persons and Property**	
5.7.8	The health and safety accreditations include:	Other requirements for health and safety set out in the Contract. Refer also to Activity Specification RT 000-002
5.10	**Programme**	
5.10.4	Is the programme required to be a Comprehensive Programme?	No. Refer Activity Specification 000-001 Contract Management and Planning
5.10.4(e)	If yes, other requirements for the Comprehensive Programme are:	
5.10.5	The Comprehensive Programme shall use the following software:	
5.10.6	Updates of the Comprehensive Programme shall be	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	provided at the following intervals:	
5.11	**Compliance with laws**	
5.11.3	Exceptions to the Principal's obligations to obtain licences under 5.11.3 are:	Nil
5.11.4	Exceptions to the Contractor's obligation to give notices and obtain other licences under 5.11.4:	Nil
5.17	**Safety plan**	
5.17.1	Is a Site-specific safety plan required to be prepared by the Contractor?	Yes
	If yes, details of the requirements are set out in:	Refer Appendix B and Activity Specification RT 000-002
5.18	**Quality plan**	
5.18.1	Is a quality plan required to be prepared by the Contractor?	Yes
	If yes, details of the requirements are set out in:	Refer to Activity Specification RT 000-005
5.19	**Traffic management plan**	
5.19.1	Is a traffic management plan required to be prepared by the Contractor?	Yes
	If yes, details of the requirements are set out in:	Refer to Activity Specification RT 000-002
5.20	**As-built drawings and operation and maintenance manuals**	
5.20.1(a)	Are as-built drawings required to be prepared by the Contractor?	Yes
	If yes, details of the requirements are set out in:	Refer to Activity Specification RT 000-019
5.20.1(b)	Are operation and maintenance manuals required to be prepared by the Contractor?	No
	If yes, details of the requirements are set out in:	
5.20.4	Are the as-built drawings required to be in an appropriate form to allow the Principal to update its records (including GIS records):	Yes
5.22	**Environmental compliance plan:**	
5.22.1	Is an environmental compliance plan required to be prepared by the Contractor?	No
	If yes, details of the requirements are set out in:	
6.	**THE ENGINEER**	
6.1	**Appointment of Engineer**	
6.1.2	The Engineer is:	[redacted]
	Address:	Wellington City Council 101 Wakefield St Wellington

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	Phone:	(021) 227 8114
	Facsimile:	
	Whose professional qualification is:	BSc, REA, MNZIS, TMIPENZ
6.3	**Engineer's Representative**	
6.3.1	The Engineer's Representative is:	[redacted]
	Address:	Wellington City Council 101 Wakefield St Wellington
	Phone:	(021) 247 8646
	Facsimile:	
8.	**INSURANCES**	
8.1	**General**	
8.1.1	The party identified below shall arrange the following insurances referred to in the following clauses:	
	8.3 or 8.8 Construction	Contractor
	8.8 Existing structure(s) and contents	Not required
	8.4 Plant	Contractor
	8.5 or 8.9 Public liability	Contractor
	8.5.2 Motor vehicle liability	Contractor
	8.6 Professional indemnity	Not required
8.1.6	The following forces of nature shall be specifically insured under 8.3 or 8.8 as applicable:	
	(a) Landslip	Yes
	(b) Earthquake	Yes
	(c) Tsunami	Yes
	(d) Tornado	Yes
	(e) Cyclone	Yes
	(f) Storm	Yes
	(g) Flood	Yes
	(h) Lightning strike	Yes
	(i) Volcanic activity	Yes
	(j) Hydrothermal activity	Yes
	(k) Geothermal activity	Yes
	Include any other forces of nature required to be insured by the Contractor (or by the Principal as the case may be)	Other than as excluded by clause 8.1.6 in Schedule 1, in addition to the events stated in Schedule 1, the party responsible for the insurance shall provide insurance for all other insurable forces of nature.
8.2.9	**Contractor's Deductibles**	
8.3	Where the Contractor is taking out the Construction	$20,000.00

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	Insurance the maximum deductible is:	
8.4	Where the Contractor is taking out the Plant Insurance the maximum deductible is:	$10,000.00
8.5.1	Where the Contractor is taking out the Public Liability Insurance the deductible is:	$20,000.00
8.5.2	Where the Contractor is taking out the Motor Vehicle Third Party Insurance the deductible is:	$10,000.00
8.6	Where the Contractor is taking out the Professional Indemnity Insurance the deductible is:	[$] *(note only specify if this insurance is required)*
8.3, 8.8	**Construction insurance** *(These items are required to be completed whether the Contractor or the Principal is the insuring party (see 8.1 above))*	
8.3.2, 8.8	The following shall have their respective interests noted in the construction insurance policy:	Wellington City Council
8.3.3, 8.8	Where construction insurance is required *(see 8.1 above),* the amount of insurance to be effected for the Contract Works and Materials shall be for not less than the sum of the Contract Price, after the acceptance of the tender or other offer, plus the following allowances:	
	(a) An allowance for the Cost of demolition, disposal and preparation for replacement work, equal to:	*(select one to apply, (i) or (ii))*
	(i) The amount in the right hand column:	☐*($)*……
	(ii) The percentage in the right hand column of the Contract Price adjusted as above:	☒ *5%*
	(b) An allowance for professional fees including the Cost of clerks of works and inspectors, equal to:	*(select one to apply, (i) or (ii))*
	(i) The amount in the right hand column:	☐*($)*……..
	(ii) The percentage in the right hand column of the Contract Price adjusted as above:	☒ *5%*
	(c) An allowance for items to be incorporated, in the Contract Works, the Cost of which is not included in the Contract Price, equal to:	*(select one to apply, (i) or (ii))*
	(i) The amount in the right hand column:	☐*($)*……
	(ii) The percentage of the Contract Price adjusted as above, stated in the right hand column:	☒ *5%*
	(d) An allowance for an increase in the Contract Price due to Variations equal to:	*(select one to apply, (i) or (ii))*
	(i) The amount in the right hand column:	☐*($)*……..
	(ii) The percentage of the Contract	☒ *5%*

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	Price adjusted as above stated in the right hand column:	
	(e) An allowance for increased construction Costs due to inflation equal to:	*(select one to apply, (i) or (ii))*
	(i) The amount in the right hand column:	☐*($)*……
	(ii) The percentage of the Contract Price adjusted as above, stated in the right hand column:	☒ *5%*
8.4	**Contractor arranged Plant insurance**	
	Where Plant is required to be insured *(see 8.1 above)*:	*(select one to apply, (a) or (b))*
	(a) The Contractor shall insure the following items of Plant on the Site for the amounts stated	☐…….. *(list specific items)*
	(b) The Contractor shall insure each item of Plant on the Site having a current market value of more than:	☒ $50,000
8.5	**Contractor arranged public liability insurance**	
8.5.1	Where required *(see 8.1 above)*, public liability insurance shall be effected by the Contractor for an amount not less than:	(*Select one of the following options)* ☐ $2,000,000 ☒ $5,000,000 ☐ $7,500,000 ☐ $10,000,000
	Such public liability insurance may include sub-limits:	
	• For liability arising out of vibration, weakening or removal of support, of not less than:	*($)*
	• For liability under the Forest and Rural Fires Act 1977, of not less than:	*($)*
8.5.2	Where required *(see 8.1 above)*, motor vehicle third party liability insurance shall be effected for an amount not less than:	(*Select one of the following options)* ☐ $500,000 ☒ $1,000,000
8.6	**Contractor arranged professional indemnity insurance**	
8.6.1	Where required *(see 8.1 above)*, professional indemnity insurance for design by the Contractor shall be effected for an amount not less than:	(*Only relevant where required at 8.1 above)*
	• For any one claim:	*($)*
	• And for an amount in the aggregate of:	*($)*
8.6.2	Sub-limits of liability for design of parts of the Contract Works by Subcontractors shall not be less than:	*(list specific part(s) of Contract Works and applicable $ sub-limits for any one claim and for an amount in the aggregate, or state if not required)*
8.8	**Principal arranged construction insurance** *(refer also to 8.3)*	
	In accordance with 8.7.2, the insurance policy wording title for 8.8.1 and 8.8.2(a), (b), and (c) is:	
	In accordance with 8.7.2, the extraordinary exclusions, conditions, warranties or endorsements	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	to the policy for 8.8.1 and 8.8.2(a), (b), and (c) are:	
8.8.1	Where the Principal is required to effect construction insurance *(see 8.1 above)*:	
	The lead insurer is:	
	Address of lead insurer:	
	The Nominal Deductibles are:	
	• For damage arising out of the Contract Works:	*($)*
	• For other claims:	*($)*
8.8.2(a)	The existing structures are:	
	• The replacement value to be insured is:	*($)*
	• The lead insurer is:	
	• Address of lead insurer:	
	The Nominal Deductibles are:	
	• For damage arising out of the Contract Works:	
	• For other claims:	
8.8.2(b)	Other structures in the vicinity are:	
	• The replacement value to be insured is:	*($)*
	• The lead insurer is:	
	• Address of lead insurer:	
	The Nominal Deductibles are:	
	• For damage arising out of the Contract Works:	
	• For other claims:	
8.8.2(c)	Contents insurance:	
	• The replacement value to be insured is:	*($)*
	• The lead insurer is:	
	• Address of lead insurer:	
	The Nominal Deductibles are:	
	• For damage arising out of the Contract Works:	
	• For other claims:	
8.9	**Principal's option to insure public liability**	
8.9.1	Where required *(see 8.1 above)*, the Principal shall effect public liability insurance for an amount not less than:	*($)*
	The lead insurer is:	
	Address of lead insurer:	
	The Nominal Deductible is:	
	In accordance with 8.7.2:	
	• the policy wording title is:	
	• extraordinary exclusions, conditions, warranties, or endorsements to the policy are:	
8.9.2	Such public liability insurance may include sub-limits for: *(specify as applicable or state 'not applicable')*	
	• Liability arising out of vibration, weakening or removal of support:	*($)*
	• Liability under the Forest and Rural Fires Act 1977:	*($)*
9.	**VARIATIONS**	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
9.3	**Valuation of Variations**	
9.3.9	For On-site Overheads:	*(select one to apply, (a) or (b))*
	(a) The prices and rates in the Schedule of Prices are inclusive of full allowance for On-site Overheads.	☒
	(b) The prices and rates in the Schedule of Prices are exclusive of On-site Overheads.	☐
	Where the rates and prices are exclusive of On-site Overheads (ie where (b) above applies) or where 9.3.7 applies the allowance for On-site Overheads to be added in accordance with 9.3.9 is:	*(select one to apply, (a), (b), (c), or (d))*
	(a) Agreed percentage:	☒ 10%
	(b) As nominated in the Schedule of Prices;	☐
	(c) As nominated in the Contractor's tender;	☐
	(d) A reasonable percentage.	☐
9.3.10	For Off-site Overheads and Profit:	*(select one to apply, (a) or (b))*
	(a) The prices and rates in the Schedule of Prices are inclusive of full allowance for Off-site Overheads and Profit.	☒
	(b) The prices and rates in the Schedule of Prices are exclusive of Off-site Overheads and Profit.	☐
	Where the rates and prices are exclusive of Off-site Overheads and Profit (ie where (b) above applies) or where 9.3.7 applies the allowance for Off-site Overheads and Profit to be added in accordance with 9.3.10 is:	*(select one to apply, (a), (b), (c), or (d))*
	(a) Agreed percentage:	☒10%
	(b) As nominated in the Schedule of Prices;	☐
	(c) As nominated in the Contractor's tender;	☐
	(d) A reasonable percentage.	☐
9.3.11	For time-related Cost, the Working Day rate in compensation for time-related On-site Overheads and Off-site Overheads and Profit in relation to an extension of time to be applied in accordance with 9.3.11 or 10.3.7 is:	*(select one to apply, (a), (b), (c), or (d))*
	(a) Agreed rate per Working Day:	☒ $200.00
	(b) As nominated in the Schedule of Prices.	☐
	(c) As nominated in the Contractor's tender.	☐
	(d) Reasonable compensation.	☐
9.3.15	For processing of Variations, the percentage to be paid in accordance with 9.3.15 is:	NIL – Contractor is not entitled to any amount for processing Variations.
10.	**TIME FOR COMPLETION**	
10.2	**Due Date for Completion**	
10.2.1	The periods to be used for calculating the Due Date for Completion are:	
	(a) For the Contract Works:	140 Working Days

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	(b) For any Separable Portions:	*(number of Working Days)*
10.3.1(b) Appendix B3	Allowance for Inclement Weather:	See 2.5.4 above
10.4	**Practical Completion Certificate**	
10.4.5(a)	Prior to the issue of the Practical Completion Certificate the Contractor shall provide to the Engineer the following:	*(select one to apply, (a), (b) or (c))*
	(a) Producer Statements in the form of Schedule 6 are required.	☒
	(b) Producer Statements as set out in the following parts of the Contract are required:	☐ ……*(state reference)*
	(c) Producer Statements are not required.	☐
10.4.5(b)	Prior to the issue of the Practical Completion Certificate:	*(select one to apply, (a) or (b) - only choose (b) if under 5.20 as-built drawings and operation and maintenance manuals are not required)*
	(a) As-built drawings and operation and maintenance manuals in draft form are required;	☐
	(b) As-built drawings and operation and maintenance manuals in draft form are not required.	☒
10.4.5(c)	Prior to the issue of the Practical Completion Certificate the Contractor shall provide to the Engineer the following additional documents and information:	*Check that this does not conflict with 11.3.2(c)* *List any other documents and information required to be provided prior to Practical Completion)* Any compliance certificates required under 5.11.9 of Schedule 2.
10.5	**Damages for late completion**	
	NOTE – Where liquidated damages are provided below, the Contractor acknowledges and agrees that the amount stated is a genuine pre-estimate of the likely loss that would result from delay of completion. NOTE – Amounts quoted below are exclusive of GST.	
10.5.1	Liquidated damages shall be applied as follows:	
	• For the Contract Works:	$.....per Working Day
	• For any Separable Portion(s):	$.....per Working Day
10.6	**Bonus for early completion**	
10.6.1	Is a bonus to be payable?	No
	If yes, the bonus for the Contract Works is:	*($ per Working Day)*
	If yes, the bonus for any Separable Portions are:	*($ per Working Day)*
11	**DEFECTS LIABILITY**	
11.1	**Defects Notification Period**	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	The Defects Notification Period shall be: (3 Months unless otherwise stated)	
	• For the Contract Works:	12months
	• For any Separable Portions:	
11.3	**Final Completion Certificate**	
11.3.2(a)	Prior to the issue of the Final Completion Certificate the Contractor shall provide to the Engineer the following:	*(select one to apply, (a), (b) or (c))*
	(a) Producer Statements in the form of Schedule 6 are required.	☐
	(b) Producer Statements as set out in the following parts of the Contract are required:	☐ …… *(state reference)*
	(c) Producer Statements are not required.	☒ As these are required to be provided under 10.4.5(a)
11.3.2(b)	Prior to the issue of the Final Completion Certificate:	*(select one to apply, (a) or (b) - only choose (b) if under 5.20 as-built drawings and operation and maintenance manuals are not required)*
	(a) As-built drawings and operation and maintenance manuals in final form are required;	☒
	(b) As-built drawings and operation and maintenance manuals in final form are not required.	☐
11.3.2(c)	Prior to the issue of the Final Completion Certificate the Contractor shall provide to the Engineer the following additional documents:	*(List – check that this does not conflict with 10.4.5)*
11.5	**Warranties**	
11.5.1		*(select one to apply, (a or (b))*
	(a) No warranties are required;	☒
	(b) The Contractor shall provide warranties as set out in the Contract for the following items of work (or from the following key Subcontractors):	☐ …… *(list items of work/ key Subcontractors for which warranties must be provided)*
11.6	**Guarantees**	
11.6.1, 11.6.2		*(select one to apply, (a) or (b))*
	(a) No guarantees are required;	☒
	(b) The Contractor shall provide the following guarantees in the following form(s):	☐ …….. *(list any guarantees required including in what form)*
12.	**PAYMENTS**	
12.1	**Contractor's payment claims**	
12.1.3(b)(iii)	**Advances for Materials delivered to the Site**	*(select one to apply, (a) or (b))*
	(a) Advances for Materials delivered to the Site but	☒

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
	which have yet to be incorporated in the Contract Works shall not be made:	
	(b) Advances for Materials delivered to the Site but which have yet to be incorporated in the Contract Works shall be made, subject to the following conditions:	☐ …… *(state any conditions)*
12.1.3(b)(iv)	**Advances for Temporary Works or Plant**	*(select one to apply, (a) or (b))*
	(a) Advances for Temporary Works or Plant shall not be made:	☒
	(b) Advances for Temporary Works or Plant shall be made, subject to the following conditions:	☐ …… *(state any conditions)*
	Advances for Materials not yet on Site	*(select one to apply, (a) or (b))*
	(a) Advances for Materials not on Site shall not be made.	☒
	(b) Advances for Materials not yet on Site shall be made, subject to the following conditions:	☐ …….. *(state any conditions – eg a fully executed and delivered Schedule 14 – Agreement for Off-site Materials will generally be required.)*
12.3	**Retention monies**	
12.3.1, 12.3.2	The percentage to be retained from each progress payment and the limit of the total sums retained shall be in accordance with the following:	*(select one to apply, (a) or (b))*
	(a) For the Contract Works, • 10% on the first $200,000, and • 5% on the next $800,000, and • 1.75% on amounts in excess of $1,000,000, and • With a maximum total retention when aggregated of $200,000, and • With a defects liability retention of half the total retention.	☐
	(b) The retention scale in the right hand column:	☐
12.3.3	**Bond in lieu of retentions**	*(select one to apply, (a) or (b))*
	(a) The Contractor may provide a bond in lieu of retentions.	☒ Bond value $150,000
	(b) The Contractor may not provide a bond in lieu of retentions.	☐
12.8	**Cost fluctuations**	
12.8.1		*(select one to apply, (a), (b) or (c))*
	(a) Cost fluctuations shall not be paid:	☒
	(b) Cost fluctuations shall be paid in accordance with Appendix A.	☐
	(c) Cost fluctuations shall be paid in accordance with the method described in:	☐ ……*(reference)*
12.13	**Goods and Services Tax**	

Clause *in General Conditions*	**Title and subject matter**	**Specific condition data** *(Expand cells if required or add a reference to further detail provided in Schedule 2.)*
12.13.2	Payment Schedules provided by the Engineer:	*(select one to apply, (a), or (b))*
	(a) Shall not be in the form of a GST Invoice, and the Contractor shall, upon receipt of the Engineer's Payment Schedule, issue to the Engineer and copy to the Principal, a GST Invoice for the scheduled amount.	☐
	(b) Shall be in the form of a buyer created GST Invoice, and the parties agree not to issue any other GST Invoice for items covered by the Payment Schedule.	☒
13.	**DISPUTES**	
13.4	**Arbitration**	
13.4.3	If required, the arbitrator shall be nominated by the following Person:	President of the Arbitrators and Mediations Institute of New Zealand
15.	**SERVICE OF NOTICES**	
15.1.2	For the purpose of service of written notice:	
	(a) The address of the Principal is:	
	Postal address:	PO Box 2199, Wellington 6140
	Delivery address:	101 Wakefield Street, Wellington
	Mark for the attention of:	
	Email address:	
	Other agreed means of electronic communication and address detail:	
	(b) The address of the Contractor is:	
	Postal address:	*(insert address)*
	Delivery address:	*(insert address)*
	Mark for the attention of:	*(name)*
	Email address:	*(email)*
	Other agreed means of electronic communication and address detail:	
	(c) The address of the Engineer is:	
	Postal address:	PO Box 2199, Wellington 6140
	Delivery address:	101 Wakefield Street, Wellington
	Mark for the attention of:	[redacted]
	Email address:	*(email)*
	Other agreed means of electronic communication and address detail:	

Schedule 2 – Special Conditions of Contract – Other Conditions of Contract

The General Conditions of Contract, NZS 3910:2013 Conditions of contract for building and civil engineering construction, are amended as set out herein.

(NOTE: Clause numbers refer to clauses in the standard General Conditions. Where an original clause is retained but modified, changes are shown tracked. New clauses are not shown tracked)

SECTION 1 - INTERPRETATION

1.2 Definitions

Insert (where new) or substitute (to replace an existing definition) the following definitions in clause 1.2:

Confidential Information Any information relating to the Principal whatsoever in any form that the Contractor and its personnel, including subcontractors, either directly or indirectly may have or know as a consequence of carrying out the Contract Works. Information shall include but is not limited to information the Contractor and its personnel view or observe on anything relating to the Contract Works or anything it sees in the Principal's premises or in any premises while carrying out the Contract Works but which excludes Confidential Information which:

- is published or otherwise has become part of the public domain other than through any act or omission of the recipient; or
- has been furnished by the recipient by persons other than the Principal (which term in this instance includes persons employed by or acting for the Principal) as a matter of legal right and without restriction on disclosure; or
- was already in the possession of the recipient without restriction on disclosure, or
- is required to be disclosed by any law or in relation to any proceedings or action before any court, tribunal or other competent authority or body, but only to the extent so required.

Contract Area is all road reserve corridors, excluding State Highways, accessways and walkways, within the boundaries of Wellington City Council

HSW Act The Health and Safety at Work Act 2015 and any subsequent Act in amendment or substitution for the same

Panellists The three or more contractors who have been selected through a tender process to complete the accelerated rollout of LED street lights across the city. The Principal expects one contract rate (universal rate) will be agreed to by all panellists. The Engineer will offer subsequent job lots of work to panellists on the basis of each panellists progress on work already assigned to them. Where panellists and the Principal cannot agree on a universal rate, then each panellist's tendered rate will apply to work they complete, however the Principal will set a lower cap for the quantum of work made available to the panellists with the higher tendered rates, which in turn will increase the work available to the panellists with the lower tendered rates.

Probity Event means:

(a) where the Principal considers (acting reasonably) that an inducement or reward has been offered or provided to any employee, agent or representative of the Principal by or on behalf of the Contractor in return for showing or not showing favour or disfavour to any person in relation to this contract;

(b) committing any offence under any laws creating offences in respect of fraudulent acts;

(c) defrauding or attempting to defraud or conspiring to defraud the Principal; or

(d) an event, matter or thing for which the Contractor is responsible that in the opinion of the Principal (acting reasonably) is or is likely to have a material adverse effect on the reputation of the Principal.

Project Engineers means those parties nominated under the Contract Documents as project engineers for different parts of the Contract Works who will assist the Engineer's Representative under the Contract

RAMM means the road assessment and maintenance management electronic system through which this contract is primarily managed

RAMM Claim Line means a contract schedule item within a RAMM Dispatch. For a claim to be made under the contract, the Contractor must update the status of all RAMM Claim Lines of a RAMM Dispatch to 'Presented'

RAMM Dispatch means an order for the carrying out of the works that is approved by the Principal.

Site means any part of the Contract Area as is required from time to time to carry out the Contract Works and means the land ~~and~~ or other ~~places~~ areas whether on or over or under ~~which~~ the surface of the Contract Area which the Contract Works are to be carried out together with any other places made available to the Contractor by the Principal conditionally or unconditionally for the purposes of the Contract as set out in the Contract Documents or as shall otherwise be agreed in writing by the Principal.

SECTION 2 - THE CONTRACT

2.3.4

Delete clause 2.3.4 and replace with the following clause:

Any quantities given in the Schedule of Prices are provided for the purpose of evaluation of tenders and are only indicative of the quantities of work required for the Contract Works.

Add a new clause 2.3.6 as follows:

2.3.6

Non-Compliance Reports (NCRs)

NCRs are a tool to assist the Engineer or the Engineer's Representatives, and the Contractor monitor the Contractor's compliance with the Specifications.

Should the Engineer or Engineer's Representative, identify an action, response or output which does not comply with the contract, or a lack of action, response or output or a series of actions, inactions, responses or outputs required by the contract, the Engineer may issue the Contractor with an NCR. This summarises the details of the identified non-compliance, or series of non-compliances.

The Contractor shall acknowledge the issue of an NCR and may request the Engineer within five Days of the receipt of an NCR to:-

- Reconsider the issue of the NCR
- Reconsider the rating assigned on the NCR

In each such case, the Contractor is required to provide documented evidence to support this request. Failure to provide such documented evidence may result in no reconsideration of individual NCRs.

Information from NCRs will be collated as a data source for performance assessment, and may influence the Engineer's subsequent allocation of job lots amongst panellists.

2.7.3

Amend clause 2.7.3 as follows:

The General Conditions shall not be varied or modified by the Drawings or the Specifications or the Schedule of Prices unless the change is described in, or clearly identified by reference in, the Special Conditions, or by an express provision in any correspondence which has been identified as a Contract document. ~~The documents comprising the Contract shall in all other respects be taken as mutually explanatory. Ambiguities or omissions shall not invalidate the contract.~~ The Contract shall be taken as mutually explanatory, provided that in the event of ambiguity or conflict between any of the documents comprising the Contract, the order of precedence of the Contract documents shall be as stated in the Contract Agreement.

SECTION 3 - BONDS

3.1.6

Amend clause 3.1.6 as follows:

The Contractor's Bond may not be called up if:

(a) The Contractor has carried out and fulfilled all the obligations of the Contractor under the Contract ~~up to Practical Completion~~ up to the date of issue of the Practical Completion Certificate;

(b) The Contractor has paid to the Principal any damages sustained by the Principal for all defaults by the Contractor ~~up to Practical Completion~~ up to the date of issue of the Practical Completion Certificate or the termination of the Contract; or

(c) A Practical Completion Certificate has been issued for the whole of the Contract Works in accordance with 10.4.

3.1.9 Delete clause 3.1.9

SECTION 4 - SUBCONTRACTS

Amend clause 4.1.3 as follows:

4.1.3

The subcontracting of any of the Contract Works shall not relieve the Contractor from any liability or obligation under the Contract and the Contractor shall be responsible for the acts, defaults and neglects of any Subcontractor or Subcontractor's agents, employees or consultants as fully as if they were the acts, defaults and neglects of the Contractor or the Contractor's agents, employees or consultants.

4.1.4

Add a new clause 4.1.4

The Contractor must engage the key Subcontractors listed in the Special Conditions for the works stated in the Contractor's tender or in the Special Conditions. The Contractor shall not terminate any such engagement or in any other way replace the named Subcontractor without the prior written consent of the Engineer whose consent shall not be unreasonably withheld. Such key Subcontractors shall not be Nominated Subcontractors.

4.1.5

Add a new clause 4.1.5

The Contractor shall, promptly upon execution of any key subcontract named in the Special Conditions, procure from the key Subcontractor a continuity guarantee in favour of the Principal in the form set out in Schedule 17. No payment otherwise due under the Contract shall become payable until the key Subcontractor has executed the continuity guarantee and the Contractor has delivered the continuity guarantee to the Principal.

SECTION 5 - GENERAL OBLIGATIONS

5.1.6

Delete clause 5.1.6 and replace with the following:

The Principal makes no warranty as to the sufficiency or accuracy of information provided by the Principal, or by the Engineer or other party on behalf of the Principal on the physical conditions relevant to the Contract Works. The Contractor shall be responsible for the interpretation of all such information for the purposes of the Contract Works.

5.3.2

Number the existing "5.3.1" and add new 5.3.2

The Contractor must employ the key personnel named in the Special Conditions in the positions nominated in the Contractor's tender or in the Special Conditions. The Contractor shall not remove any such key personnel from their stated position without the prior written consent of the Engineer whose consent shall not be unreasonably withheld.

5.4.1

Delete clause 5.4.1 and replace with the following clause:

Following the Date of Commencement, the Principal shall give the Contractor occupancy of the Site on the approval of a RAMM Dispatch subject in all instances to the Contractor having complied with the Contractor's obligations under clauses 5.17, 5.18, 5.19, 8.2.5, and 8.7.5 provided that where occupancy of the Site is given prior to the Contractor complying with clause 5.17, 5.18, 5.19, 8.2.5, and 8.7.5 that shall not be a waiver of the Contractor's obligations under that clause.

5.4.3

Amend clause 5.4.3 as follows:

The Principal shall obtain authority for the Contractor to have the reasonable right of entry upon and do any act upon any adjoining property as is set out in the Contract. ~~as may be necessary for the carrying out of the Contract Works.~~ Such access may be limited by the Special Conditions and the Contract. Any Costs involved in obtaining such right shall be borne by the Principal. The Contractor shall procure for itself, at its own Cost, the use of or appropriate rights in respect of or any other property which it may choose to use for the carrying out the Contract Works.

5.5.2

Amend clause 5.5.2 as follows:

Where the Principal arranges for work to be carried out by Separate Contractors under 5.5.1, the Principal may require such Separate Contractors to have possession of the Site or portions of the Site as set out in the Special Conditions. The Contractor shall afford all reasonable facilities for Separate Contractors in accordance with the instructions of the Engineer provided that the requirement of such facilities has been described in the Special Conditions. If the Contractor suffers delay in the completion of the Contract Works or incurs additional Cost arising from the activity of Separate Contractors which is not otherwise provided for in the Contract, then the effect of that activity shall be treated as if it was a Variation.

5.5.3

Add a new clause 5.5.3 as follows:

The parties acknowledge that independent third parties including utility operators, whether working with specific permission from the Principal and/or the Engineer or not, are not Separate Contractors under this Contract. These third parties may undertake works, which are similar, or the same as the Contract Works and where such work is required as a consequence of the actions and/or omissions of the third party the Contractor is not entitled to make any claim in relation to the activities or works to be undertaken by such third parties.

5.7.1

Amend clause 5.7.1 as follows:

So far as the Site, Materials and the Contract Works are under the Contractor's management or control, the Contractor shall ensure, so far as is reasonably practicable, that the Site, Materials and Contract Works, including the means of entering, exiting and egress through the Site are without risks to the health and safety of any ~~take all reasonable steps to keep them in an orderly state and in such a condition as to avoid danger to~~ Persons ~~and property.~~ Where there is more than one Person on Site who has a duty under the HSW Act, the Contractor will ensure that they co-ordinate and consult with those other Persons in respect of the above duties and ensure that any hazards on Site (including entry and exit areas and egress through the Site) are eliminated or isolated and that the Site is secured against unauthorised access prior to leaving the Site.

5.7.2

Delete clause 5.7.2 and replace with:

The Contractor shall ensure, so far as is reasonably practicable:

(a) the health and safety of any employees or Subcontractors involved in carrying out the Contract Works; and

(b) that the health and safety of any other Persons is not put at risk from the carrying out of the Contract Works.

5.7.3

Delete clause 5.7.3 and replace with:

Without limiting the above 5.7.1 and 5.7.2, the Contractor shall ensure, as far as is reasonably practicable:

(a) the provision and maintenance of a work environment that is without risks to health and safety;

(b) the provision and maintenance of safe Materials, Plant, Temporary Works, and all systems of working;

(c) the safe use, handling and storage of Materials, Plant, and Temporary Works;

(d) the provision of adequate facilities for the welfare of employees and Subcontractors in carrying out the Contract Works, including ensuring access to those facilities;

(e) the provision of any information, training, instruction, or supervision that is necessary to protect all employees, Subcontractors and any other Persons from risks to their health and safety arising from the Contract Works; and

(f) that the health and safety of employees and Subcontractors and the conditions at the Site and the Contract Works are monitored for the purpose of preventing injury or illness of employees or Subcontractors arising from the carrying out of the Contract Works.

5.7.4

Delete clause 5.7.4 and replace with:

The Contractor shall:

(a) Keep a record of all deaths, injuries, illnesses and incidents which are required by law to be notified to a public authority ("Notifiable Events") for at least 5 years from the date on which notice of the relevant event is given to the public authority;

(b) As soon as possible after becoming aware that a Notifiable Event arising out of the carrying out of the Contract Works has occurred, ensure that the relevant public authority is notified of the event as required under the HSW Act; and

(c) So far as the Site and the Contract Works at which any Notifiable Event has occurred are under the Contractor's management or control, take all reasonable steps to ensure that the Site or the Contract Works where the Notifiable Event occurred is not disturbed until authorised by the relevant public authority.

The Contractor shall give to the Principal through the Engineer a copy of any notice which the Contractor is required to make to a public authority on any Notifiable Event which is associated with the carrying out of the Contract.

5.7.8

Add a new clause 5.7.8 as follows:

The Contractor will comply with its and shall ensure that all Subcontractors comply with their obligations under the HSW Act, all regulations made under the HSW Act, all approved codes of practice under the HSW Act and with any particular requirements set out in the Specifications. The Contractor shall hold health and safety accreditations which have been approved by the Principal and which satisfy any national management system standards stated in the Special Conditions. The Contractor will also comply with the requirements of Appendix C and with any particular health and safety requirements particular to the Contract Works as set out in the Specifications. Where there is any conflict or ambiguity between Appendix C and the health and safety requirements in the Specifications Appendix C shall prevail.

5.7.9

Add a new clause 5.7.9 as follows:

The Contractor shall provide all watching and provide, erect, maintain and when no longer required remove all barricades, fencing, temporary roadways and footpaths, signs, and lighting necessary for the effective protection of property, for traffic, and for the safety of persons.

5.7.10

Add a new clause 5.7.10 as follows:

The Contractor acknowledges that it has allowed for the requirements of this Contract in relation to health and safety both as to inclusion in the Contract Price and the programme. The additional Costs to the Principal for Engineer or other attendances arising out of a breach by the Contractor of its obligations under the health and safety requirements of this Contract shall be payable by the Contractor.

5.7.11

Add a new clause 5.7.11 as follows:

The Contractor shall, so far as is reasonably practicable, engage with employees and Subcontractors involved in carrying out the Contract Works in relation to health and safety matters concerning the Site or the Contract Works. The Contractor shall have practices in place that provide reasonable opportunities for employees and Subcontractors involved in the carrying out the Contract Works to participate effectively in improving health and safety in respect of the Site and the Contract Works on an ongoing basis.

5.7.12

Add a new clause 5.7.12 as follows:

If during the term of the Contract the Engineer considers the Contractor is:

(a) not conducting the Contract Works in compliance with the Site-specific safety plan, relevant legislation and regulations, applicable codes of practice or standards, or any other requirements for health and safety set out in the Contract; or

(b) conducting the Contract Works in such a way as to endanger the health and safety of the Contractor’s workers or Subcontractors' workers, or any other person;

the Engineer may instruct the Contractor to suspend the Contract Works until the Contractor has rectified its failure to comply with its obligations to the satisfaction of the Engineer.

5.7.13

Add a new clause 5.7.13 as follows:

The Contractor shall hold health and safety accreditations which have been approved by the Principal and which satisfy any national management system standards notified by the Principal.

5.7.14

Add a new clause 5.7.14 as follows:

The Contractor shall comply with any other requirements for health and safety set out in Appendix B and any particular health and safety requirements particular to the Contract Works as set out in the Specifications. Where there is any conflict or ambiguity between Appendix B and the health and safety requirements in the Specifications Appendix B shall prevail.

5.7.15

Add a new clause 5.7.15 as follows:

Where required by the Special Conditions, the Contractor shall provide to the Principal through the Engineer a monthly health and safety report, which meets the requirements for monthly health and safety reports set out in the Contract including the information as required by the Contract. The format and content of the monthly health and safety reports shall be detailed in the Contractor's Site-specific safety plan.

5.7.16

Add a new clause 5.7.16 as follows:

The Contractor shall take all reasonable steps to avoid nuisance and prevent damage to property.

5.11.7

Amend clause 5.11.7 as follows:

In respect of:

(a) Licences for which the Principal is responsible under 5.11.3 and 5.11.4; or

(b) Conditions affecting the design (other than design for which the Contractor is responsible for) or Specifications provided in the Contract or in a Variation,

if compliance with the Engineer's instructions under 5.11.6 causes delay in the completion of the Contract Works or additional Cost to the Contractor which in either case the Contractor could not reasonably have foreseen when tendering, the compliance shall be treated as a Variation.

5.11.9

Amend clause 5.11.9 as follows:

Before making application for any ~~Final Completion Certificate~~ Practical Completion Certificate, the Contractor shall deliver to the Engineer ~~All Producer Statements required to be provided by the Contractor under 11.3.2~~ 10.4.5~~; and~~

~~A~~any compliance certificates for which the Contractor is responsible under 5.11.3 and 5.11.4.

5.11.11

Add a new clause 5.11.11 as follows:

Except where the Contractor is obliged to do something or not to do something under the Contract or to use a Material, substance or process as specified, the Contractor warrants to the Principal that the Contractor shall not do anything or omit to do anything, or use materials, substances or processes which:

(a) would or could discharge a contaminant into the environment that is not in compliance with applicable resource consents; or would cause the total emission of noise from the Site to exceed prescribed boundary noise levels; or that would or could cause any adverse effect on the environment; or

(b) is a breach of any duty or obligation of the Contractor under the Resource Management Act 1991 (RMA); or

(c) does or is likely to give rise to the issue of an abatement notice, enforcement proceedings or an excessive noise direction under the RMA against the Principal, Contractor or any Subcontractor.

5.13.1

Amend clause 5.13.1 as follows:

The ~~Principal~~ Contractor shall arrange for the searching of records to determine the existence and position of pipes, cables and other utilities on or about the Site, and all such information obtained by the Contractor as a result of such searches in relation to the existence and position of such utilities shall be provided to the Principal. ~~the position of such utilities shall be indicated in the Contract Documents as accurately as the information available permits.~~

For the purposes of this clause 5.13, the term "utilities" shall include any cadastral survey mark, as defined in the Cadastral Survey Act 2002, and which at any time have been set in or on the ground for the purposes of survey.

5.13.4

Delete clause 5.13.4 and replace with:

Where a utility is not indicated in or is not substantially in the position indicated in the records, the Contractor will advise the Principal so that the records can be altered accordingly.

5.20.3

Amend clause 5.20.3 as follows

As-built ~~drawings~~ and ~~operation and maintenance manuals~~ installation records shall be submitted to the Engineer as follows:

(a) Prior to updating a RAMM Claim Line to "Presented" ~~Prior to Practical Completion~~ the Contractor shall submit to the Engineer the ~~draft~~ as-built ~~drawings~~ and ~~operation and maintenance~~ installation ~~manuals~~ records relating to that RAMM Claim Line as set out in Schedule 1 of the General Conditions. ~~This documentation may be prepared in draft form but shall be sufficient for the Principal to operate, maintain, adjust, and reassemble the Contract Works (except for the Temporary Works). The Contractor shall give advice and assistance to the Principal and Engineer until the as-built drawings and operation and maintenance manuals have received the Engineer's consent~~;

(b) ~~Prior to the end of the Defects Notification Period, the Contractor shall submit to the Engineer for his or her consent the as-built drawings and operation and maintenance manuals prepared in final form sufficient for the Principal to operate, maintain, adjust, and reassemble the Contract Works (except for the Temporary Works). The Engineer's consent shall not be unreasonably withheld~~ The Engineer will review the as-built and installation records submitted and progress for payment only those claims for which records are complete and accurate.

~~(c) The Engineer shall notify the Contractor whether or not he or she consents to such as-built drawings and operation and maintenance manuals. Where the Engineer does not consent, the notice shall include the Engineer's reasons for not giving consent;~~

~~(d) Once the Contractor has prepared the final as-built drawings and operation and maintenance manuals which receive the consent of the Engineer, the Contractor shall supply the Engineer with three sets of the documentation.~~

5.20.4

Add new clause 5.20.4

Where required by the Special Conditions, the documents and information required to be provided by the Contractor under 5.20 shall be in sufficient detail and in a form appropriate to allow the Principal to accurately update the Principal's records, including Geographical Information System (GIS) records.

5.21.1

Amend clause 5.21.1 as follows:

The Contractor and the Engineer shall each notify the other in writing as soon as either of them becomes aware of any matter which is likely to:

(a) Materially alter the Contract Price;

(b) Materially delay completion of the Contract Works or any Separable Portion; or

(c) Result in a breach of a statutory duty in connection with the Contract Works.

5.22

Add new clause 5.22

5.22 Environmental compliance plan

5.22.1 Where required by the Special Conditions, the Contractor shall prepare and submit to the Engineer an environmental compliance plan for the execution of the Contract Works.

5.22.2 The environmental compliance plan shall address the means by which the Contractor intends to meet its obligations under 5.11 and any other requirements for environmental compliance set out in the Contract or in any licences obtained or to be obtained by the Principal or the Contractor under 5.11.

5.22.3 Within 5 Working Days of receipt of the Contractor's environmental compliance plan, or revised environmental compliance plan, the Engineer shall notify the Contractor in writing whether or not he or she accepts the plan. Such acceptance shall not be unreasonably withheld. Where the Engineer does not accept the plan, the notice shall include the Engineer's reasons, and the Contractor shall submit a revised environmental compliance plan.

5.22.4 The Contractor shall not commence any part of the Contract Works unless the Engineer has accepted the environmental compliance plan or revised environmental compliance plan.

5.22.5 Compliance with the environmental compliance plan shall not relieve the Contractor from any of its duties, obligations, and liabilities under the Contract.

5.23

Add a new clause 5.23 as follows:

5.23 Intellectual Property

Intellectual property prepared or created by the Contractor in carrying out the Works ("New Intellectual Property") shall be jointly owned by the Principal and the Contractor. The Principal and the Contractor hereby grant to the other an unrestricted royalty-free licence in perpetuity to copy or use New Intellectual Property. Intellectual property owned by a Party prior to Date of Commencement and intellectual property created by a Party independently of this Contract remains property of that Party. The ownership of data and factual information collected by the Principal and paid for by the Principal shall, after payment by the Principal, lie with the Principal. The Contractor does not warrant the suitability of New Intellectual Property for any purpose other than the Works or any other use stated in the Contract.

SECTION 8 - INSURANCE

8.2.9

Add a new clause 8.2.9 as follows:

The deductibles for the respective insurances under clause 8.3, 8.4, 8.5 and 8.6 shall be as set out in the Special Conditions.

8.3.3

Amend clause 8.3.3 as follows:

The sum insured shall be not less than the total of the Contract Price and the sums or percentage stated in the Special Conditions in respect of:

(a) The Cost of demolition, disposal, and preparation for replacement works;

(b) Professional fees, including the Cost of clerks of works and inspectors;

(c) The value of items incorporated or to be incorporated in the Contract Works the Cost of which is not included in the Contract Price;

(d) An allowance for an increase in the Contract Price due to Variations; and

(e) An allowance for increased construction Costs due to inflation, not already provided for in the Contract Price, for the reconstruction of the Contract Works if they were to sustain a significant and/or total loss at any time during the period of insurance.

SECTION 9 - VARIATIONS

9.1.1

Amend clause 9.1.1 as follows:

The Engineer may order any Variations to the Contract Works within the scope of the Contract which:

(a) Increase or decrease the quantity of any work;

(b) Omit any work whether or not any such work omitted is subsequently carried out by a Separate Contractor or by the Principal itself;

(c) Change the character or quality of any Material or work;

(d) Require additional work to be done;

(e) Change the level, line, position, or dimensions of any part of the Contract Works;

(f) Change the timing and/or sequence in which the Contract Works are to be carried out;

(g) Change the hours within which work may be carried out.

9.2.3

Amend clause 9.2.3 as follows:

Where the Contractor considers any matter which is not described in 9.1 should be treated as a Variation, the Contractor, should within one Month of becoming aware of that matter ~~or~~ as soon as practicable thereafter give written notice to the Engineer to that effect. Any such notice must set out the circumstances that the Contractor claims have arisen and their likely effect with sufficient detail to enable the Engineer to make enquiry into and verify the circumstances and their effect.

9.2.4

Amend clause 9.2.4 as follows:

Within 1 Month of the receipt of notice under 9.2.2 or 9.2.3 or as soon as practicable thereafter, the Engineer shall by notice in writing either confirm that the instruction or matter involves a Variation or disallow a Variation giving reasons for doing so. ~~Unless within that time the Engineer issues a notice in writing disallowing a Variation, the instruction or matter shall be treated as a Variation.~~

9.2.5

Add a new clause 9.2.5 as follows:

For the purposes of 9.2.2 and 9.2.3 oral notice which is recorded in written records such as Site minutes, correspondence or memoranda held by the Contractor and by the Engineer or Principal shall not be treated as written notice.

9.3.3

Amend clause 9.3.3 as follows:

Where the valuation of the Variation requires that the work be measured, the Engineer shall measure the work and shall notify the Contractor of his or her measurement, unless the Engineer requires the Contractor to carry out the measurement, in which case the Contractor shall measure the work and shall notify the Engineer of his or her measurement. The Contractor and the Engineer shall each provide to the other without undue delay such evidence as may reasonably be required to establish the correctness of all relevant quantities and Costs and the effect on the programme, and shall exchange their respective calculations and estimates of the value of the Variation.

9.3.13

Amend clause 9.3.13 as follows:

Where the Base Value is a negative figure, the amount to be deducted shall include an allowance for Off-site Overheads and Profit. The amount to be deducted shall not include any allowance for On-site Overheads, ~~not include any allowance for Off-site Overheads or Profit or for On-site Overheads,~~ except to the extent that the Variation reduces those On-site Overheads.

9.4.3

Amend clause 9.4.3 as follows:

For all work executed on a Daywork basis, the Contractor shall record on a daily basis during the continuation of the work, in a manner acceptable to the Engineer, the time spent by each worker and each item of Plant, and the quantities of Materials used for the execution of the Daywork. These records shall, if agreed correct, be signed by the Engineer or the Engineer's Representative if possible on a daily basis and shall be the basis of payment. If neither the Engineer nor the Engineer's Representative is available these records shall be signed by, or on behalf of, the Contractor. One signed copy shall be submitted with the Contractor's payment claim and ~~in such case~~ in the case of records signed by the Engineer shall be *prima facie* evidence of its content.

9.5.1

Amend clause 9.5.1 as follows:

The term 'physical conditions' shall include artificial obstructions but shall not include weather conditions or conditions due to weather. ~~unless those conditions occur as a result of weather away from the Site.~~

SECTION 10 - TIME FOR COMPLETION

10.1.2

Delete clause 10.1.2 and replace with the following clause:

From the Date of Commencement, and subject to the Contractor being given occupancy of the Site under 5.4.1, the Contractor shall commence the Contract Works on Site in accordance with the requirements set out in the Engineer approved RAMM Dispatch.
The Contractor shall proceed with the execution of the Contract Works with due diligence and in accordance with the Contract except as may be sanctioned or instructed by the Engineer.

10.3.1

Amend clause 10.3.1 as follows:

The Engineer shall grant an extension of the time for completion of the Contract Works or for any Separable Portion if the Contractor is fairly entitled to an extension by reason of:

(a) The net effect of any Variation;

(b) Weather sufficiently inclement to interfere with the progress of the works;

(c) Any strike, lockout, or other industrial action not caused directly by the Contractor or the Contractor's Subcontractors and subject to the Contractor proving that the delay will impact the Due Date for Completion;

(d) Loss or damage to the Contract Works or Materials other than loss or damage caused by any act or omission of the Contractor or any Person for whose acts or omissions the Contractor is as between itself and the Principal responsible;

(e) Flood, volcanic, or seismic events;

(f) Any circumstances not reasonably foreseeable by an experienced contractor at the time of tendering and not due to the fault of the Contractor; or

(g) Default by the Principal, or any other Person for whose acts or omissions the Principal is responsible, which is not a Variation.

10.3.2

Amend clause 10.3.2 as follows:

The Engineer shall not be bound to grant an extension unless:

(a) The Contractor notifies the Engineer that it claims an extension and states the grounds for the extension;

(b) The notice is given within 20 Working Days after the circumstances arise which are relied on as the grounds for extension, or as soon as practicable thereafter;

(c) The notice either gives details of the period of extension sought or is followed within a reasonable time by a further notice giving such details; and

(d) The critical path for the Contract Works is impacted as a result of the delay.

10.4.3

Amend clause 10.4.3 as follows:

Within ~~5~~ 10 Working Days of receipt of such notice or as soon as practicable thereafter the Engineer shall inspect the Contract Works or Separable Portion and shall thereupon either:

(a) Issue a Practical Completion Certificate to the Principal and the Contractor stating the date and time at which the Contract Works or Separable Portion were so completed; or

(b) Give the Contractor written notice of the work to be altered or completed in order to qualify for a Practical Completion Certificate.

10.4.5

Amend clause 10.4.5 as follows:

If required by the Special Conditions, prior to the Engineer issuing a Practical Completion Certificate, the Contractor shall provide to the Engineer:

(a) Producer Statements in the form set out in Schedule 6 or other form(s) as noted in the Special Conditions; ~~and~~

(b) As-built drawings and ~~operation and maintenance manuals~~ installation records required under 5.20.1 in draft form in accordance with 5.20.3(a); and

(c) Any other documentation required under the Contract.

SECTION 11 - DEFECTS LIABILITY

11.3.2

Amend clause 11.3.2 as follows:

If required by the Special Conditions, prior to the Engineer issuing a Final Completion Certificate the Contractor shall provide to the Engineer:

(a) Producer Statements in the form set out in Schedule 6, or other form(s) as noted in the Special Conditions; ~~and~~

(b) As-built drawings and ~~operation and maintenance manuals~~ installation records required under 5.20.1 in final form in accordance with 5.20; and

(c) Anything else required by the Special Conditions.

SECTION 12 - PAYMENTS

12.1.2

Delete clause 12.1.2 and replace with the following clause:

The Contractor shall prior to the first day of each month submit a payment claim to the Engineer for all Contract Works completed in the previous month by updating the status of each RAMM Dispatch Claim Line to 'Presented'. For the purposes of this Contract, a monthly payment claim includes the aggregate of all or any part or parts of the Contract Works, which may be covered over the prior month. Any payment claims issued during the month shall be deemed issued on the last day of each month in which they are received/entered into RAMM. The claim period in respect of the first payment claim shall be the period from the Date of Commencement to the last day of the first month in the term. The parties agree that the payment process the parties will implement throughout the Contract is through the RAMM system and the coding of claims within that system. The parties further acknowledge that the agreed payment process through the RAMM system overrides any requirements of this section 12, where there is a conflict.

12.1.3(c)

Amend clause 12.1.3(c) as follows:

Indicate the due date for payment which shall be ~~17~~ 22 Working Days after the date of service of the payment claim

12.1.4

Add a new clause 12.1.4 as follows:

The Contractor shall claim only for work that completely satisfies the requirements of 'completion' as set out in Volume 2 of these Contract Documents, Section 3, General Requirements, clause 16.

12.2.8

Amend clause 12.2.8 as follows:

The scheduled amount under 12.2.2(d) or 12.2.5(d) as the case may be, together with the amount of goods and services tax payable shall be paid by the Principal to the Contractor within ~~17~~ 22 Working Days after the date on which the Contractor's payment claim was served on the Engineer under 12.1.1.

12.3.2

Amend clause 12.3.2 as follows:

The monies retained, less any deductions which the Principal is entitled to make, shall be paid to the Contractor as follows:

(a) By payment, as part of the first progress payment after the issue of the Practical Completion Certificate for the whole of the Contract Works or for the Separable Portion, of any amount in excess of the defects liability retention specified in the Special Conditions less the Engineer's assessment of the value of any Contract Works remaining to be completed other than minor omissions and minor defects under 10.4.1;

(b) By payment, as part of the first and any subsequent progress payment after the end of the Defects Notification Period for the whole of the Contract Works or for the Separable Portion, of the defects liability retention less the Engineer's assessment of the value of the Contract Works remaining to be completed in accordance with 11.2 at the time of the progress payment. The assessed value of such remaining Contract Works shall be the assessed Cost to the Principal of making good those omissions and defects in accordance with 11.2.2 and 11.2.3; and

(c) By payment of any remaining defects liability retention 10 Working Days after the date of the Final Completion Certificate for the whole of the Contract Works or of the Separable Portion.

12.6.2

Add new clause 12.6.2

Notwithstanding the issue of the Final Payment Schedule the Contractor shall remain liable for fulfilment of any obligation of the Contractor under the Contract which then remains unperformed or not properly performed.

12.14

Add new clause 12.14

The Principal shall be entitled to set off against any sums that would otherwise be due to the Contractor, whether certified by the Engineer or otherwise, amounts in respect of any claims against the Contractor, including damages for breach of contract by the Contractor (whether pursuant to this Contract or any other contract between the Principal and the Contractor).

SECTION 14 - FRUSTRATION AND DEFAULT

14.1.2

Amend clause 14.1.2 as follows:

The Engineer shall certify and the Principal shall pay the Contractor:

(a) The value of the work carried out at the date of termination less the amounts previously paid;

(b) The Cost of Materials ordered for the Contract Works which have been delivered to the Contractor or of which the Contractor is legally obliged to accept delivery, and which the Contractor delivers to the Principal. These Materials shall become the property of the Principal upon delivery to the Principal;

(c) Cost fluctuation adjustments due and payable up to the date of termination;

(d) Fair compensation to the Contractor for any Cost which is included in a rate in the Schedule of Prices to the extent that the termination of the Contract causes an under-recovery of that Cost;

~~(e) Any Cost reasonably incurred by the Contractor in the expectation of completing the Contract Works insofar as such Cost is not covered by other payments under 14.1.2(a) to 14.1.2(d);~~

(f) The Cost of any works necessitated by the removal of Contractor's Plant and the carrying out of the Engineer's instructions for the making safe of the Contract Works; and

(g) Any other Costs resulting from the termination as are reasonable to compensate the Contractor for disruption and are not otherwise provided in the Contract.

14.2.1

Amend clause 14.2.1 as follows:

The Principal may at its option after giving notice to the Contractor either terminate the Contract or resume possession of the Site in the event of:

(a) The Contractor failing to execute the Contract Agreement under 2.6 or the Contractor's bond under 3.1 where required by the Contract; or

(b) The Contractor subletting the whole or substantially the whole of the Contract Works without the consent in writing of the Principal; or

(c) The Contractor breaching 2.9; or

(~~c~~d) The Engineer certifying in writing to the Principal that in his or her opinion the Contractor has abandoned the Contract or is persistently, flagrantly or wilfully neglecting to carry out its obligations under the Contract; or

(e) The Contractor being in default of a material obligation under the Contract;

and the Contractor's default has not been remedied within 10 Working Days of receiving the notice.

Insert a new section 16

SECTION 16 - CONFIDENTIALITY

16.1

The Contractor agrees that all Confidential Information it becomes aware of as a consequence of this Contract shall be treated as confidential. The Contractor shall take all reasonable precautions to ensure that Confidential Information is not in any way disclosed to any third party other than as required to perform the Contract Works or by any law or court.

The Contractor shall ensure that its personnel, its Subcontractors and the Subcontractor's personnel are aware of and comply with this confidentiality obligation.

Where requested by the Engineer, the Contractor shall procure signed confidentiality undertakings (in such form as is reasonably required by the Principal) from its personnel (including Subcontractor personnel) who will come into possession of Confidential Information.

Insert a new section 17

SECTION 17 - LOCAL GOVERNMENT OFFICIAL INFORMATION AND MEETINGS ACT 1987

17.1

The parties acknowledge that the Principal is subject to the Local Government Official Information and Meetings Act 1987. The Principal may be required to release information about the Contract Works and this Contract. In addition, the Contractor agrees to comply with the requirements of the Local Government Official Information and Meetings Act 1987 in relation to

all information relating to the Principal and its contractors held by the Contractor, its employees and Subcontractors.

Insert a new section 18

SECTION 18 - POTENTIAL AMALGAMATION

18.1

The parties agree that in the event of a local government reorganisation in the Wellington region, the Principal may elect to transfer or assign it rights, with an indemnity back from the Contractor or novate its rights and obligations under this Contract to the relevant public entity. In the event that the Principal exercises its right under this clause to transfer or assign its rights with an indemnity back from the Contractor or novate its rights and obligations this Contract, the Contractor agrees to sign all documents and do all things necessary to give effect to such transfer, assignment or novation.

APPENDIX B – CONTRACTS IN PUBLIC PLACES AND ROAD CONTRACTS

Add new B4 Occupancy prior to Practical Completion

Add to the end of 8.3.4(b)

> ... save that the running of traffic under restricted conditions prior to Practical Completion shall not be deemed to be the Principal taking occupancy; and

Add a new Appendix B as follows

APPENDIX B – CONTRACT SPECIFIC SAFETY

The Contractor shall comply with the following health and safety requirements (in addition to those in the Contract)

1 The Contractor shall appoint a single person as the Site safety officer for the Contract Works. The Site safety officer shall be the primary point of contact on all health and safety matters. The Contractor will give written notice of the name and contact arrangements for the Site safety officer to the Engineer.

2 The Contractor shall prepare a written Site specific health and safety plan for the Contract Works. The health and safety plan will provide for the health and safety of all persons working at or visiting the Site to ensure that, as far as is reasonably practicable, their health, safety, and welfare is not put at risk from the work carried as well as addressing how the Contractor will otherwise comply with the HSW Act and its health and safety obligations under this Contract. The Contractor will maintain the plan and ensure that it is comprehensive and takes into account any changes in the HSW Act and any regulations made under the HSW Act.

3 The Contractor will provide a copy of its Site specific health and safety plan to the Engineer within the timeframe set out in clause 5.17 of the General Conditions. The Contractor will provide any updates or revisions to the health and safety plan to the Engineer promptly and in any event within 1 Working Day of making any such changes.

4 The Contractor's Site specific Health and Safety Plan must show how the Contractor intends to manage health and safety for the Contract Works. The plan may need to be updated depending on the nature of the Contract Works, particularly where hazards change at intervals. The information contained in the plan depends on the size and nature of work to be carried out, and in line with this, must address the following matters where relevant to the Contract Works:

- Procedures for the management of safety on the Site generally
- Procedures for co-ordinating and consulting with Subcontractors and the Principal in respect of the above duties
- the allocation of responsibilities both within the Contractor's employees and as between the Contractor and the Contractor's Subcontractors
- Means of involving engagement with employees and Subcontractors in the improvement of health and safety for the Contract Works
- Health and safety risks arising in connection with the Site and the Contract Works and the steps proposed to, as far as is reasonably practicable to eliminate that risk,
- Information on potential health and safety risk at the Site including risks that may breach the boundary of the Site (eg hazardous substances/ chemicals noise, dust, etc)
- Procedures for the identification and management of all health and safety risks arising during the carrying out of the Contract Works
- The need for and provision of correct protective equipment and training in the use of protective equipment
- Standard work procedure methodologies to minimise all health and safety risks
- Procedures for safety training and safety induction of persons coming on to the Site
- Procedures for ensuring the safety of the public, including motorists, pedestrians and residents or occupiers affected by the Contract Works

- Identification and control of restricted areas
- The training, supervision, experience and qualifications (including certificates of competency where required) of the Contractor's employees engaged in carrying out the Contract Works
- Contract-specific competency requirements for operation of the plant and equipment to be used on the Contract Works, including any hired plant or equipment
- Safe work procedures (or references to them) for tasks with potential for serious harm
- A schedule of nominated staff with day to day health and safety responsibilities
- A schedule of health and safety meetings
- A copy of the accident reporting and investigation process
- Specific procedures dealing with emergencies, operations, work permits and instructions relating to the Contract Works in order to comply with the HSW Act.
- Procedures for co-ordination and communication with Separate Contractors
- Procedures for ensuring that the Contractor contracts with Subcontractors having the required safety competence, that the Subcontractor's activities are co-ordinated with the activities of other contractors and persons on the Site, that all Subcontractors have proper health and safety plans and will comply with the requirements of the HSW Act and the Contract
- The audit and inspection of the Contractor's health and safety procedures, the Works and the Site to ensure compliance with the safety requirements of the HSW Act and the Contract
- The monitoring procedures to ensure compliance with and performance of the system
- The promotion of health and safety principles and encouraging of a commitment to health and safety by the Contractor's employees and Subcontractors.
- Reporting of all notifiable events to the relevant authority as required by the HSW Act and to the Council's Representative

5 The Contractor must ensure, so far as is reasonably practicable the health and safety of all workers and other persons is not put at risk from the carrying out of the Contract Works. The Contractor will provide a comprehensive health and safety risks analysis to all Subcontractors and other persons who intend to carry out any work on any Site and for that purpose shall obtain from the Principal a list identifying health and safety risks associated with the design of the Contract Works.

6 The Contractor will implement and carry out an audit and inspection regime as shall be required to ensure compliance by all persons on the Site with the Contractor's health and safety plan and compliance with the Contractor's obligations under this Contract

Schedule 3 – Form of Contractor's performance bond

Contract for: *[Contract Name & Contract Number]*

THIS DEED is made on

BY ……..

of …….. (*'the surety'*)

.....

.....*…..(Address of surety for service)*

IT IS MADE IN THE FOLLOWING CIRCUMSTANCES:

A The Contractor has entered into an agreement with ……... of …….. ('the Principal') to carry out and fulfil the obligations imposed on the Contractor ('the Contract').

B The Contract requires the Contractor to provide the Principal with security in the form of a bond to ensure performance of the Contractor's obligations under the Contract.

C Words and phrases with capital initial letters that are not otherwise defined in this bond shall have the meaning set out in the Contract.

BY THIS DEED:

1. **THE** surety is held and bound to the Principal in the sum of $NZ..... and binds its successors and assigns for the payment of that sum.

2. **THE** surety irrevocably and unconditionally undertakes to pay to the Principal any sum or sums which may, from time to time, be demanded in writing by the Principal, up to an aggregate amount not exceeding the sum stated in clause 1 above. The surety shall make payment forthwith upon demand by the Principal, without enquiry as to, and without having regard to, the position as between the Contractor and the Principal, or whether or not the Contractor is in default under the Contract. Payment will be made without reference to, and notwithstanding any instruction from the Contractor to the surety to the contrary.

3. **ANY** notice by the Principal under this bond shall be deemed to have been properly given if signed by the Principal or on behalf of the Principal by any of its agents, directors, or employees and sent by registered mail or delivered by hand to the surety at the address for service stated in this bond.

4. **THE** conditions of this bond are that it shall be released if and when:

(a) A Certificate on Expiry has been issued for the Contract Works in accordance with 10.3 of the General Conditions; or

(b) The surety receives a notice from the Principal releasing the Contractor and surety from this bond.

5. **EXCEPT** as provided in clause 4 above this bond shall be and remain in full force and effect.

6. **THE** surety shall not be released from any liability under this bond:

(a) By any alteration in the terms of the Contract;

(b) By any alteration in the extent or nature of the Contract Works to be completed, delivered, and having defects remedied;

(c) By any allowance of time by the Principal or by the Engineer appointed by the Principal under the Contract; or

(d) By any forbearance or waiver by the Principal or by the Engineer in respect of any of the Contractor's obligations or in respect of any default on the part of the Contractor.

7. **THIS** bond shall be governed by New Zealand law.

In witness of which this deed has been executed and delivered

SIGNED on behalf of the surety by:

.....

Director

.....

Director

NOTE – This bond shall be executed by the surety in the manner required for execution of a deed.

Schedule 4 – Form of Principal's bond

Not Used

Schedule 5 – Form of Contractor's bond in lieu of retentions

Contract for: *[Contract Name & Contract Number]*

THIS DEED is made on .....

BY .....

of ..... *('the surety')*

....

..... *(Address of surety for service)*

IT IS MADE IN THE FOLLOWING CIRCUMSTANCES

A The Contractor has entered into an agreement with …… of ('the Principal') to carry out and fulfil the obligations imposed on the Contractor ('the Contract').

B The Contractor has agreed to provide the Principal with security in the form of a bond in lieu of retentions additional to any other bond required under the Contract.

C Words and phrases with capital initial letters that are not otherwise defined in this bond shall have the meaning set out in the Contract.

BY THIS DEED

1. **THE** surety is held and bound to the Principal in the sum of $NZ..... and binds its successors and assigns for the payment of that sum.

2. **THE** surety irrevocably and unconditionally undertakes to pay to the Principal any sum or sums which may, from time to time, be demanded in writing by the Principal, up to an aggregate amount not exceeding the sum stated in clause 1 above. The surety shall make payment forthwith upon demand by the Principal, without enquiry as to, and without having regard to, the position as between the Contractor and the Principal, or whether or not the Contractor is in default under the Contract. Payment will be made without reference to, and notwithstanding any instruction from the Contractor to the surety to the contrary.

3. **ANY** notice by the Principal under this bond shall be deemed to have been properly given if signed by the Principal or on behalf of the Principal by any of its agents, directors, or employees and sent by registered mail or delivered by hand to the surety at the address for service stated in this bond.

4. **THE** conditions of this bond are that it shall be released if and when:

(a) The Final Completion Certificate has been issued for the whole Contract Works in accordance with 11.4 of the General Conditions; or

(b) The surety receives a notice from the Principal releasing the Contractor and the surety from this bond.

5. **EXCEPT** as provided in clause 4 above this bond shall be and remain in full force and effect.

6. **THE** surety shall not be released from any liability under this bond:

(a) By any alteration in the terms of the Contract;

(b) By any alteration in the extent or nature of the Contract Works to be completed, delivered, and having defects remedied;

(c) By any allowance of time by the Principal or by the Engineer appointed by the Principal under the Contract; or

(d) By any forbearance or waiver by the Principal or by the Engineer in respect of any of the Contractor's obligations or in respect of any default on the part of the Contractor.

7. **THIS** bond shall be governed by New Zealand law.

In witness of which this deed has been executed and delivered.

SIGNED on behalf of the surety by:

.....
Director

.....
Director

NOTE – This bond shall be executed by the surety in the manner required for execution of a deed.

Schedule 6 – Form of Producer Statement – Construction

ISSUED BY .....*(Contractor)*
TO ..... *(Principal)*
IN RESPECT OF .....*(Description of Contract Works)*
AT ..... ……..*(Address)*
..... (*Contractor)* has contracted to ..... *(Principal)*
to carry out and complete certain building works in accordance with a Contract titled
.....……('the Contract')
(Project)
I .....*(Duly Authorised Agent)*
a duly authorised representative of …… *(Contractor)* believe
on reasonable grounds that …….. *(Contractor)*
has carried out and completed:

☐ All

☐ Part only as specified in the attached particulars of the building works in accordance with the Contract

.....

.....

.....

..... Date .....
(Signature of Authorised Agent on behalf of)

.....
(Contractor)

.....

.....
(Address)

Schedule 7 – Information on Contractor arranged construction insurance

To whom it may concern:

From……*(Name of insurance company)*
……*(Branch)*
……*(Address)*

We confirm having effected construction insurance for:

……. *(Contractor)*

……..*(Principal)*

In respect of ……. *(Project title)*
Policy wording title is
.....

The following provisions apply:

- ☐ Project specific policy
- ☐ Annual run-off policy
- ☐ Annual cut-off policy

We advise that special terms, copy attached, have been applied to this policy Yes/No

8.1.6
The following forces of nature are insured:

☐ landslip	☐ earthquake	☐ tsunami
☐ tornado	☐ cyclone	☐ storm
☐ flood	☐ lightning strike	☐ volcanic activity
☐ hydrothermal activity	☐ geothermal activity	

8.3.3
The sums insured are (GST exclusive)

Contract Price		$.....
(a)	Costs of demolition	$.....
(b)	Professional fees	$.....
(c)	Value of items supplied free to be incorporated	$.....
(d)	An allowance for increase in construction costs	$.....
(e)	An allowance for increased reconstruction costs	$.....
	TOTAL SUM INSURED	$.....

The policy deductibles are (GST inclusive):

Non-earthquake	$.....
Natural disaster …….%..... minimum of	$.....
Other (name)……	$.....

8.2.3(a)

Construction period from .....to …….…….....

Insurance maintenance period ……...

Policy expiry date …….....

Policy cover terms included are:

8.2.2	Discretionary cancellation clause	Yes/No
8.2.3	Reinstatement provision on building contents	Yes/No
8.2.3	Severally insured	Yes/No
	No settlement delay due to exercise of subrogation	Yes/No
8.2.4	Void *ab initio* for non-payment of premium without prior notification	Yes/No

Policy extensions included are:

			Sub-limit (if applicable)
8.3.1	Transit (in New Zealand)	Yes/No	$.....
8.3.1	Materials in storage (in New Zealand)	Yes/No	$.....
	Testing and commissioning	Yes/No	$.....
	Expediting expenses	Yes/No	$.....
	Overseas airfreight	Yes/No	$.....

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

This insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2013.

Insurance Company Stamp ..... **Date** .....

(Or name of insurance broking company confirming cover)

SIGNED BY ..... ……..

SIGNATORY TITLE ..... ……..

(Clause numbers refer to NZS 3910:2013 and are for information only.)

Schedule 8 – Information on Contractor arranged Plant insurance

To whom it may concern:

From…… ..... *(Name of insurance company)*
… .....*..(Branch)*
.....……
.....*(Address)*

We confirm having effected Plant insurance for:
……..*(The Contractor)*
…… *(The Principal)*
In respect of ……..*(Project title)*
Policy wording title is ……
We advise that special terms, copy attached, have been applied to this policy Yes/No

The following provisions apply:

☐ Annual policy
☐ Project specific policy

Policy expiry date .....

8.4
The sums insured are (GST exclusive):

☐ All items of Plant Sum insured $.....
OR
☐ Valued schedule of construction Plant insured (copy attached)

The policy deductible (GST inclusive) is $.....

Policy cover terms included are:

8.2.2	Discretionary cancellation clause	Yes/No
8.2.3(a)	Reinstatement provision	Yes/No
8.2.4	Void *ab initio* for non-payment of premium without prior notification	Yes/No
	No settlement delay due to exercise of subrogation	Yes/No

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

This insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2013.

Insurance Company Stamp …… **Date** .....
(Or name of insurance broking company confirming cover)

SIGNED BY .....

SIGNATORY TITLE .....

(Clause numbers refer to NZS 3910:2013 and are for information only.)

Schedule 9 – Information on public liability insurance

To whom it may concern:

From ……*(Name of insurance company)*

.....*..(Branch)*

..... *..(Address)*

We confirm having effected public liability insurance to indemnify the Principal and the Contractor against legal liability to third parties for damage, loss or injury caused by an act or omission of the Contractor arising out of the performance of the Contract Works.

……..*(The Contractor)*

…….*(The Principal)*

In respect of ..... *..(Project title)*

Policy wording title is ……

We advise that special terms, copy attached, have been specifically applied to this project Yes/No

The following provisions apply:

☐ Annual policy
☐ Project specific policy

Policy expiry date .....

8.5, 8.9

The limit of indemnity (GST exclusive)	$.....
Sub-limit insured for (GST exclusive)	
Vibration, removal or weakening of support	$.....
Forest and Rural Fires Act 1977	$.....
Underground services	$.....
Deductible (GST inclusive) is	$.....
Deductible for vibration, removal or weakening of support (GST inclusive)	$.....
Deductible for underground services (GST inclusive)	$.....

The policy also covers liability arising out of:

The ownership/use of Plant not required to be registered for road use	Yes/No
The use of hired Plant	Yes/No
The ownership/use of watercraft over 8 m	Yes/No
The ownership/use of aircraft	Yes/No
The use of explosives	Yes/No

8.2, 8.7

Policy cover terms included are:

Reinstatement provisions	Yes/No
Number of reinstatements	…….
Discretionary cancellation clause	Yes/No
Void *ab intio* for non-payment of premium without prior notification	Yes/No
Severally insured	Yes/No
No settlement delay due to exercise of subrogation	Yes/No

We undertake that this policy will not be cancelled or amended by us without written advice to the insured party which has arranged the insurances.

This insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2013.

Insurance Company Stamp ..... **Date** .....
(Or name of insurance broking company confirming cover)

SIGNED BY .....

SIGNATORY TITLE .....

(Clause numbers refer to NZS 3910:2013 and are for information only.)

Schedule 10 – Information on Contractor arranged motor vehicle insurance

To whom it may concern:

From ……..…....*(Name of insurance company)*
.....*(Branch)*
..... *(Address)*

We confirm having effected motor fleet insurance for:
……..……...*(The Contractor)*
……..……....*(The Principal)*
In respect of ……..……...*(Project title)*
Policy wording title is ……..……

We advise that special terms, copy attached, have been applied to this policy Yes/No

The following provisions apply:
☐ Annual policy
☐ Project specific policy

Policy expiry date .....

8.5.2
The limits of liability are (GST exclusive):
Section 2 – Liability
For any one occurrence arising out of the same event $.....

The policy deductibles are:
Section 2 – Liability (GST inclusive) $.....
Plus under age penalties

8.2
Policy cover terms included are:

Section 2 Liability automatic reinstatement	Yes/No
Discretionary cancellation clause	Yes/No
Void *ab initio* for non-payment of premium without prior notification	Yes/No
No settlement delay due to exercise of subrogation	Yes/No

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

This insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2013.

Insurance Company Stamp ..... **Date**.....
(Or name of insurance broking company confirming cover)

SIGNED BY .....

SIGNATORY TITLE .....
(Clause numbers refer to NZS 3910:2013 and are for information only.)

Schedule 11 – Information of Contractor arranged professional indemnity insurance

To whom it may concern:

From…….. *(Name of insurance company)*
.....*..(Branch)*
..... *..(Address)*

We confirm having effected professional indemnity insurance for:
……..*(The Contractor)*
…….*(The Principal)*
In respect of…….*….(Project title)*
Policy wording title is ……

We advise that special terms, copy attached, have been applied to this policy Yes/No

The following provisions apply:
☐ Annual policy
☐ Project specific policy

Policy expiry date .....

8.6.1
The limit of indemnity (GST exclusive) $..... any one occurrence
$..... in the aggregate during the period of insurance.
Deductible (GST inclusive) $.....

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

This insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2013.

Insurance Company Stamp ..... **Date**.....
(Or name of insurance broking company confirming cover)

SIGNED BY .....

SIGNATORY TITLE .....
(Clause numbers refer to NZS 3910:2013 and are for information only.)

Schedule 12 – Information on Principal arranged construction and existing property insurance

Not used

Schedule 13 – Form of Subcontractor warranty

THIS DEED is made on…… .....*(insert date)*

BETWEEN……..……..……..…..*('the Principal')*

AND……..……*('the Warrantor')*

DEFINITIONS

'Warranted Works'…….

'Warranty Period'……..years from the date of completion of the Contract Works

BACKGROUND

A The Principal has entered into a contract [*insert name of contractor*] ('Contractor')' for carrying out the Contract Works ('Contract'). The Warranted Works are part of the Contract Works.

B Under the Contract the Contractor has agreed to arrange for the provision of a warranty in respect of the Warranted Works for the Warranty Period on the terms set out in this warranty.

C The Warrantor has agreed to provide a warranty in respect of the Warranted Works for the Warranty Period on the terms set out in this warranty.

D. Words and phrases with capital initial letters that are not otherwise defined in this warranty shall have the meaning set out in the Contract.

IT IS HEREBY AGREED

1 The Warrantor warrants to the Principal that the Warranted Works are as required in the Contract. If not otherwise specified the works shall be in accordance with good trade practice.

2 This warranty shall be in addition to and shall not derogate from any manufacturer's warranty or any warranty implied by law, attaching to any part of the Warranted Works.

3 Warrantor's obligations

3.1

The Warrantor agrees that, if within the Warranty Period the Warrantor is advised by the Principal in writing of any defect in the Warranted Works for which the Warrantor is liable under the terms of this warranty, the Warrantor will promptly take steps to remedy the defect.

3.2

Any remedial work which the Warrantor is liable to undertake under this warranty shall be carried out:

(a) To the standard required by the Contract;

(b) In a prompt and timely manner;

(c) Without unnecessary inconvenience to any occupants;

(d) At the Warrantor's Cost; and

(e) Subject to reasonable access being provided to the Warrantor for the purpose of carrying out the remedial work.

3.3

Where the Cost of replacement of work and/or Materials is out of all proportion to the consequences of the defect, or where the defect may not be reasonably capable of rectification without substantial expense which is out of all proportion to the Cost of the Warranted Works:

(a) If the defect is reasonably able to be rectified by repair rather than by replacement, the Warrantor's

obligation under this warranty shall be only to repair or otherwise make good the defect;

(b) The Warrantor may propose reasonable monetary compensation in lieu of remedying the defect; or

(c) The Warrantor may propose a combination of both repair and compensation.

3.4

The Principal shall consider the Warrantor's reasonable proposals and the parties shall endeavour in good faith to reach agreement. Where agreement cannot be reached, the dispute shall be resolved in accordance with clause 7.

4 Failure by Warrantor to perform remedial work

4.1

If the Warrantor fails to promptly, adequately and satisfactorily carry out the remedial work or to propose acceptable repair or compensation, the Principal may then arrange for the remedial work to be carried out by others.

4.2

The Principal shall first give the Warrantor 10 Working Days' notice, or such other reasonable time as agreed by the Principal, to carry out and complete the remedial work. If the Warrantor does not do so within that time, the Principal may then advise the Warrantor in writing that the work will be carried out by other Persons.

4.3

In such an event, the Warrantor is not released from its obligations under this warranty, which continue in full force and effect, except for the defect remedied by the Principal or by another Person contracted by the Principal.

4.4

The reasonable Cost of remedial work carried out by such other Persons including all reasonable Costs of the Principal shall be paid to the Principal by the Warrantor on demand.

5 Exclusions

The Principal agrees that the Warrantor is not liable for any defect or damage caused by:

(a) Wilful act or negligence of the Principal or any Person other than the Warrantor;

(b) Fire, explosion, earthquake, war, subsidence, slips, faulty materials, or workmanship other than caused by the defect in the Warranted Works;

(c) Any force of nature which the Warrantor could not have reasonably foreseen;

(d) Any neglect or unnecessary delay by the Principal in giving notice to the Warrantor of a defect in the Warranted Works becoming apparent;

(e) Design faults, errors, or discrepancies, unless the Warrantor undertook the design of the part of the Warranted Works that is the subject of the defect;

(f) Use of the Warranted Works by the Principal or any other Person in any manner or for any purpose not being the intended manner of use or purpose of the Warranted Works;

(g) Failure by the Principal or other Person to maintain the Warranted Works in accordance with good practice and any manufacturer's stated or recommended instructions or requirements; or

(h) Fair wear and tear.

6 Assignment

The Principal may assign the benefit of this warranty to any Person.

7 Disputes

Any dispute between the Principal and the Warrantor arising out of this warranty is to be referred to arbitration before a sole arbitrator. If, within 15 Working Days of notice of dispute, the Principal and the Warrantor cannot agree on a single arbitrator, either party may request the President of the Arbitrators' and Mediators' Institute of New Zealand to appoint an arbitrator.

In witness of which this deed has been executed and delivered.

SIGNED on behalf of the Warrantor by:

.....

Director

.....

Director

SIGNED on behalf of the Principal by:

.....

Director

.....

Director

NOTE – The warranty shall be executed by the Warrantor and the Principal in the manner required for execution of a deed. Any of these parties which are a company shall execute the warranty by having it signed, under the name of the company, by two or more directors. If there is only one director, it is sufficient if the Warranty is signed under the name of the company by that director, but the signature shall be witnessed by another Person. The witness shall not only sign but shall also add his or her occupation and address. Alternatively, companies may execute under power of attorney. Any party which is a body corporate (other than a company) shall execute by affixing its seal, which shall be attested in the manner provided for in the rules of, or applicable to, the body corporate. In the case of a party who is an individual, the party shall sign and the signature shall be witnessed by another Person. The witness shall not only sign but shall also add his or her occupation and address.

Schedule 14 – Agreement for Off-site Materials

Not used

Schedule 15 – Practical Completion Certificate

This practical Completion Certificate is issued under 10.4.(a) or 10.4.4

Contract for .....
..... *(Contract name and number if applicable)*
Principal ..... *(Insert name of Principal)*
Contractor..... *(Insert name of Contractor)*

This certificate relates to:

☐ (a) The whole of the Contract Works referred to above;

☐ (b) The following Separable Portion…….. *(specify)*

Receipt of the Contractor's notice dated……..and issued in accordance with 10.4.2 is acknowledged.

In accordance with ☐ 10.4.3(a) or ☐ 10.4.4 (*select 1*), the Engineer certifies that the Contract Works or Separable Portion to which this certificate relates qualify for a Practical Completion Certificate under 10.4, notwithstanding that there may be minor omissions and/or minor defects (as listed in the attached schedule) which satisfy the criteria in 10.4.1 (a), (b), and (c).

The Contractor is required to remedy all of the listed omissions or defects within the period stated in the attached schedule against the relevant omission or defect, or at the latest within……..Working Days of the date of this certificate.

Practical Completion was achieved
on ……. *(insert date)* at…….*(insert time)*

Signed by the Engineer ....
Name .....
Date .....

SCHEDULE
The following omissions and/or defects have been assessed as being of a minor nature satisfying the criteria in 10.4.1 (a), (b), and (c) and were identified during an inspection carried out by the Engineer or Engineer's Representative on……..*(insert date).*

(list minor omissions and defects)……

……..

Schedule 16 – Final Completion Certificate

This certificate is a Final Completion Certificate issued under 11.4.1.

Contract for ……..……..…….
……..*(Contract name and number if applicable)*
Principal ……..……..…….*(Insert name of Principal)*
Contractor .....*(Insert name of Contractor)*

This certificate relates to:

☐ (a) The whole of the Contract Works referred to above;

☐ (b) The following Separable Portion ……....*(specify)*

In accordance with 11.4.1, the Engineer certifies that the Contract Works or Separable Portion to which this certificate relates qualify for a Final Completion Certificate issued under 11.4

on ..... *(insert date)* at .....*(insert time).*

Signed by the Engineer……..

Name .....

Date……..……

Section 3 – General Requirements
Table of Contents

1 Introduction

The Wellington City Council (the Council) is responsible for providing and maintaining public road and footpath facilities for the benefit of the public in Wellington City.

This Contract is the means for the Council to purchase an accelerated rollout of LED street lighting luminaires (LEDs) as part of providing and maintaining its public road and footpath facilities.

The Council's budget needs for the maintenance and improvement of its street lighting facilities are planned through the Annual and Long Term Planning processes. The Council may vary its annual budget allocations from year to year.

The Council supports improvement initiatives in all its contracts and in its relationships with suppliers. It is keen to collaborate with the Contractor on this Contract to ensure the smooth running of the contract and to foster contract improvement.

The Contractor is required to manage and carry out the Works in the manner outlined in these Contract Documents.

2 Contract Scope

2.1 Description of Works

This contract along with similar contracts with other panellists is for the installation of LEDs to replace the Council's existing High Intensity Discharge (HID) street lights across the city. While the Council will supply the LEDs and Light Point Controllers (LPCs) the Contractor shall supply all other materials, plant and labour required by this contract. All outputs must comply with the Council's standards as referred to within these Contract Documents, and all applicable legislation, local, national and international codes and standards.

The work will include both day and night operations.

Street lighting accelerated rollout of LEDs includes:

- Receiving the various packages of work assigned to the contractor, raising a RAMM Dispatch for each LED to be installed and submitting the RAMM Dispatches to the Engineer for approval
- Assessing each LED installation site, and measuring and recording all site assessment records into RAMM Contractor as required under the contract. This includes identifying any structural aspects of the outreach arm and its connections to the pole that would prevent the new LED from being securely fixed in place
- Placing orders for LEDs and LPCs with the Council's caretaker distributor, receipting the supply of the components, and storing the components in a safe and secure location
- Maintaining stocks of other miscellaneous materials and components necessary to complete the work packages, including various sized spigot adaptors, connection cables and sealants
- Preparing the LEDs for installation under workshop conditions. Preparation includes programming the LED driver, fitting the lead cable to suit the install site, supply and fitting any spigot adaptors that may be required, fitting either a shorting cap or the LPC to the NEMA socket, and correctly closing and sealing the LED. Preparation includes completing and recording the required As-Built records
- Installing the LED on site and completing and recording the required As-Built records
- Disposing of all materials surplus to requirements in an environmentally responsible manner. In particular this includes the disposal of all HID lanterns and any others containing hazardous substances or vapours.

- Salvaging and safely storing any surplus items the Engineer may request be put aside for re-use. This includes recently installed LED lights that can be re-used elsewhere in the Council, but may not be compatible with the central management system to be installed as part of the transition to LED street lighting.
- Contract management and planning
- Safety and temporary traffic management
- Customer services

2.2 Contract Exclusions

Work on the lines company assets other than connecting to the load side of the fuse is excluded.

2.3 Contract Area

The contract area is bounded by the limits of Wellington City. It extends to Makara Beach in the west and includes the northern suburbs of Johnsonville, Newlands, Tawa & Linden, and those through to the harbour and southern foreshores. All Council Street Lights, Pedestrian Crossing Lights and Perpetuity Lights within the contract area are included under this contract.

The locations of street, pedestrian crossing and other lights within Wellington City are recorded in the RAMM database.

2.4 Indicative Quantities

There are approximately 18,000 street lights in Wellington City. Not all of these are included in the contract as some relate to the State Highway, some relate to accessway and walkways, while others have already been renewed with LEDs. The best estimate at this stage is there will be a total of around 16,000 lights to be replaced with LEDs under the 4 panellist contracts. Approximately 25% of these will be replaced with LED lights while the remaining 75% will be replaced by the other panellists. Approximately 40% of lights are on V category roads, and 60% on P category roads (Road Categories as defined in NZS 1158).

2.5 Ownership

2.5.1 Poles

Ownership of poles is shared between the Council and Utility Operators (Wellington Cable Car Ltd (Trolley Bus Poles), Wellington Electricity Ltd, Chorus, etc.). Ownership shall be assumed to be as recorded in RAMM, until such time as otherwise notified.

2.5.2 Lighting Equipment

The existing lantern and lamp including any sensor, shield, control gear, outreach arm, and cable from the deemed point of supply to the lantern are the property of the Council. The deemed point of supply is:

- The fuse base at the base of a lighting pole or;
- The line tap fuse holder for an overhead supplied lantern.

The point of supply fuses, fuse holders, electrical circuits to the line taps and the line taps themselves are the property of the Lines Company. Refer Wellington Electricity's Electricity Network Standard: Street Lighting Installation Requirements regarding working on these assets.

2.6 Regulations and Standards

Work carried out under this Contract shall comply with the relevant portions of the following regulations, standards or other documentation and their current revisions:

- Electricity Act 1992 and Amendments

- Electricity Amendment Act 2006
- Electricity Regulations 1997 and Amendments
- Safety Manual – Electricity Industry 2004
- AS/NZS 1158 Road Lighting series
- Health and Safety at Work Act 2015 and Amendments
- NZECP 34: 2001 NZ Electrical Code of Practice for Electrical Safe Distances
- Wellington Electricity's Electricity Network Standard: Street Lighting Installation Requirements
- Health and Safety in Employment Regulations 1995
- NZTA "Transit New Zealand Code of Practice for Temporary Traffic Management (TNZ COPTTM)", along with its Local Roads Supplement.
- Relevant approved Codes of Practice
- The Council's "Code of Practice for Working on the Road" (August 2006) (available on the Council Website – www.wellington.govt.nz/services/rdstraffic/working/roads/codework)
- AS/NZS 3000:2000 and Amendments – Electrical installations (known as the Australian/New Zealand Wiring Rules)
- Any other relevant statutes, regulations, standards or Codes

The contractor is required to complete and issue Code of Compliance Certificates for all new installations, re-installations and lighting asset upgrades.

3 Council and Contract Objectives

The Contractor shall undertake Works in accordance with the requirements of the Contract to achieve the following objectives:

- To complete the accelerated rollout of LEDs across the city before the end of June 2018 in order to maximise the enhanced subsidy opportunity offered by NZTA for this work
- To provide sound engineering, environmentally sustainable and value for money solutions to ensure the Council's street lighting assets continue to function at the levels of service referred to in the Transport Asset Management Plan so that:
  - The safety of the city's roads and pedestrian areas is maximised, and
  - The total life cycle maintenance and operational costs of the Council's street lighting facilities are minimised.
- To prepare for the installation and activation of a Central Management System (CMS) by programming each LED driver prior to installation, and installing the selected LPCs on all LEDs as part of their installation
- To deliver an affordable, accelerated rollout of LEDs within the Council's approved budgets
- To minimise any disruption and interference the execution of Works may have on the public
- To accurately capture and transfer to the Council in a clear and accessible manner and format, information relating to outreach arms that may be in poor condition, to assist Council make informed asset management decisions
- To identify and implement opportunities to more effectively and efficiently deliver these Works and services

- To minimise the Council's contract administration costs
- To support viable, long-term market competition
- To secure the benefit of emerging technology and lowering costs throughout the term of the Contract

4 Key Success Factors

The Council has identified the following as key factors essential for the successful achievement of the Contract Objectives:

4.1 Collaborative management culture

This Contract requires the Contractor to enter into a collaborative management relationship with the Council. This relationship will promote prompt, constructive communication and a problem solving approach between the parties. The objective in adopting these collaborative techniques is to ensure that the Contract operates smoothly and to avoid operational problems escalating into disputes.

The Contractor's Statement of Affirmation provided with its tender confirming its commitment to working within this collaborative culture will be considered indicative of its contract management attitude.

The Contractor shall work together with the Council in this collaborative fashion to achieve the Contract objectives.

The use of collaborative management techniques and the adoption of this style of relationship management as set out in the Specification does not in any way imply an alliancing contract, any fiduciary obligations, obligation of good faith, partnership and/or joint venture between the parties or derogate from each party's respective rights under the Construction Contracts Act 2002 or the dispute resolution processes set out in this Contract or available at law.

This collaborative management relationship is outlined further in Volume 2 of these Contract Documents, Section 4, Activity Specifications, Activity Specification RT 000-001 Contract Management and Planning.

4.2 Competent staff and adequate resources

The Contractor shall have sufficient capacity, experience, competence, management capability and technical expertise to successfully:

- Complete Works to the required standard and to the agreed programme within the specified times
- Maintain information management system records in order to accurately satisfy the contract requirements.
- Fulfil the contract reporting requirements
- Present themselves professionally in everything they do and provide excellent customer service to road users, residents and businesses

4.3 Continuous improvement

The Contractor shall demonstrate a continuous improvement culture and capability to pro-actively identify opportunities to improve efficiency, service delivery, and environmental sustainability. The Council values innovative solutions which provide real value to the contract, and therefore to the Council, Contractor, road users, residents, businesses and ratepayers.

4.4 Adoption of Council values

The Council's values are founded on two key principles: integrity and respect.

Competency, commitment and confidence are all values essential to the organisation. All Council employees, contractors and consultants must reflect these values. The public regards anyone who provides the Council a service in exactly the same light as they regard Council employees. Service providers must demonstrate through their actions how their organisation reflects the Council's vision and values in providing quality Works.

The Council's values reflect the Council's commitment to serving the Wellington community to achieve the outcomes which describe the type of city that the community has indicated it wants to live in. These community outcomes are detailed in the Council's 2040 Strategy: Smart Capital.

The Council conducts its business, internally and externally through contractors in a fair and ethical way. As a good employer it requires any contractor to abide by the same standards it sets itself. The Council needs to be confident that any contractor carrying out work on its behalf is customer focused, works within any legal requirements and can be seen to fit the Council's image at all times.

4.5 Integrated approach

The Council expects that the collaborative culture, Contract objectives, and Council values are strongly linked throughout the Contractor's organisation to achieve an integrated approach to the Contract and the specified Works. The Council expects that all Contractor's staff understand how their tasks and responsibilities contribute to achievement of the Contract objectives.

5 Type of Contract

5.1 Contract Type

This Contract is a Measure and Value contract.

Payment for Measure and Value items shall be made on the basis of the measured quantity as determined by the Engineer of each item of Work carried out at the rate set out in Volume 3 of these Contract Documents, Section 5, Schedule of Prices and Basis of Payment, provided the Work is completed in compliance with the requirements of the Contract Documents.

5.2 Contract Improvement

In the collaborative management culture of this Contract it is expected the Contractor and Council will work together to make improvements in the quality, effectiveness, and efficiency of the Works, services and processes to meet the Contract objectives.

Extensive communication processes required by the Contract provide good opportunities for a regular exchange of ideas.

6 RAMM

RAMM and a number of its different applications will be used as the principle tool for managing the Contract. It is expected that the Contractor will be familiar with this system.

The Council will provide Contract specific training, where required and at its own cost, to the Contractor's staff in the use of RAMM by the Council for this Contract. The Contractor shall ensure sufficient of its staff are trained and capable of stepping in to seamlessly provide the RAMM service required of the Contractor, in the event of Contractor staff absence or staff turnover.

7 Working on the Road

All work must be carried out in accordance with the Council's Code of Practice for Working on the Road, August 2006, except as may be extended or modified by requirements in these Contract Documents. A copy of this Code of Practice is available on request. A copy may also be viewed on the Council website: www.wellington.govt.nz/services/rdstraffic/working/roads/codework

Where there is conflict between the Contract Documents and the Code of Practice for Working on the Road, the Contract Documents shall take precedence.

In addition to the requirements of this Code the following shall also apply:

Road Work Notices, Clause 5 of this Code, are not required from the Contractor. Any issues requiring Prior Approval must be resolved with the Engineer or his representative before a job commences on Site. The Contractor is exempt the Road Works Notice fees for all works carried out under this Contract.

Hours of work - Hours of work must comply with the times provided in the WCC Code of Practice for Working on the Road, Aug 2006, except that the list of streets with restricted hours and the restricted hours shall be replaced with the streets and hours outlined in the list of 'Streets with Restricted Hours' contained in Volume 4 of these Contract Documents, Section 8, Appendices.

Work on routes used by trolley buses throughout the city may not be possible during peak traffic hours. Outside peak hours the bus company can meet most passenger demand by using its diesel bus fleet. During off-peak periods it is possible for the bus company to turn off the overhead wires to facilitate roadworks. All such arrangements will need to be made by the Contractor directly with the bus company, at the Contractor's expense.

Where required by the Contract Documents, or where the Engineer agrees that it is necessary to carry out Work during hours of darkness or outside the hours specified in the 'Code of Practice for Working on the Road, Aug 2006' the Contractor shall be responsible for taking all reasonable steps to minimise disruption to the public. This includes, but is not limited to liaising with the Noise Control Officers and the Events Co-ordinator for Wellington City.

Any restrictions on the Work required by Noise Control or the Street Events Co-ordinator shall be strictly complied with.

Temporary Access to Properties - The Contractor shall maintain adequate pedestrian and vehicular access to properties affected by any of the Works at all times.

The Site shall be kept clear of obstacles, construction materials and tools etc.

Damage To Adjoining Properties - The Contractor will be responsible for all damage caused as a result of its operations and will respond within 48 hours to any complaint to facilitate repairs or cleaning.

Underground Services - The Contractor shall be responsible for arranging with the relevant Service Authorities the timing of any meetings, mark-outs of service positions etc., required for the smooth running of the Works. The Contractor shall make allowance for all costs incurred for service mark-outs within its rates.

Protection of Adjacent Assets - The Contractor shall take all necessary precautions so that assets adjacent to the Works are undisturbed. Should it not be possible for the Contractor to adequately protect the assets in-situ, the Contractor shall carefully record the condition, extent and other characteristics of the asset, and either:

- Carefully remove the asset from the vicinity of the Works, and reinstall to the pre-works condition following completion of the Works. The Contractor shall be responsible for the removed asset from the time of removal until its reinstallation
- Remove and replace the asset should reinstallation not be possible.

Where underground services (power, gas, communications, 3-waters, etc.), are encountered by the Contractor, and the Engineer determines the Works can be carried out without the need to permanently relocate the service, then the associated costs of supporting, protecting and carefully working around the service are the responsibility of the Contractor. Where the Engineer determines the service is required to be permanently relocated away from the Works, then the associated costs of relocation are the responsibility of the Principal.

Dust Control/ 'Air quality' - The Contractor shall ensure all Work is carried out to comply with air quality requirements of the Greater Wellington Regional Council.

Discharge to Stormwater System - The Contractor shall ensure all Work is carried out to comply with stormwater discharge requirements of the Greater Wellington Regional Council. Precautions must be put in place when sawcutting for trenching Works to ensure washings do not enter stormwater sumps or other components of the stormwater network. The Contractor shall take all practicable precautions to protect against sediment laden discharges to the stormwater receiving systems, especially in situations where unbound surfaces are exposed to erosive stormwater runoff.

8 Fire Hydrant Permits

Should the Contractor wish to take water from a fire hydrant for the Works, they are required to hold a fire hydrant permit issued by Wellington Water. To obtain this permit, the Contractor shall contact Wellington Water, and complete and submit an application. The Contractor will then be issued with a permit number valid for a maximum of 3 months, after which time the Contractor will be required to apply for an extension. There is no fee for the permit however there are charges for the water taken. Currently these are $2.15 per cubic meter, with a minimum charge of $20 per month (both amounts inclusive of GST). Payment is to be made monthly at the Wellington City Council service desk, ground floor 101 Wakefield St Wellington.

The Contractor is to comply with all conditions of the permit..

9 Risk allocation

The following table sets out the high level risks to be borne by the Contractor, and where applicable to be recognised in its tendered rates. Please note this not an all-inclusive, exhaustive list.

Risk allocation for Contractor

Risk Item	Comment/Responsibility
Underground / overhead services	The Contractor shall be responsible for locating and protecting all underground services, and the associated costs. The Contractor shall be responsible for ensuring that it is suitably qualified/ registered to adjust or relocate service covers etc. The Contractor shall likewise obtain all permits necessary to work in the vicinity of overhead cables, and meet any costs associated with damage to these services caused by the Contractor.
Co-ordination with Utility Companies and other similar parties	The Contractor shall be responsible for any delays and costs arising from co-ordination by the Contractor with work that conflicts with Utility Companies and other similar parties.
Weather and response times	The Contractor shall recognise inclement weather may impact on aspects of the work and shall make due allowance for this.
RAMM	The Contractor shall be responsible for using RAMM as specified within the Contract. The Contractor shall allow for occasional times when RAMM may fail to operate and shall notify the Council at the earliest opportunity in the event of a RAMM system fault. The Contractor shall not be responsible for repairs to the RAMM system and shall not incur penalties for deadlines missed due to RAMM failure.
Design	The Contractor shall be responsible for all designs undertaken by the Contractor.
Programming	The Contractor shall make all due allowances for items which may reasonably be anticipated by, or managed by the Contractor, which may affect work programming, such as inclement weather, traffic delays, plant and subcontractor performance, delays due to repair of damage

Risk Item	Comment/Responsibility
	caused by the Contractor and delays caused by other parties with a presence in the road.
Clarification of nature of complaint	The Contractor shall be responsible for using the necessary resources to confirm the nature and responsibility of any public complaint or enquiry it receives or otherwise becomes aware of.
Damage Claims	The Contractor shall be responsible for using all resources to manage and resolve all damage claims arising from its activities.
Environmental damage	The Contractor shall pay all costs incurred (regardless of who incurs those costs) in clearing up any environmental damage or contamination caused by reason of Works carried out under this Contract by the Contractor or its subcontractors.
Public Complaints	The Contractor shall be responsible for addressing all reasonable public complaints made against the Contractor for the services provided by the Contractor.

10 Response Times

The following table sets out the standard Contractor response times for attending to enquiries and other Contract response needs:

Activity	Response Time
Customer Enquiries	
Contractor responds to customer enquiries received by the Contractor via telephone or RAMM	Refers enquiry to the Engineer within 1 Working Day of receiving notification
Customer Written Requests for Service	
Contractor responds to written customer service requests received by the Contractor	Refers enquiry to the Engineer within 1 Working Day of receiving notification
Damage Complaints	
Contractor responds to complaints regarding damage caused by Contractor to private property	Issues a written response to damage complaints within 2 Working Days of receiving notification.

11 Work on Utility Company Assets

The Contractor is responsible for planning and arranging the relocation or alteration of utility company assets where required to complete the Contract Works. These assets may include, but are not limited to, service covers, pipes, cables, ducts, poles, overhead lines etc.

12 Competence of Staff

The Contractor's staff shall be suitably trained, qualified and competent in the responsibilities and tasks required of them. Staff undergoing training shall be under the direct supervision of a competent and qualified person.

13 Code of Conduct

The Contractor shall comply with the Council's Code of Conduct. A copy of this Code is included in Volume 4 of these Contract Documents, Section 8, Appendices. Some of the matters covered by the Code of Conduct include:-

- Confidentiality
- Personal behaviour
- Control of information/ comments to News Media
- Integrity
- Political neutrality

14 Communication Availability

The Contractor shall undertake all communication with the Council via the Engineer or their Representative.

To facilitate this communication, at a minimum, the Contractor shall maintain the following:

- a staffed telephone during normal business hours (8.00am to 5.00pm Monday to Friday)
- monitored email
- a pager or after hours monitored cellphone for receiving and responding to 24/7 text alerts from the Call Centre
- a high speed internet connection
- a street address for receiving any couriered mail, or posted hardcopy mail
- a PO Box number (optional) for posted hardcopy mail

15 Recoverable Costs

Where damage estimated to exceed $400 is caused by road users or others to the streetlighting network assets, and where the Contractor is able to identify the person(s) responsible for causing the damage, the Engineer or his Representative may seek the Contractor's assistance in preparing a claim in order to recover costs through the Council's appointed risk advisors. The provision of this assistance will be at no extra cost to the Council.

Such damage may include, but is not limited to, damage from motor vehicle accidents and damage caused by acts of vandalism. Assistance may include the supply of either a Police Report or an eye witness account given by a person prepared to appear in court, should the need arise.

16 Completion

On completion of an individual Job, the Contractor shall remove all Temporary Works, surplus materials and debris, and leave the whole area in a clean and tidy condition to the satisfaction of the Engineer.

Work will be satisfactorily completed provided the following criteria where relevant to this contract have been complied with:-

- Work carried out in the right location
- Work carried out to the specifications, drawings and any other direction given by the Engineer of their Representative
- Assets being cleaned, repaired, renewed or upgraded, presented and functioning correctly on completion of the work

- All required reports, certificates, data, photos, as-built plans, customer call backs etc., have been submitted/completed, and all necessary entries have been recorded in RAMM
- Site area has been left in a clean and tidy condition
- All other work on the same Site and/or RAMM Claim Lines issued under the same RAMM Dispatch have also been completed
- Where relevant, all disturbed roadmarking, signs and other Council and private fittings or features removed or damaged during the Works are reinstated and any agreements made with parties affected by the Works in regard to reinstatement or compensation are fully executed, and any temporary Works are fully decommissioned
- The Contractor's staff directly responsible for the Site Works have completed and signed the Contractor's quality control checklist indicating completion of the Works
- For new installations, re-installations and Upgrade Works where required, a Code Compliance Certificate has been completed and submitted to the Engineer or their Representative
- Non-compliance with any of the above will be deemed as defective Work and the Engineer or their Representative will change the status of the relevant RAMM Claim Line to 'On-hold'.

The Contractor will be responsible for remedying the defective Work or Non-Compliance matter and then changing the RAMM Claim Line status back to 'Completed' with notes added to explain the action taken. The Contractor shall then represent the RAMM Claim Line for reconsideration by the Engineer or their Representative.

An individual work job shall be considered complete and claimable only when all aspects of the RAMM Dispatch are complete.

17 Supply of Materials

17.1 Supply of Materials

With the exception of LEDs and LPCs the Contractor shall supply in sufficient quantities all materials necessary for the completion of the Works. The LEDs and LPCs have been supplied by the Council, and the contractor is to make arrangements with the Council's caretaker of this stock for sufficient items to be delivered to the contractor to satisfy the contractor's committed forward workload.

The Contractor shall be responsible for determining the correct stock levels to ensure assigned work is completed to programme.

All materials shall comply with the appropriate NZ Standard Specifications.

Stockpiling or storage on road reserve is not permitted without the prior written approval of the Engineer or his Representative.

17.2 Disposal of Surplus Items

Items no longer required for the Contract are to be disposed of by the Contractor in compliance with all statutes, bylaws of government and local and other public authorities. The Engineer or their Representative may from time to time request the Contractor supply a certified copy of the schedule of quantity and the certificate of destruction for items disposed of containing hazardous materials.

The Contractor is encouraged to use recognised recyclers wherever possible, rather than the landfill, when disposing of items surplus to the Contract.

17.3 Reusable Items

The Contractor shall assist the Engineer or his Representative in identifying items for reuse by the Council where it is economical and practical to do so. Examples of items for reuse could include LED units previously installed, but not fully compatible with the CMS to be installed. The Contractor shall salvage, store, catalogue and manage such items, and on completion of the Contract, make any remaining items available to the Council at no cost to the Council. Items on the inventory remain the property of the Council.

18 Local Government Official Information and Meetings Act 1987

The Council has an obligation to provide certain information concerning its business to interested third parties (e.g. government agencies, Ombudsman's Office, Members of Parliament, Auditor General, the press and public).

Sometimes requests may be made directly to the Contractor who shall not divulge information but ensure that the request is reported immediately to the Engineer or their Representative. The Council will take the lead in responding to the request and the Contractor will cooperate in formulating the response. The Contractor's staff shall not respond, verbally or otherwise, to any enquiry which is critical of the Council and could lead to any claim or other similar action.

All information provided or assistance rendered under this section shall be part of the Contractor's general obligations to the Council and shall be at no additional cost to the Council.

Where the Contractor or any of its staff become aware of any incident, poor administration, accident or other matter which may give rise to an Ombudsman enquiry, a claim or legal proceedings it shall notify the Council immediately. Such notification shall include all relevant information to enable the matter to be fully investigated.

19 Audit Requirements

Under some circumstances, the Contractor will be required to allow the Council Internal Audit, NZTA or Audit NZ access to books and records, facilities and staff for the purposes of auditing the requirements of relevant legislation, which affects the Council. All costs of complying with these audit requirements are payable by the Contractor.

Situations that may require audit are when the:

- Contractor collects revenue on behalf of the Council
- Revenue collected by the Contractor affects the value of their Contract payment
- Contractor purchases goods or services on behalf of the Council
- Contractor uses operational assets owned by the Council
- Contractor inputs significant information into the Council's computer systems
- Council reports the Contractor against annual plan performance measures
- Contractor's own audit or internal audit, by arrangement with the Council, may be acceptable as an alternative to the Council's Internal Audit, NZTA's or Audit NZ's inspection of records.

20 Deduction Rates

Where the Engineer is entitled under this Contract to make deductions for work undertaken by the Engineer or his staff, the deductions will cover time and expense costs incurred based on the following charge out rates:

Engineer to the Contract [redacted]

Engineer's Representative	[redacted]
Other personnel	[redacted]
Vehicle	[redacted]
Expenses	as incurred

(All costs exclusive of GST)

ACTIVITY SPECIFICATION

RT 000-001
Contract Management and Planning Street lighting

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ACTIVITY SPECIFICATION

RT 000-001
Contract Management and Planning
(Street lighting)

1 Scope

The Work to be executed under this specification consists of providing the management resources, activities, processes and systems necessary to ensure the timely and complete delivery of the specified Works.

2 References

New Zealand Standards and Wellington City Council Specifications are referred to in abbreviated form (e.g. NZS1234, RT 000-001)

For convenience full titles of those referred to in this specification are given below:-

Specification RT 000-002	Safety and Traffic Management
Specification RT 000-003	Customer Service and Communication
Specification RT 000-005	Contract Quality Assurance
RAMM	A computer based asset management system hosted by RAMM Software Ltd

3 Collaborative Contract Management

The Contractor is required to provide the personnel, commitment and resources to participate in the collaborative management and administration of this Contract as outlined in this Specification and elsewhere in the Contract Documents.

4 Contract Responsibilities

The Contractor is required to establish a contract management structure which will deliver to the Council the management aspects of the Contract. The structure shall identify, by name, the responsible representative(s) for each identified aspect of the Contract including but not limited to:-

- Overall contract management and responsibility
- Customer service and communication (refer specification RT 000-003)
- Safety and traffic management (refer specification RT 000-002)
- Quality assurance (refer to specification RT 000-005)
- Planned Works
- RAMM and other IT applications
- Contractor’s staff training and induction in relation to this Contract.

A responsible representative may represent the Contractor in several aspects of the Contract.

As far as possible, the Council would prefer stability with the Contractor's structure, and minimum turnover of staff in key areas of the operation. If there is to be a change, then the Contractor is required to ensure the replacement person is properly introduced to their new position so as to minimise disruption of the Works.

The Contractor's responsible representatives shall be introduced to the Engineer and his representatives at the earliest opportunity. Any changes to appointments or responsibilities shall likewise be advised to the Engineer at the earliest opportunity.

5 Contract Systems and Resourcing

The Contractor is required to implement contract management systems through which the Contractor will deliver the Works. Systems include but are not limited to:-

- Contract works co-ordination, planning, programming, progress monitoring and reporting
- Safety and temporary traffic management
- Customer service and communication
- Quality management
- Liaison with the Council (meetings, RAMM updates, reports preparation and submission, etc.)
- Resource allocation, including supplier and subcontractor engagement
- Job management (planning, resourcing, co-ordination, quality control, purchasing, Subcontractor management, job completion and claiming)
- Relevant and appropriate information and communication technology
- Preparation and presentation to the Engineer of a number of management system plans including but not limited to:
  - Contract Quality Plan
  - Safety Management Plan
  - Temporary Traffic Management Plans
  - Communications Plan

6 Work Approvals

The Engineer will identify the Works to be carried out by the contractor, issue these to the contractor at regular intervals and monitor the contractor's performance in completing them.

There is no facility within this contract for the Contractor to raise jobs and approve them.

7 Work Programmes

The Contractor is required to prepare and submit its updated and committed forward work programme to Engineer. Where progress is falling behind schedule, the programme shall show how lost time will be recovered, with appropriate commentary.

All programmes shall be prepared and presented in a standard programme format acceptable to the Engineer. This may include use of MS Project, Excel spreadsheet,

or where appropriate, via RAMM. The Engineer or their Representative will provide written approval or otherwise of the presented programmes, with a timeframe in which any corrections or amendments are to be made to the programme(s).

8 Reporting

Exception Reports

The Council seeks to minimise the number of routine reports the Contractor is required to submit under this Contract. The Contractor however is required to enter a comprehensive suite of data into RAMM as required by these Contract Documents. From this data the Engineer or their Representative will be able to retrieve necessary information to compile the Council's operational reports. It is therefore essential that the Contractor adheres to entering into RAMM all required information accurately, completely and in a timely manner.

The Contractor is required to prepare and submit a monthly Exception Report which is intended to provide information on events that have occurred and issues that have arisen during the month, and to alert the Engineer of possible or impending problems. The Engineer or their Representative may request items to be included in the exception report, however in the event of no specific request, topics may include the following:-

- Incident reports (health and safety, traffic management, customer complaints etc)
- Variance between the approved programme of work, and work completed, and steps taken or planned to be taken to address the variance
- Performance self-monitoring results
- Contractor reports where quality has been an issue (poor workmanship, substandard materials, poor customer response, etc.)
- Reports relating to any problems in the use of RAMM
- Reports relating to any problems in the Contractor's dealings with the Lines Company
- Reports relating to any Contractor organisational or staffing changes, or Contractor process changes that will have either a positive or negative impact on the performance of the Contract.

The Contractor shall provide the Engineer with an electronic and two hard-copies of the monthly Exception Report by the end of the 5th Working Day of the month. The report shall be accurate, professional, and signed by the Contractor's Contract Manager.

9 Contract Meetings

The Contractor is required to attend regular meetings with the Council representatives. This will involve the preparation, travel, attendance, participation and follow-up by the appropriate responsible representatives of the Contractor with the Council representatives. This includes meetings at the following levels and frequencies:-

- Panel of Contractors monthly meetings
- On-Site contract meetings as necessary

- Other meetings as may be requested from time to time by either the Contractor or the Council

Unless arranged otherwise, meetings will be held at the Council offices in Wakefield St. Contractor costs associated with attendance at meetings (eg travel, parking etc) will be borne entirely by the Contractor.

10 RAMM

10.1 Definitions

Note this is a generic description of RAMM and not all aspects described will relate to this contract.

RAMM – (Road Assessment, Maintenance and Management) is a proprietary software package owned and operated by RAMM Software Ltd, which the Council uses for the management of its roading assets. RAMM contains the asset registers, and records faults identified and work done on each asset and will be used in the management of this contract.

OneCouncil– A propriety computer-based system, which the Council uses for the management of assets, customer requests for service, corporate financials and various other functions. For the purposes of this contract, OneCouncil will be used by the Council's Contact Centre to record Requests for Service and Customer Enquiries and to make payments from via an interface to the contractor.

RAMM – OneCouncil Interface – The Council has developed a software solution for transferring requests for service between OneCouncil and RAMM. The interface takes an appropriately logged call in OneCouncil and transfers the information electronically to RAMM. RAMM can then be used to manage the request for service, with appropriate entries by the Contractor, and the information is transferred back to OneCouncil by the RAMM - OneCouncil Interface.

10.2 RAMM Modules

RAMM contains a number of modules used for completing various tasks. Those specifically relating to the contract works are listed below:

RAMM Contractor

RAMM Contractor will be used by the Contractor for managing the day to day functions of the contract including recording work completed and claiming for payment.

Pocket RAMM – RAMM Patrol

Pocket RAMM is a module of the RAMM Software designed specifically for using in the field. It is expected that the Contractor’s field crews will use Pocket RAMM for recording all work carried out. RAMM Patrol forms part of Pocket RAMM and is specifically designed for touch screen tablets.

RAMM GIS

RAMM GIS is a module of the RAMM Software designed specifically for viewing RAMM data in a spatial format. It is currently being further developed to increase its functionality.

RAMM for Windows

RAMM for Windows holds the asset information which Pocket RAMM and RAMM Contractor use as their base data.

10.3 Use of RAMM and Associated Systems

The Council wishes to use RAMM to administer the Contract Works that the Contractor undertakes on its behalf including responses to third party enquiries (such as complaints about service failure), to administer the contract claims and payments, to monitor the contract performance on the basis of records entered in RAMM by the Contractor and by the Council, and to collect data on a per individual asset basis that will assist both the Council and the Contractor in managing those assets.

The Contractor is responsible for its use of the RAMM system and for accuracy of data inputted by the Contractor as required under this contract.

A 24 hours per day, 7 days per week service is required. The Contractor shall also ensure that its staff members have sufficient mobility to provide the prompt service required and that a means of relaying messages to staff in the field is also available.

10.4 Support Provided by the Council

The Council will provide training regarding the Council's particular use of RAMM to the Contractor in the period after award of the contract and prior to commencement of responsibility for Works, and may periodically provide further reasonable training for new staff and refresher courses for existing staff in this regard.

The Contractor shall appoint a member of its staff who shall become the Contractor's resident expert in the use of RAMM. It is expected that the Contractor's staff will approach this person in the first instance for assistance with RAMM. Likewise, any new staff appointed by the Contractor during the course of the contract will be trained in the use of RAMM by the Contractor's resident expert. Only in exceptional circumstances will the Council assist with training a new resident expert for the Contractor during the course of the contract.

10.5 RAMM as a Record of Contract Activities

The record of activities, action times, defects, work status, claims for payment, variations, performance monitoring information, and payments, duly authorised by the Engineer where appropriate contained in RAMM shall be taken to be the record of activities undertaken in the execution of this contract.

10.6 Use of RAMM and OneCouncil in the Execution of this Contract

This section describes the critical stages of the business process, but does not purport to replace the user instructions, guides etc. necessary for the correct use of RAMM or OneCouncil.

All activities or changes in status of any RAMM Dispatch assigned to the Contractor shall be logged within the response time appropriate to that RAMM Dispatch or within 1 Day of the activity or change in status if this is shorter.

Each RAMM Dispatch shall be logged. Each defect and RAMM Dispatch shall be allocated to the correct asset.

OneCouncil and OneCouncil IVR

The Council's Contact Centre uses OneCouncil for logging all requests for service received by the Council.

IVR is a technology that allows a computer to interact with humans through the use of voice and DTMF Tones input via a keypad.

The Council's IVR system for communicating with OneCouncil uses DTMF tones to update the status of a OneCouncil Enquiry.

The Contractor may choose to either use the supplied OneCouncil IVR or to log in to RAMM online to update the various statuses which will in turn be updated via the RAMM – OneCouncil Interface.

RAMM – OneCouncil Interface

The Council has developed a two way interface between RAMM and OneCouncil for updating relevant information in both OneCouncil and RAMM. All public enquiries entered into OneCouncil with appropriate services and subjects are transferred to RAMM as RAMM Dispatches with appropriate event codes. The Contractor is responsible for entering further event codes to reflect progress with those RAMM Dispatches that have originated in OneCouncil. The Interface is set up to transfer data at a predetermined interval.

10.7 Planned Works

All Works are Planned Works and require an Engineer approved RAMM estimate prior to work starting.

From time to time the Engineer may enter and approve RAMM Dispatches for completion under the Contract. Such RAMM Dispatches will workflow to the Contractor and can be taken by the Contractor as authority to proceed with the Works within the identified timeframe as specified in this contract.

Estimates

Prior to any Work starting that requires Engineer Approval the Contractor shall enter a RAMM Dispatch in RAMM with the appropriate Claim Items attached. The Claim Items shall be presented to the Engineer for approval prior to work starting.

The following items, where applicable, shall be attached to each RAMM Dispatch as multi-media items as part of the Estimate:-

- The Approved Traffic Management Plan
- A Record of any Service Cover Locations
- A Record of Line Marking Locations

Approval of the estimate by the Engineer shall constitute an instruction by the Engineer to complete the planned work.

Claims

Required attachments

The Contractor must make a claim for payment for each completed Claim Item on a RAMM Dispatch in RAMM by “Presenting a Claim”. Partially claimed RAMM Dispatches will not be processed.

The following records shall be entered into RAMM prior to “Presenting a Claim”:-

- All records of information required to be collected under the site assessment
- All records of information required to be collected in preparing the LED prior to installation
- All record of information required to be collected following installation of the LED.

Asset Information

Where the RAMM Dispatch is related to work carried out on a specific asset the RAMM Dispatch shall be linked to the appropriate asset in RAMM.

RAMM Dispatch Changes

The Contractor is not required to seek approval of a change to a RAMM Dispatch until one of the following conditions is met:-

(a) Any RAMM Dispatch Item Quantity changes by more than 10% or the total value of the RAMM Dispatch changes by more than $2,000.00

(b) The RAMM Dispatch Item that the Contractor intends to claim for is not currently part of the “Approved Estimate”

Where a change to a RAMM Dispatch requires approval, the Contractor shall add or adjust the appropriate RAMM Dispatch Item and present or re-present an Estimate for approval by the Engineer. All variations to RAMM Dispatches shall be entered and approved prior to the Contractor presenting a Claim for the Work.

Completion

Upon completion of any RAMM Dispatch the Contractor shall change the status of all RAMM Claim Lines to “Presented”. This is taken to be a Claim by the Contractor that the Work has been satisfactorily completed including all items as required in the completion definition, Volume 2 of these Contract Documents, Section 3, ‘General Requirements’.

The Engineer may require a change of status of a RAMM Claim Line where he considers the work has not been completed. Such changes shall be administered through RAMM so that the records always reflect the status of the RAMM Dispatch. The use of RAMM in no way alters the authorities and responsibilities that the parties have under the contract.

10.8 RAMM Dispatch Status Management

The date the statuses of RAMM Dispatches reach certain progress milestones is used to monitor Contractor performance. It is particularly important that all RAMM Dispatch Statuses are up to date at the end of each calendar month in order to determine whether the works is accruable in the Council’s financial systems.

Standard RAMM Dispatches

The Contractor shall maintain the Status of each RAMM Dispatch via the RAMM Claim Lines to reflect progress with the work using the following RAMM Dispatch Statuses:-

RAMM Status	Description
Entered	RAMM Dispatch Entered
Dispatched	Work is assigned to the Contractor but not started yet
Started Work	The Contractor is on site and work has commenced
On Hold	Work is On Hold and may be completed at a later date
Complete	Work on site is complete

No Action Required	The work outlined by the RAMM Dispatch is not required

RAMM Dispatches linked to OneCouncil

In addition to maintaining the RAMM Dispatch Status the Contractor shall also maintain the RAMM Event Codes required to update OneCouncil. The following interface event codes shall be used:-

RAMM – OneCouncil Interface Event Codes

(Note – The RAMM One Council interface is currently being rolled out, and some details provided in the following table may be updated in the early stages of the contract. The table is the complete list, however many codes are not applicable to this contract)

OneCouncil Enquiry		RAMM Dispatch Status		RAMM Event Code		Direction	Notes
Code	Description	Code	Description	Code	Description		
ES05	Advised Owner			AO	Advised Owner - Council	OneCouncil -> RAMM	
ES76	Advised Owner - Contractor			AD	Advised Owner - Contractor	RAMM -> OneCouncil	
ES06	Pending			PD	Pending	OneCouncil -> RAMM	If the Contractor requires extra time they ring the appropriate Infrastructure staff member and ask them to change the Enquiry status.
ES09	Reject			RJ	Reject	RAMM -> OneCouncil	
ES10	Enquiry Issued to Contractor	E	Entered	EI		OneCouncil -> RAMM	This is the trigger that the Enquiry needs to be Transferred to RAMM
ES11	Completed			CP	Completed - Council	OneCouncil -> RAMM	
ES74	Completed - Contractor			CM	Completed - Contractor	RAMM -> OneCouncil	
ES12	Cancelled			CL	Cancelled	OneCouncil -> RAMM	If the Enquiry is Cancelled before it is Transferred to RAMM, the Interface won't transfer it.
ES26	Information Added			IA	Information Added - Council	OneCouncil -> RAMM	
ES75	Information Added - Contractor			IN	Information Added - Contractor	RAMM -> OneCouncil	
ES41	Work Completed			CC	Work Completed - Council	OneCouncil -> RAMM	Used to update RAMM with changes to OneCouncil from IVR
ES77	Work Completed - Contractor			WC	Work Completed - Contractor	RAMM -> OneCouncil	
ES50	Re-Logged	E	Entered	RL	Re-Logged	OneCouncil -> RAMM	This will add a new Enquiry to RAMM but it won't transfer all the Customer Information. Hope to do this in a future

OneCouncil Enquiry		RAMM Dispatch Status		RAMM Event Code		Direction	Notes
Code	Description	Code	Description	Code	Description		
							release.
ES51	Acknowledged			AK	Acknowledged – Council	OneCouncil -> RAMM	Used to update RAMM with changes to OneCouncil from IVR
ES78	Acknowledged - Contractor			AC	Acknowledged – Contractor	RAMM -> OneCouncil	
ES55	Re-opened			RO	Re-opened	OneCouncil -> RAMM	
ES71	Transferred to RAMM	E	Entered			RAMM -> OneCouncil	This status is added to OneCouncil when the Interface responds with a successful creation of a corresponding RAMM Dispatch so it doesn't need to be added in RAMM

The Event Codes of RAMM Dispatches linked to OneCouncil must be updated to reflect progress with resolving and responding to the RAMM Dispatch as appropriate.

10.9 Payment Approval Process

The Engineer will approve each RAMM Dispatch for payment in RAMM. Where the Contractor has not provided the required service the applicable RAMM Claim Line will be placed “On Hold” and the Contractor will be advised of the reasons for with-holding payment by the Engineer updating or adding a RAMM Claim Line Note in the RAMM Dispatch. The Contractor will be responsible for extracting the detail of, and remedying any identified defect in the work indicated by the RAMM Claim Line Note.

Payment will be released when the Contractor has completed the works satisfactorily and has re-presented the RAMM Claim Line for payment.

Where the reason for placing the RAMM Claim Line on hold is of a serious or repetitive nature then the Engineer may issue an NCR to the Contractor in accordance with Volume 2 of these Contract Documents, Section 4, Activity Specifications, Activity Specification RT 000-006, Performance Monitoring.

11 Assessment and As-Built Records

The Contractor shall supply to the Engineer sufficient information for entering assessment and as-built records into the Council’s systems.

The Engineer may provide training in recording and entering the required records where required.

Further information on recording and entering assessment and as-built records is provided in Volume 2 of these Contract Documents, Section 4, Activity Specifications, Activity Specification RT 000-020 Assessment and As-built Records.

ACTIVITY SPECIFICATION

RT 000-002
Safety and Temporary Traffic Management
Street lighting

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ACTIVITY SPECIFICATION

RT 000-002
Safety and Temporary Traffic Management (Street lighting)

1 Scope

The Work to be carried out under this Specification consists of managing all aspects of safety within the contract, including temporary traffic management.

2 References

New Zealand Standards, and Wellington City Council Specifications are referred to in abbreviated form (e.g. NZS1234, RT 000-001)

For convenience full titles of those referred to in this specification are given below:-

HSW Act	Health and Safety at Work Act 2015
Code of Practice for Working on the Road	Wellington City Council Code of Practice for Working on the Road: August 2006. Note: This Code will be replaced by a National Code of Practice for Working on the Road. Until such time as the new Code is published, the Council's existing Code will apply.
Local Roads Supplement	Temporary Traffic Management for Local Roads – Supplement to TNZ COPTTM, September 2005

3 General Obligations

The Contractor must be aware of, and comply with the requirements of the Health and Safety at Work Act 2015 (HSW Act) and amendments and relevant Codes of Practice insofar as they affect delivery of the Works. In particular:-

a) When carrying out work at a site the Contractor acknowledges that as between the contractor and the Council the contractor manages or controls the workplace and will comply with the requirements of the HSW Act accordingly

b) The Contractor shall appoint a single person as the 'Safety Representative' for the Works. The Safety Representative shall be the primary point of contact on all health and safety matters. The Contractor will give written notice of the name and contact arrangements for the Safety Representative to the Engineer.

c) The Contractor shall comply with its, and shall ensure that all Subcontractors comply with their obligations under the HSW Act and all regulations made under the HSW Act and all approved Codes of Practice under section 222 of the HSW Act.

d) The Contractor acknowledges that it has the responsibility for identifying hazards and risks at or around the Site.

e) The Contractor will eliminate risks to health and safety so far as is reasonably practicable and if that is not reasonably practicable, minimise those risks as far as is reasonably practicable

f) The Contractor shall report all incidents and near misses involving any person (e.g. members of the public, road users employees, subcontractors and their employees and subcontractors), to the Engineer. All Notifiable Events under the HSW Act are to be notified to WorkSafe or other relevant authority, with a copy to the Engineer. A written report detailing the outcome of any internal enquiry required by the Health and Safety Plan shall be submitted to the Engineer within 5 working days of the incident or near miss occurring. All incidents where medical treatment or hospitalisation occurred or a near miss incident had the potential to be of a serious nature will be reported to the Engineer within 24-hours of the incident occurring and copy of the Contractor's investigation into the incident is to be provided upon request by the Engineer.

g) Where work is undertaken on the State Highway through the contract area, the Contractor shall maintain their company data in relation to this aspect of the work on the SafeStat website, and make it available to the NZTA. (http://etree.webhop.net/SAFESTAT/jsp/login.jspx)

h) The Council recognises the requirements of Roading NZ's "Guideline for Controlling Reversing Vehicles" as best practice and recommends that all suppliers working on this contract comply with it. (http://www.roadingnz.org.nz/sites/roadingnz.org.nz/files/Reversing%20Guidelines_0.pdf)

4 Health and Safety Plan

The Engineer will permit a staged process of Health and Safety Plan submission by the Contractor and acceptance by the Engineer as follows:

- Contractor submission of an outline Health and Safety Plan (during tender period)
- Contractor submission of generic Health and Safety Plan within 2 weeks of tender acceptance with Engineer acceptance of this generic plan within a further 2 weeks. The Contractor's generic plan should be as advanced as reasonably possible towards being a completed plan (see below), and as a minimum, in accordance with the requirements of any certified safety management system claimed by the Contractor
- Contractor ongoing staged Health and Safety Plan development, and Engineer acceptance of developments

The generic Health and Safety Plan shall address all elements of the Health and Safety Plan either by provision of required details or by reference to them. The staged development will involve expanding these details and references in order to complete the document to the Engineer's satisfaction. The Engineer will consult with the Contractor when setting priorities and timeframes for staged developments. The Contractor shall prepare and submit details to the satisfaction of the Engineer, within the time frames set by the Engineer.

The Health and Safety Plan shall provide signoff facility for the Contractor and the Engineer to record submission and acceptance of each stage of the Plan from outline, to generic, and then to each completed stage development.

The Health and Safety Plan will address how the Contractor will comply with the HSW Act and its health and safety obligations under the contract. The Contractor will develop and maintain the Health and Safety Plan and ensure that it is comprehensive and takes into account any changes in the HSW Act and any regulations made under the HSW Act.

The Contractor will provide any updates or revisions to the health and safety plan to the Engineer within 10 Working Days of making any such changes.

The Contractor's Health and Safety Plan shall incorporate the following together with all other matters that are required to be covered in the Plan in order to comply with the Contractor's obligations under the Contract:-

- The prior identification and assessment of hazards arising in connection with the Site and the Works and the steps proposed to eliminate or minimise hazards
- Procedures for the identification and management of new hazards arising during the carrying out of the Works
- Procedures for the management of safety on the Site generally including the allocation of responsibilities both within the Contractor's employees and as between the Contractor and the Contractor's Subcontractors
- The need for and provision of correct protective equipment and training in the use of protective equipment
- Standard work procedure methodologies to minimise hazards
- Procedures for co-ordination and consultation with separate contractors
- Procedures for safety training and safety induction of persons coming on to a Site
- Procedures for ensuring the safety of the public, including motorists, pedestrians and residents or occupiers affected by the Works. This includes providing details of any temporary bridging solutions such as using steel plates over open trenches or over new kerb and channel works.
- Identification and control of restricted areas
- The information, training, instruction, or supervision of the Contractor's employees engaged in carrying out the Works
- Safe work procedures (or references to them) for tasks with potential for serious harm
- A schedule of nominated staff with day to day health and safety responsibilities
- A schedule of health and safety meetings
- A list of the equipment that will be provided and used
- A copy of the accident reporting and investigation process
- Procedures for the monitoring of the health of the Contractor's employees, particularly those who are or are likely to be directly affected by a matter relating to work health or safety, and the conditions at the Site to prevent injury or illness arising from the Works as far as is reasonably practicable
- Specific procedures dealing with emergencies, operations, work permits and instructions relating to the Works in a timely way in order to comply with the HSW Act.
- Procedures for ensuring that the Contractor contracts with Subcontractors having the required safety and operational competence, that the Subcontractor's activities are co-ordinated with the activities of other contractors and persons on the Site, that all Subcontractors have proper health and safety plans and will comply with the requirements of the HSW Act and the contract
- The audit and inspection of the Contractor's health and safety procedures, the Works and the Site to ensure compliance with the safety requirements of the HSW Act and the Contract

- The monitoring procedures to ensure compliance with and performance of the system and ensure that the system is up to date
- The promotion of health and safety principles and encouraging of a commitment to health and safety by the Contractor's employees and Subcontractors
- Procedures for continually updating the risk register and Health and Safety Plan accordingly.

The Health and Safety Plan and its staged development will be reviewed by the Engineer and may be required to be improved or otherwise amended. No Works shall commence until the Generic Health and Safety Plan is reviewed by the Engineer and any concerns raised have been satisfactorily resolved.

No new Subcontractors shall be permitted on to the Site until their Health and Safety Plans have been reviewed by the Engineer and any concerns raised have been satisfactorily resolved.

Prior to commencement of any major Works as may be requested by the Engineer, the Contractor shall prepare and forward a Site specific Health and Safety Plan, including a Site specific Traffic Management Plan to the Engineer. The Contractor shall not commence these Works until the Site specific Health and Safety Plan has been reviewed by the Engineer and any concerns raised have been satisfactorily resolved.

5 Safety Competence

5.1 Safety Supervisors Competency

Supervisors should all hold within 3 months of commencement of employment on the Works, an industry recognised Supervisor's qualification relevant to the Supervisor's line of work.

5.2 Operator Competency

The Contractor shall ensure that all staff operating plant and equipment are qualified, competent and licensed to operate that plant.

The Contractor shall recruit staff with the appropriate skills and qualifications to safely and skilfully carry out the required work, and provide ongoing successful training to sufficient standards for the Contractor's staff and Subcontractors. The Contractor shall ensure these qualifications, including any relevant licences, are kept up to date and current.

Copies of records relating to operator competency shall be made available to the Engineer as and when requested. In particular this applies to operation of EWPs, and to competencies required under Wellington Electricity's Electricity Network Standard: Street Lighting Installation Requirements.

5.3 Plant and Equipment

The Contractor shall ensure that all plant and equipment engaged on the contract is appropriately maintained, certified and licensed, and that certifications and licences are kept up to date and current. This includes plant and equipment owned, leased or hired by the contractor or its subcontractors. Copies of records relating to plant and equipment maintenance, certifications and licensing shall be made available to the Engineer as and when requested. In particular this applies to any EWPs used on the contract.

5.4 Personal Protective Equipment

The Contractor shall ensure that all staff working on the Site are equipped with and using appropriate safety equipment and clothing as required to safely execute the Works. This will include high visibility jackets/vests which must be properly worn at all times. All safety

equipment and clothing must be kept in good condition and replaced should it exceed the use-by dates, or become damaged or worn out.

Where Work is undertaken on the State Highway within the contract area, the Contractor shall provide, maintain and enforce the appropriate use of Personal Protective Equipment complying with the provisions of NZTA's PPE Minimum Requirement document. A copy of this document is available from the NZTA website.

5.5 Hot Bitumen

The Council recommends that all personnel regularly working within 5 metres of hot bitumen be appropriately trained by a recognised training provider in the safe handling of bitumen, with such training being repeated on a three-yearly basis.

5.6 Live Wire Close Proximity Work

Where work is to be undertaken in close proximity to live electricity wires, the contractor shall hold the necessary operator certification or other required operator qualifications. For the Wellington Electricity network, this includes competencies required under Wellington Electricity's Electricity Network Standard: Street Lighting Installation Requirements.

5.7 Other Competencies

Further to the above, the Contractor shall also set out in the Health and Safety Plan any other safety requirements as required by the HSW Act, regulations and Codes of Practice.

6 Working on the Road

The Contractor shall comply with the Council's "Code of Practice for Working on the Road: August 2006", unless specifically noted otherwise within the Contract Documents. Note that the Council's Code of Practice for Working on the Road at some stage will be replaced by a national code of practice for working on the road. Once the new code has been published, the Contractor shall comply with the new Code's requirements.

6.1 Removal of Vehicles and Other Obstructions

It is the Contractor's responsibility to take all necessary and legal steps to ensure that cars are not parked within the Site in such a way that they either impede the Contractor's ability to do the work or will in themselves be put at risk of damage by construction vehicles or associated activities. This may require the placement of advance warning signs, no stopping signs, and notices under vehicle windscreen wipers in addition to the notification requirements of Volume 2 of these Contract Documents, Section 4, Activity Specifications, Activity Specification RT 000-003 Customer Service and Communication, clause 6.

In cases where vehicles are not moved despite prior notification, the Contractor shall be responsible for arranging removal of the vehicles subject to compliance with the law and the following:-

- The procedures used in moving any legally or illegally parked vehicles shall follow the requirements of the Council's "Code of Practice for Working on the Road" (Code clauses 8.3.5.5 and 8.3.5.6).
- The Contractor shall be responsible for the removal of all other movable obstructions necessary to carry out the proposed work such as rubbish skips, derelict vehicles etc. No extra payment shall be made.
- Only Contractor's staff warranted under Section 128D of the Land Transport Act 1998 are allowed to arrange for vehicles to be removed. The Contractor shall advise the Council of the names and details of the staff it proposes to have warranted. The time required for arranging warrants for Contractor's staff is

approximately two weeks. If the Contractor does not have warranted staff, and there is a need for vehicles to be moved, then the Contractor needs to make arrangements with contractors who are warranted to arrange for vehicles to be moved.

- All vehicles which are removed are to be moved to a safe and legal parking place; they are not to be placed on the footpath or in any area which has a parking restriction which is signified by a sign and/or markings on the ground.
- After completion of the work, all vehicles moved shall be returned to their original locations unless other arrangements have been made with the owners of the vehicles.

The Contractor shall pay all costs involved with the removal of vehicles.

7 Traffic Safety Management and Control

The Contractor shall provide, within **2 Weeks** of acceptance of Tender, a set of generic Traffic Management Plans for all appropriate situations which are not covered by the generic plans in the 'Local Roads Supplement'. Traffic Management Plans are documents in addition to the Safety Management Plan document.

The Contractor shall also submit TMPs using RAMM Corridor Access Requests for approval prior to the start of any work where any of the 'Formal Approval' situations, outlined in Section 8.3.5.2 of the Code of Practice for Working on the Road, apply.

Each Corridor Access Request will be work-flowed to the appropriate person for approval prior to the Contractor starting work.

Without limiting the Contractor's responsibility for traffic management, the Engineer may refuse to allow work to commence on Site until the TMP has been reviewed by the Engineer and any concerns raised have been satisfactorily resolved.

It is important that the Contractor is aware that the TMPs must involve more than merely control of vehicular traffic. They shall encompass all worker and public safety issues outlined in the Health and Safety Plan, and shall keep to an absolute minimum the negative impact of the Works to motorists, pedestrians, adjacent property owners and the public in general.

Where Work may affect traffic on a state highway the temporary traffic management measures on the state highway must comply with New Zealand Transport Agency (NZTA) requirements. This includes, complying with the NZTA Code of Practice for Temporary Traffic Management and obtaining approval from the New Zealand Transport Agency or their Network Consultant.

8 Engineer's Audit

The Engineer may, at any reasonable time, conduct an audit to ascertain the Contractor's level of compliance with this specification (RT 000-002). Failure to comply in any way with the requirements may result in the withholding of further work until the non-compliance has been addressed to the Engineer's satisfaction.

Failure to qualify for full payment under this clause will not relieve the Contractor in any way whatsoever of its obligations and responsibilities under this contract or at law.

ACTIVITY SPECIFICATION

RT 000-003
Customer Service and Communication Street lighting

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ACTIVITY SPECIFICATION

RT 000-003
Customer Service and Communication (Street lighting)

1 Scope

The Work to be executed under this Specification consists of communicating with the Council, the public, and other stakeholders in the course of undertaking the Works.

In general the Contractor will not be required to inform or notify the public of the accelerated rollout of LEDs, or the programme of installation, as this will be carried out by the Council. However the contractor can expect to be approached for information, and to this end, this specification sets out the contractor's acceptable behaviour in responding to these approaches.

2 References

New Zealand Standards, and the Wellington City Council Specifications are referred to in abbreviated form (e.g. NZS1234, RT 000-001).

For convenience, full titles of those referred to in this specification are given below:-

Customer Service Policy	Wellington City Council Delivering Excellent Customer Service Standard
Working on the Road	Wellington City Council Code of Practice for Working on the Road: August 2006. Note: This Code will be replaced by a National Code of Practice for Working on the Road. Until such time as the new Code is published, the Council's existing Code will apply.
General Requirements	Volume 2 of these Contract Documents Section 3, RT 000-003 General Requirements

3 Customer Service and Communication Expectations

The Council's expectations regarding customer service and communication are:-

- That Works carried out by or on behalf of the Council are completed with minimum inconvenience to the public
- That those potentially and actually affected by such Works have an opportunity to understand the reason for and the nature of the Works, and to contribute ideas or constraints that may allow better scheduling and implementation of the Works to a greater general benefit

- That interactions between the Contractor and others are conducted in a manner meeting the Council's requirements and in general those of good quality, professional and courteous communication.

4 General Requirements

The Contractor shall in all dealings with the public adhere to the Wellington City Council Delivering Excellent Customer Service Standard.

The Contractor must appoint a delegated staff member to co-ordinate all communications between the Contractor, the public and the Engineer's Communications Representative.

All media enquiries regarding the Council's interests should be referred immediately to the Engineer's Communications Representative. The Contractor should not enter into discussions on any Council topic or Council area of interest with the media, irrespective of whether or not the Contractor may also have an interest in it.

All written correspondence with the public including letters, public notices, worksite signage and the like, must be approved by the Engineer's Communications Representative before circulation and/or publication, unless specifically advised otherwise by the Engineer in writing. All worksite signage must be maintained in a presentable condition, with any handwritten content clearly legible and neatly written.

5 Communication Plan

The Contractor is required to develop a 'Communication Plan' which sets out how the Contractor will:-

- Communicate with the Principal, the Engineer, the Engineer's Representatives and Project Engineers at all levels within the Contract
- Communicate with external organisations (Subcontractors etc.)
- Communicate with service authorities
- Handle media enquiries regarding the Contract
- Other (including Contractor internal communication)

The Contractor's Communication Plan shall be prepared and presented for the Engineer's acceptance within four weeks of award of Contract, and any concerns held by the Engineer resolved prior to relevant Works commencing.

6 Removal of Vehicles and Other Obstructions

The removal of vehicles and other obstructions is dealt with in Activity Specification, RT 000-002 Safety and Traffic Management, clause 6.1.

7 Requests for Service and Enquiries

7.1 General

General street lighting maintenance enquiries received through the Council Contact Centre are referred to the Council's street lighting maintenance contractor. However there may be some enquiries relating to this Contract that will be referred to the Contractor.

7.2 Response to Customer Requests for Service

The Contractor shall refer all customer requests for service to the Engineer

7.3 Response to Customer Enquiries

The Contractor shall refer all customer enquiries to the Engineer.

7.4 Responses General

The Contractor is required to make reasonable efforts to contact the customer when required by the Contract or the Engineer to do so. At times there will be no response to a phone call. At this point, the Contractor is expected to exercise good judgement depending on the importance of the matter as to whether to pursue alternative means of contact or not. An alternative could include visiting the property and leaving a note for the customer.

The Contractor is required to record all attempts to contact the customer in RAMM as Progress Notes.

ACTIVITY SPECIFICATION

RT 000-005
Contract Quality Assurance Street lighting

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ACTIVITY SPECIFICATION

RT 000-005
Contract Quality Assurance
(Street lighting)

1 Scope

The Work to be executed under this Specification consists of providing and operating the management resources, activities, processes and systems necessary to ensure the Works satisfy the agreed quality standards.

2 References

New Zealand Standards, and Wellington City Council Specifications are referred to in abbreviated form (e.g. NZS1234, RT 000-001)

For convenience full titles of those referred to in this specification are given below:-

NZTA TQS1:2005	Specification for High Quality Assurance Level Contracts
Activity Specification RT 000-001	Contract Management and Planning

3 General

3.1 Minimum Requirements

The minimum requirements for the quality assurance of the Works shall be completed according to the specification for high quality assurance level contracts, NZTA TQS1: June 2005, and the requirements of this Specification.

3.2 Contract Quality Plan (CQP)

The Contractor shall prepare, maintain, review, and operate a CQP to satisfy both the Contractor's quality assurance system and the requirements of this Contract. This includes identifying and documenting the quality records necessary to assure both the Contractor and the Engineer that all Works including (but not limited to) physical works, designs, programming, documenting, reporting, communications and customer service and communication are compliant, and that non-compliances are managed through to closeout in accordance with the Contractor's quality assurance management system and the requirements of this Contract.

The CQP shall include details of the Contractor's performance monitoring system and include a continuous improvement methodology.

The CQP shall be implemented and managed so the Works are identified, programmed and completed within the timeframes specified, and completed according to the Contract Documents.

The Engineer, from time to time, may undertake or engage others to undertake formal or informal reviews or audits of the CQP or parts of the CQP and associated systems.

Nothing in the CQP shall take precedence over the requirements of the Contract Documents.

3.3 Documented Procedures

The CQP shall include or reference documented implementation and management procedures (as appropriate to this contract) for at least the following (Note that documented procedures are also required for health and safety and traffic management etc. Procedures for these are detailed in their respective specifications):-

Activity	Required Documented Procedures
Correspondence	• Inwards and outwards correspondence, and • RAMM report responses, including the submission of all information to the Engineer
Materials and Product Testing	• How incoming materials and products will be recorded and quality controlled so that they comply with the requirements of this Contract • How materials and product use will be controlled and reported • The type, number and frequency of all the Contractor's proposed tests as part of the Works
Compliance Monitoring	• The selection, inspection, measurement and testing of random samples of work components including, but not limited to, physical works, inspection of condition, customer service, safety management, contract management, planning, programming and design completed each month • The procedure shall identify the minimum number of measurable tasks completed during the month, and the minimum number of measurable tasks completed during the previous six months for inspection, measurement and testing • The procedure shall detail the:- – Method of selecting the random samples – Recording of the results and actions for remedial works – Identifying and rectifying non-compliances, including procedures for rectification
Compilation and Management of Contract Records	• The compilation and management of records that demonstrate the materials, work methods, condition standards where applicable, and completed works comply with the Contract Documents
Competence	• Procedures to ensure that all persons engaged in undertaking the Works are qualified, experienced and trained for that work

Activity	Required Documented Procedures
Subcontractors	• Management, and performance monitoring of Subcontractors, including the specific procedures implemented to ensure their compliance with the Contract
Contractor's Programmes	• The preparation, implementation and management of the Contractor's Programmes including, but not limited to:- – Identifying, reviewing and reporting network faults (patrols and other observations) – The selection of cost effective solutions – Compilation of programmes and where required, adjusting the content of the programme to meet the programming constraints – Re-prioritising tasks so the programme continually addresses the network's needs
Contractor's Reports	• The preparation and submission of the Contractor's Reports
Completion of work	• The completion of all Work according to Volume 2 of these Contract Documents, Section 3, General Requirements including, but not limited to, the:- – Selection of resources – Implementation of appropriate customer service – Implementation of appropriate levels of traffic management – Controls to ensure work practices and completed Works comply with the requirements of this Contract – Completion of tasks and formal sign-off – As-built records completion and submission – Timely payment claims – Suitable Site works completion checklists signed by the foreman and supervisor responsible for each planned works Site indicating successful provision and testing of all required processes and works to the correct standard. (Note that the Technical Specifications included in Volume 4, Section 6 of the Contract Documents are regarded as "Best Practice" and are

Activity	Required Documented Procedures
	mandatory, except where the Engineer has explicitly approved an alternative methodology)
As-built Records	• The recording of all maintenance work details including, where appropriate, description, location, RAMM data, costs and testing

4 Standards and Materials

4.1 Relevant Standards and Specifications

All sampling and testing shall be undertaken according to the relevant New Zealand Standards or NZTA standards and specifications.

All materials and products used in the Works shall comply with their respective standard specifications.

4.1.1 Materials

Where materials testing is required, materials shall be sampled and tested by a certified testing agency. Sampling may be completed by personnel other than those provided by the testing agency, but all sampling personnel must be certified.

4.1.2 Acceptance Testing

The minimum frequency of testing and the construction tolerances for the Contract Works are specified in Volume 4 of these Contract Documents, Section 6, Technical Specifications.

5 Contractor's Monitoring System

The Contractor shall develop, implement and manage a performance monitoring system that:-

- Identifies all criteria to be monitored to satisfy the Contractor and demonstrate to the Engineer that the requirements of the Contract are being met. These criteria shall be detailed in the CQP, and shall include as an absolute minimum, the Performance Measures specified in Volume 2, of these Contract Documents, Section 4, Activity Specifications, Activity Specification RT 000-006 Performance Monitoring.
- Objectively assesses, monitors and reports its performance in the monthly report against these criteria.
- Ensures appropriate corrective actions are developed, implemented, actioned and verified through the Contractor's quality system.

The Contractor's performance monitoring system must describe the process for assessing compliance for each of the nominated criteria including:-

- The personnel responsible for:
  - Implementing and managing the system
  - Completing the compliance assessment
- The methodology to be used to assess performance against the criteria
- Recording and reporting results

- Developing and implementing appropriate corrective actions
- Making all information available to permit the Engineer to perform reviews of the system should the Engineer choose to in accordance with Activity Specification RT 000-001 Contract Management and Planning.

The Contractor's performance monitoring system shall be agreed with Engineer within one month of Commencement of the Contract.

Results from the Contractor's performance monitoring shall be presented to the Engineer within the Contractor's Monthly Report as specified in Activity Specification RT 000-001 Contract Management and Planning.

6 CQP Development and Acceptance

The Council will permit a staged process of the CQP submission by the Contractor and acceptance by the Engineer as follows:

- Contractor submission of Outline CQP (during tender period)
- Contractor submission of Generic CQP within 2 weeks of tender acceptance with Engineer acceptance of Generic CQP within a further 2 weeks. The Contractor's Generic CQP should be as advanced as reasonably possible towards being a completed plan in accordance with the requirements of the Contractor's certified quality management system
- Contractor ongoing staged CQP development, and Engineer acceptance of developments

The Generic CQP is required to address all elements of the CQP either by provision of required details or by reference to them. The staged development will involve expanding these details and references in order to complete the document to the Engineer's satisfaction. The Engineer will consult with the Contractor when setting priorities and timeframes for staged developments. The Contractor shall prepare and submit details to the satisfaction of the Engineer, within the time frames set by the Engineer.

The CQP shall provide signoff facility for the Contractor and the Engineer to record submission and acceptance of each stage of the plan from Outline, to Generic, and then to each completed stage development.

7 CQP Review

The Engineer will:-

- Review the CQP at each stage
- Mutually agree the content and appropriateness of the CQP

No work other than establishment, setting out, and the Site preparation shall be performed prior to the acceptance by the Engineer of the Generic CQP.

ACTIVITY SPECIFICATION

RT 000-006
Performance Monitoring

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ACTIVITY SPECIFICATION

RT 000-006
Performance Monitoring

1 Scope

This specification:-

- Details the Engineer's methodology for assessing the Contractor's performance.
- Presents the means the Engineer will use to assess this performance.
- Details the methodology the Engineer will apply in response to poor performance.

The Contractor's performance monitoring and reporting requirements are detailed in Activity Specification RT 000-001 'Contract Management and Planning'

2 References

RT 000-001	Contract Management and Planning Activity Specification
RT 000-002	Safety and Traffic Management Activity Specification
RT 000-003	Customer Service and Communication Activity Specification
RT 000-005	Contract Quality Assurance Activity Specification

3 Purpose

The purpose of the performance monitoring described in this specification is to demonstrate the achievement of the overall Contract objectives as defined in Volume 2, Section 3 – 'General Requirements' of these Contract Documents. These objectives, in turn, contribute to the Transportation Levels of Service defined in the Transportation Asset Management Plan.

The Council expects that any performance under-achievement, and the reasons underlying under-achievement, will be clearly identified in an open and transparent manner in keeping with the collaborative management intent of this Contract. Further, the Council expects that the Contractor will implement initiatives in a timely manner to improve performance so that the Contract objectives are achieved.

4 Performance Assessment

4.1 Engineer's Assessment

The Engineer will assess the quality of the Contractor's Work and performance attained against the ratings set out in clause 4.2 tables 1 to 17. This performance assessment will help the Engineer determine what action to take, and to what extent. Non-Compliance Reports are detailed in clause 4.2 of this specification.

The Engineer will undertake the assessment monthly, or other such time as nominated by the Engineer, following discussion with the Contractor.

The Engineer may also assess Contractor performance against other such measures and requirements that may arise. These measures will be discussed, and agreed with the Contractor.

4.2 Non-Compliance Reports (NCRs)

NCRs are a tool to assist the Engineer or his Representative, and the Contractor monitor the Contractor's compliance with the Contract Specifications and intents.

Should the Engineer, or their Representative identify an action, response or output which does not comply with the Contract, or a lack of action, response or output or a series of actions, inactions, responses or outputs required by the Contract, the Engineer or their Representative may issue the Contractor with an NCR. This NCR summarises the details of the identified non-compliance, or series of non-compliances.

Within 5 Days of the date of issue of an NCR, the Contractor shall:

- Respond to the Engineer acknowledging receipt of the NCR, and,
- Respond to the Engineer in writing setting out the proposed remedial and corrective action(s) to address the non-compliance

The Contractor, within this 5 Day period, may also request the Engineer to:-

- Reconsider the NCR
- Reconsider the rating(s) assigned on the NCR

In each such case, the Contractor is required to provide documented evidence to support this request. Failure to provide such documented evidence may result in no reconsideration of individual NCRs.

Information from NCRs will be collated as a data source for performance assessment.

The form of the NCR is presented overleaf. Please note this is standard form and not all measures on the form are applicable to this contract.

NON COMPLIANCE REPORT (NCR)					
Contract No:		**Activity Assessed:**		Absolutely Positively **Wellington** City Council Me Heke Ki Pōneke	
Date Inspected		**Time Inspected**			
Location:		**NCR Ref No**			
Reported By:		**Reported to:**		**Date Reported:**	

Service	Service Aspect	Code	Min	Mod	Maj	Comments
Fault Finding	Recommendation inadequate/ incorrect	FF01				
Hazard Response	Failure to respond 24/7	HR01				
Programming	Programme deficient	PR01				
	Programme late	PR02				
Notifications	Advanced (2wk) letter drop inadequate	NT01				
	Standard (48hr) letter drop inadequate	NT02				
	Information Sign inadequate	NT03				
	Special Notifications inadequate	NT04				
RAMM	Progress Note incorrect	CN01				
	Defect incorrect	CN02				
	Job status incorrect	CN03				
	Claim incorrect	CN04				
	Asset not linked	CN05				
Quality Of Work	Customer response unacceptable	QL01				
	Response to work need inadequate	QL02				
	Private vehicles moved incorrectly	QL03				
	Nuisance caused by work methods	QL04				
	Site not tidy	QL05				
	Selected treatment inappropriate	QL06				
	Workmanship inadequate	QL07				
	Material quality substandard	QL08				
Safety and Traffic Management	Responsible party not shown	TM01				
	Inadequate TMP	TM02				
	PPE incorrect	TM03				
	Sign/s incorrect	TM04				
	Delineation incorrect	TM05				
	Pedestrian provision inadequate	TM06				
	Cyclist provision inadequate	TM07				
	Traffic needs provision inadequate	TM08				
	Property access inadequate	TM09				
Plans and Reports	Management System Plans inadequate	RP01				
	Report inaccurate/inadequate	RP02				
	Report late	RP03				
Meetings	Meeting not properly represented	MT01				
Weed Spraying (roads)	Weed spraying late or inadequate	WS01				
Weed Spraying (other)	Weed spraying late or inadequate	WS02				
Road Verges	Growth cutting late or inadequate	VN01				
Paths Growth Cutting	Growth cutting late or inadequate	PG01				
Surfaces Cleaning	Street furniture dirty	SC01				
	Walls, fences and subways dirty	SC02				
	Small Posters and Graffiti left Un-attended	SC03				
Litter	Bins full and/or poor litter control	LB01				

Service	Service Aspect	Code	Min	Mod	Maj	Comments
Pedestrian Area Sweeping	Late or poor sweeping	PS01				
CBD Refuse and Recycling	Late or inadequate collection service	RR01				
Other Comments:						

Non-Compliance Rating

Non-compliances will be rated by the Engineer, or his Representative, as Warning (0 demerits), Minor, Moderate or Major in accordance with guidelines presented in Tables 1 to 17 below.

Table 1 – Non Compliance Report Rating – Fault Finding

Fault Finding	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
FF01 Recommendation inadequate/ incorrect ***Fault Finding*** ▪ Poor assessment of severity of faults on a Site ▪ Surveys not carried out to schedule ▪ Inadequate fault finding reports	▪ Surveys carried out up to 1 week late	0 or 1	▪ Surveys carried out 1 –2 weeks late ▪ Reports not used to identify pre-approved Works	3	▪ One or more grade 5* faults not recorded as such, or ▪ One or more faults recorded as a grade 5* when not that severe ▪ Surveys carried out more than 2 weeks late ▪ Failure to recommend grade 4* or 5* faults for Planned Works Programme	5

* The Council has a number of grading or rating systems in use, eg as per the Street Cleaning Audit Manual. For the purpose of this activity specification, grade 1 represents “excellent”, and grade 5 represents “poor”. Intermediate grades are to be interpolated between these limits.

Table 2 – Non Compliance Report Rating – Hazard Response

Hazard Response	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
HR01 Recommendation inadequate/ incorrect ***Dangerous Hazard Response Preparedness*** ▪ Failure to attend dangerous hazard ▪ Lateness in attending ▪ Inadequate resource to make safe	▪ Inadequately resourced to make safe	0 or 1	▪ 1 to 2 hrs late with no justifiable reason	5	▪ More than 2hrs late to dangerous hazard – no justifiable reason ▪ Failure to respond at all	10

Table 3 – Non Compliance Report Rating – Programming

Programming	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
PR01 Programme deficient ***Contract Management and Planning*** ▪ Not realistic/accurate ▪ Not complete	Amendments required to 10%-30% of the programme	0 or 1	Amendments required to 30%-60% of the programme	2	Amendments required to >60% of the programme	3
PR02 Programme late ***Contract Management and***	1-2 days late	0 or	>2 days late	2	Not submitted before next due	3

Planning ▪ Not submitted on time.		1			date	

Table 4 – Non Compliance Report Rating – Notifications

Notifications	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
NT01 Advanced notification (2 weeks) inadequate ***Customer Service and Communication*** ▪ Information missing/errors ▪ Untimely distribution ▪ Poor distribution spread ▪ Poor appearance ▪ Inaccurate	Some non-key errors with information	0 or 1	Late/early distribution, some key errors in information, eg dates, locations, spelling etc	3	No letter drop prior to Work commencing	5
NT02 Standard notification (48hrs) inadequate ***Customer Service and Communication*** ▪ Information missing/errors ▪ Untimely distribution ▪ Poor distribution spread ▪ Poor appearance ▪ Inaccurate	Some non-key errors with information	0 or 1	Late/early distribution, some key errors in information, eg dates, locations, spelling etc, no re-distribution if changes	3	No letter drop prior to Work commencing	5
NT03 Information Sign inadequate ***Customer Service and Communication*** ▪ Not enough signs ▪ Information lacking ▪ Poor appearance ▪ Not displayed on time ▪ Poor positioning	Some non-key errors with information	0 or 1	Key information incorrect, not updated or missing eg dates	3	No signs	4
NT04 Special Notifications inadequate ***Customer Service and Communication*** (Advertising/Radio/Notification of Emergency Services and public transport operators) ▪ Insufficient distribution/exposure ▪ Poor timeliness ▪ Information missing/ inaccurate	Some non-key errors with information	0 or 1	Late/early announcements, some key errors in information, eg dates, no amended announcements if changes	4	No announcements or advice to Emergency Services or Transport Operators when required	5

Table 5 – Non Compliance Report Rating – RAMM

RAMM	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
CN01 Enquiry incorrect ***Contract Management and Planning*** • Incorrect Status, • Inadequate notes • Errors in notes	Some non-key errors with information	0 or 1	▪ Key information incorrect, not updated or missing eg location ▪ Incorrect status	2	Key information incorrect, not updated or missing eg location and incorrect status	3
CN02 Defect incorrect ***Contract Management and Planning*** ▪ Incorrect Defect	Quantities incorrect 10%-50%	0 or 1	▪ Quantities incorrect 50%-100% ▪ Incorrect defect	2	▪ Quantities incorrect and incorrect description or location	3

RAMM	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
			▪ description ▪ Incorrect location		▪ Quantities incorrect >100%	
CN03 Job status incorrect ***Contract Management and Planning*** ▪ Incorrect Status	Status incorrect	0 or 1	Status incorrect despite advice to amend it	2	Status incorrect for more than 5 days	3
CN04 Claim incorrect ***Contract Management and Planning*** ▪ Incorrect Claim	Quantities incorrect 1%-20%	0 or 1	▪ Incorrect SOR item ▪ Quantities incorrect 20%-60%	3	▪ Quantities incorrect and incorrect SOR item ▪ Quantities incorrect >60%	5
CN05 Asset Not Linked ***Contract Management and Planning*** ▪ Incorrect or no link	Incorrect Link	0 or 1	▪ No link	3	▪ Repeated incorrect links or absence of links	5

Table 6 – Non Compliance Report Rating – Quality of Work

Quality of Work	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
QL01 Customer response unacceptable ***Customer Service and Communication*** ▪ No response to enquiries, requests for service or hazard notification ▪ Inappropriate or rude response	No RAMM records of response to customer	0 or 1	Complaint regarding communication style, including rudeness or no response	5	>1 complaint regarding rude or offensive language, or no response at all	10
QL02 Response to Work need inadequate ***Contract Management and Planning*** ▪ Non attendance on Site ▪ Late attendance on Site ▪ Refusal to undertake Works ▪ Hazard jobs late – no justifiable reason ▪ Other jobs late – no justifiable reason	▪ Late attendance on Site, no significant impact ▪ Hazard job made safe up to 2hrs late ▪ Planned maintenance completed up to 1 day late ▪ Site restricted time limit exceeded by up to 10mins	0 or 1	▪ Late attendance on Site for critical Works. Temporary hazard or inconvenience at key event ▪ Non attendance on Site, no major impact ▪ Hazard job made safe 2 to 4 hrs late ▪ Planned maintenance completed 2-5 days late ▪ Site restricted time limit exceeded by 10-30mins	5	▪ Non attendance on Site for critical Works. Hazardous or significant inconvenience at key event ▪ Refusal to undertake Works on Engineer's instruction ▪ Hazard job made safe more than 4hrs late ▪ Planned maintenance completed more than 5 days late ▪ Site restricted time limit exceeded by more than 30min	10
QL03 Private vehicles moved incorrectly ***Contract Management and Planning*** ▪ Person not warranted	Vehicle moved incorrectly	0 or 1	Single complaint, vehicle moved with no or incorrect notification	3	▪ >1 complaint, vehicles moved with no or incorrect notification, damage	5

Quality of Work	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
▪ Notices not previously put on vehicles					▪ Person not warranted	
QL04 Nuisance caused by work methods ***Contract Management and Planning*** ▪ Dust nuisance ▪ Noise nuisance ▪ Inappropriate hours of Work ▪ Damage to Private or Public property	Non-compliance with potential nuisance	0 or 1	2-5 complaints	2	>5 complaints	3
QL05 Site not tidy ***Contract Management and Planning***	▪ Some materials not removed from Site on completion ▪ Some minor equipment (eg signs) stored neatly but not removed on job completion	0 or 1	▪ Materials, plant or equipment not stored neatly or left behind at job completion ▪ Disorganised looking Site	2	▪ Widespread mess ▪ Safety risk ▪ Complaints	3
QL06 Selected treatment inappropriate ***Contract Management and Planning*** ▪ Poor seal design, ▪ Wrong asphalt type ▪ Wrong type of asset installed/built	Non-optimum solution implemented with risk of shortened asset life	0 or 1	Incorrect option implemented with shortened asset life or decreased level of service	2	Incorrect option implemented to address defect necessitating rework	3
QL07 Workmanship inadequate ***Contract Management and Planning*** ▪ Poor Compaction ▪ Poor Finished surface levels ▪ Premature failure ▪ Construction in wrong place ▪ Foundation unsuitable ▪ Poor positioning of work features	Poor workmanship with some aesthetic impacts and/or risk of shortened asset life	0 or 1	Poor workmanship with shortened asset life or decreased level of service Cleaning, mowing or spraying poorly carried out	5	Workmanship unacceptable. Rework required Cleaning, mowing or spraying not carried out	10
QL08 Material quality substandard ***Contract Management and Planning***	Poor materials with some aesthetic impacts and risk of shortened asset life	0 or 1	Poor materials with shortened asset life or decreased level of service	5	Materials unacceptable. Rework required	10

Table 7 – Non Compliance Report Rating – Safety and Traffic Management

Traffic Management (Refer to WCC TTM Audit guidelines)	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
TM01 Responsibility not shown ***Safety and Temporary Traffic Management***	Safety responsibility not obvious on Site	0 or 1	Certified safety officer not on Site	5	No -one responsible for safety	10
TM02 Inadequate TMP ***Safety and Temporary Traffic***	Minor amendments	0 or	Not appropriate for situation	5	No evidence of TMP	10

Traffic Management (Refer to WCC TTM Audit guidelines)	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
Management	required	1				
TM03 Vest/s incorrect ***Safety and Temporary Traffic Management***	Some vests not worn correctly	0 or 1	Some vests not worn, many vests not worn correctly	3	No vests worn	5
TM04 Sign/s incorrect ***Safety and Temporary Traffic Management***	▪ Signs damaged, untidy, poorly presented, illegible, dirty, affecting visibility, or some incorrect distances ▪ Signs not removed when no longer required	0 or 1	▪ Some signs missing, incorrect order, conflicting signs, some insecure. Wrong Information ▪ Signs not removed when no longer required and impeding flow of traffic	5	No signs, signs dangerous	10
TM05 Delineation incorrect ***Safety and Temporary Traffic Management***	Cones too far apart, inadequate taper length	0 or 1	Confusing delineation, some safety risk	3	No delineation, dangerous	5
TM06 Pedestrian provision inadequate ***Safety and Temporary Traffic Management***	Pedestrian provision unclear, too narrow, poor surface, not dangerous	0 or 1	Pedestrian provision inadequate, some safety risk	3	No pedestrian provision, dangerous	5
TM07 Cyclist provision inadequate ***Safety and Temporary Traffic Management***	Cyclist provision unclear, too narrow, not dangerous	0 or 1	Cyclist provision inadequate, poor surface, some safety risk	3	No cyclist provision, dangerous	5
TM08 Traffic needs provision inadequate ***Safety and Temporary Traffic Management***	Poor surface, some delays	0 or 1	Lane widths and speed limits inappropriate, some safety risk	5	No traffic control	10
TM09 Property access needed ***Safety and Temporary Traffic Management***	Some temporary unnecessary obstruction to property access	0 or 1	Multiple/key property access blocked unnecessarily, access not restored out of working hours	3	Multiple/key property access blocked more than 1 day unnecessarily	5

Table 8 – Non Compliance Report Rating – Reports

Reports	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
RP01 Contract Quality Plan inadequate ***Contract Management and Planning***	Some non-key errors with information	0 or 1	Key information incorrect, not updated or missing	5	Quality Plan unacceptable, no real attempts to improve it	10

▪ (CQP covers most issues eg: personnel, resources, systems, training)						
RP02 Report inaccurate/ inadequate ***Contract Management and Planning***	Some non-key errors with information	0 or 1	Key information incorrect, not updated or missing	5	Not submitted	10
RP03 Report late ***Contract Management and Planning***	1-2 days late	0 or 1	>2 days late	3	Not submitted before next due date	5

Table 9 – Non-Compliance Report Rating - Meetings

Meetings	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
MT01 Meeting not properly represented ***Contract Management and Planning*** ▪ Staff not present, ▪ Attendees not appropriate	▪ Inappropriate attendees at Site or other requested meeting ▪ Repeated Lateness	0 or 1	Inappropriate attendees at scheduled Contract Administration Team or Management Board Meeting Non-attendance at Site or other requested meeting	3	Non attendance at scheduled Contract Administration Team or Management Board Meeting	5

Table 10 – Non-Compliance Report Rating – Weedspraying (Roads)

Weedspraying (Roads)	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
WS01 Weedspraying inadequate ***Hard Surface Weedspraying – Road Carriageways*** ▪ Spraying late/not carried out ▪ Spraying ineffective	More than 1 month behind programme despite clement weather	0 or 1	More than 2 months behind programme despite clement weather	3	Spraying ineffective after 2 months	5

Table 11 – Non-Compliance Report Rating – Weedspraying (Other)

Weedspraying (Other)	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
WS02 Weedspraying inadequate ***Hard Surface Weedspraying – Other Areas*** ▪ Spraying late/not carried out ▪ Spraying ineffective	More than 1 month behind programme despite clement weather	0 or 1	More than 2 months behind programme despite clement weather	3	Spraying ineffective after 2 months	5

Table 12 – Non-Compliance Report Rating – Road Verges (non flail)

Road Verges	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
VN01 Inadequate vegetation cutting – non-flail	More than 1 month behind programme	0 or	More than 2 months behind	3	Overhanging growth remaining	5

mowing ***Roadside verges (non flail mowing) growth cutting*** ▪ Cutting late/not carried out ▪ Cutting inadequate	despite clement weather	1	programme despite clement weather		within clearance envelope/ grass not maintained below 200mm	

Table 13 – Non-Compliance Report Rating – Paths Growth Cutting

Paths Growth Cutting	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
PG01 Inadequate vegetation cutting – non-flail mowing ***Throughpath, accessway and other area (non flail mowing) growth cutting*** ▪ Cutting late/not carried out ▪ Cutting inadequate	More than 1 month behind programme despite clement weather	0 or 1	More than 2 months behind programme despite clement weather	3	Overhanging growth remaining within clearance envelope/ grass not maintained below 200mm	5

Table 14 – Non-Compliance Report Ratings — Surfaces Cleaning

Surfaces Cleaning	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
SC01 Street Furniture Cleaning ***Street Furniture and Miscellaneous Surfaces Cleaning*** ▪ Cleaning need not identified by Contractor ▪ Cleaning not carried out	Street furniture and shelters items with cleanliness rating higher than 3 not identified on Contractor's works programme	0 or 1	Street furniture and shelters items with cleanliness rating of 5, not on Contractor's works programme	3	Street furniture and shelters with cleanliness rating of 5 left unaddressed despite repeat reminders	5
SC02 Walls Fences and Subway ***Street Furniture and Miscellaneous Surfaces Cleaning*** ▪ Cleaning need not identified by Contractor ▪ Cleaning not carried out	Walls, fences and subways with cleanliness rating higher than 3, not on Contractor's works programme	0 or 1	Walls fences and subways with cleanliness rating of 5, not on Contractor's works programme	3	Walls, fences and subways with cleanliness rating of 5 left unaddressed despite repeat reminders	5
SC03 Small Posters and Graffiti Removal ***Street Furniture and Miscellaneous Surfaces Cleaning*** ▪ Removal inadequate, late or not carried out at all	Slow response to removing small posters and graffiti	0 or 1	Contractor requires regular reminders to remove small posters and graffiti, or reminders to properly remove them	3	Removal unaddressed despite repeat reminders	5

Table 15 – Non-Compliance Report Rating – Litter

Litter	Descriptor Examples and Demerit Points					
	Warning/Minor		**Moderate**		**Major**	
LB01 Inadequate litter collections ***Litter Bins Emptying and General Litter Pickup***	▪ Litter bins appearance with rating of 3 or more not programmed	0 or 1	▪ General litter left uncollected ▪ Slow response to fouling or	3	▪ Failure to attend to overflowing litter bins ▪ Litter bins	5

▪ Bins full/overflowing ▪ Unaddressed general litter	for cleaning		offensive litter		emitting offensive odour ▪ Failure to collect reported general litter in high profile areas	

Table 16 – Non-Compliance Report Rating – Pedestrian Area Sweeping

Pedestrian Area Sweeping	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
PS01 Inadequate Sweeping ***Pedestrian Area Sweeping and Surface Drainage Cleaning and Minor Maintenance*** ▪ Pedestrian pavements not swept ▪ Build up of debris in pedestrian area surface channels ▪ Adjacent area sump floatables not cleared	▪ Programmed sweeping not carried out ▪ General cleanliness and litter/debris rating of 3	0 or 1	▪ Blocked surface channels ▪ More than 50% of adjacent area sump water surface covered with floatables ▪ General loss of locking sand around segmental pavers	3	▪ Ponding due to blocked surface water channels, and receiving structures ▪ Frequent litter/debris rating of 5 ▪ Missing or loose slot drain grates left unattended	5

Table 17 – Non-Compliance Report Rating – CBD Refuse and Recycling

CBD Refuse and Recycling	Descriptor Examples and Demerit Points					
	Warning/Minor		Moderate		Major	
RR01 Inadequate Sweeping ***CBD Refuse and Recycling Collection Services*** ▪ Missed or late collections ▪ Loose refuse or recycling left lying around ▪ Noisy night time operations	▪ Missed bags	0 or 1	▪ Collections late ▪ Broken bags and uncollected strewn refuse/ recycling	3	▪ Nightly collection missed altogether – no good reason ▪ Repeat noisy operations despite warnings	5

5 Monthly Performance Management

5.1 Monthly Demerit Points

The following table sets out the Council's standard demerit point threshold, per month. Not all items relate to this contract:-

Item Category	Monthly Threshold Demerit Points
Contract Management and Planning	10
Safety and Temporary Traffic Management	10
Customer Service and Communication	10
Fault Finding	10
24/7 Dangerous Hazard Response Preparedness	5

Item Category	Monthly Threshold Demerit Points
Vegetation Control – Hard Surface Weedspraying (Road Carriageways)	10
Vegetation Control – Hard Surface Weedspraying (Other Than Road Carriageways)	10
Non-Flail Mowing Vegetation Cutting - Roadside Verges	10
Non-Flail Mowing Vegetation Cutting - Areas Other Than Roadside Verges	10
Pedestrian Area Sweeping And Surface Drainage Cleaning and Minor Maintenance	10
Street Furniture And Miscellaneous Surfaces Cleaning	15
Litter Bins Emptying And General Litter Pickup	10
CBD Kerbside Refuse and Recycling Collection Services	5

5.2 Maximum Monthly Demerits

Should the Contractor incur more than 30 demerit points in any calendar month, the Engineer may consider removing the contractor as a panellist.

6 Performance Results and Consequences

6.1 NCRs and Agreeing Performance Results

The Engineer will review the NCR(s), and assess the seriousness of non-compliance. The Engineer will notify the Contractor of his performance assessment and the action he proposes to take. Actions may include delaying the allocation of future work until the Engineer is satisfied the non-compliance issue has been fully addressed.

6.2 Disputing Performance Results

The Contractor may request the Engineer reconsider the performance assessment and actions proposed taking into account any new information that may have come to light. The Engineer shall document his findings and forward a copy to the Contractor. Should subsequent discussions between the Engineer and the Contractor not result in agreement within 1 month of the date of issue of the NCR(s), or other such date as agreed to by the parties, the matter shall be resolved in accordance with the dispute resolution procedure detailed in Volume 2 of these Contract Documents, Section 2 – ‘Conditions of Contract’.

ACTIVITY SPECIFICATION

RT 000-020

Assessment and As-Built Records

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ACTIVITY SPECIFICATION

RT 000-020

Assessment and As-Built Records

1 Scope

The Work to be executed under this Specification consists of the collection of assessment and as-built records and their subsequent entry into the Council's RAMM or other specified system.

1 References

New Zealand Standards, and Wellington City Council Specifications are referred to in abbreviated form (e.g. NZS1234, RT 000-001)

For convenience full titles of Standards and Specifications referred to in this specification are given below:-

Specification RT 000-001	Contract Management and Planning
TBA	New Zealand data standard for roading

2 General Obligations

Collecting and recording assessment and as-built records is necessary for the Council to properly manage its assets. Asset information informs the Council's future capital and maintenance programmes and assists with financial planning. On this contract, it also informs the characteristics and configuration of the LED to be installed at each location.

Collecting and accurately reporting assessment and as-built information in a timely manner is an integral part of completing each item of physical Work. Furthermore, the means of recording and reporting this information shall be as set out in this specification, its document subsets, and any revisions of these.

Collection and entry of the relevant assessment and as-built records is included in the unit rate for undertaking all aspects of the Work. When collecting this information, the Contractor shall check that the description of the asset has been correctly recorded in the system and if not, the Contractor shall flag this to the Engineer through the relevant field(s) in Pocket RAMM. Work is treated as incomplete until such time as the assessment and as-built records have been accurately and correctly entered into the Council's relevant repositories.

3 Data Collection Methods

3.1 Job Data

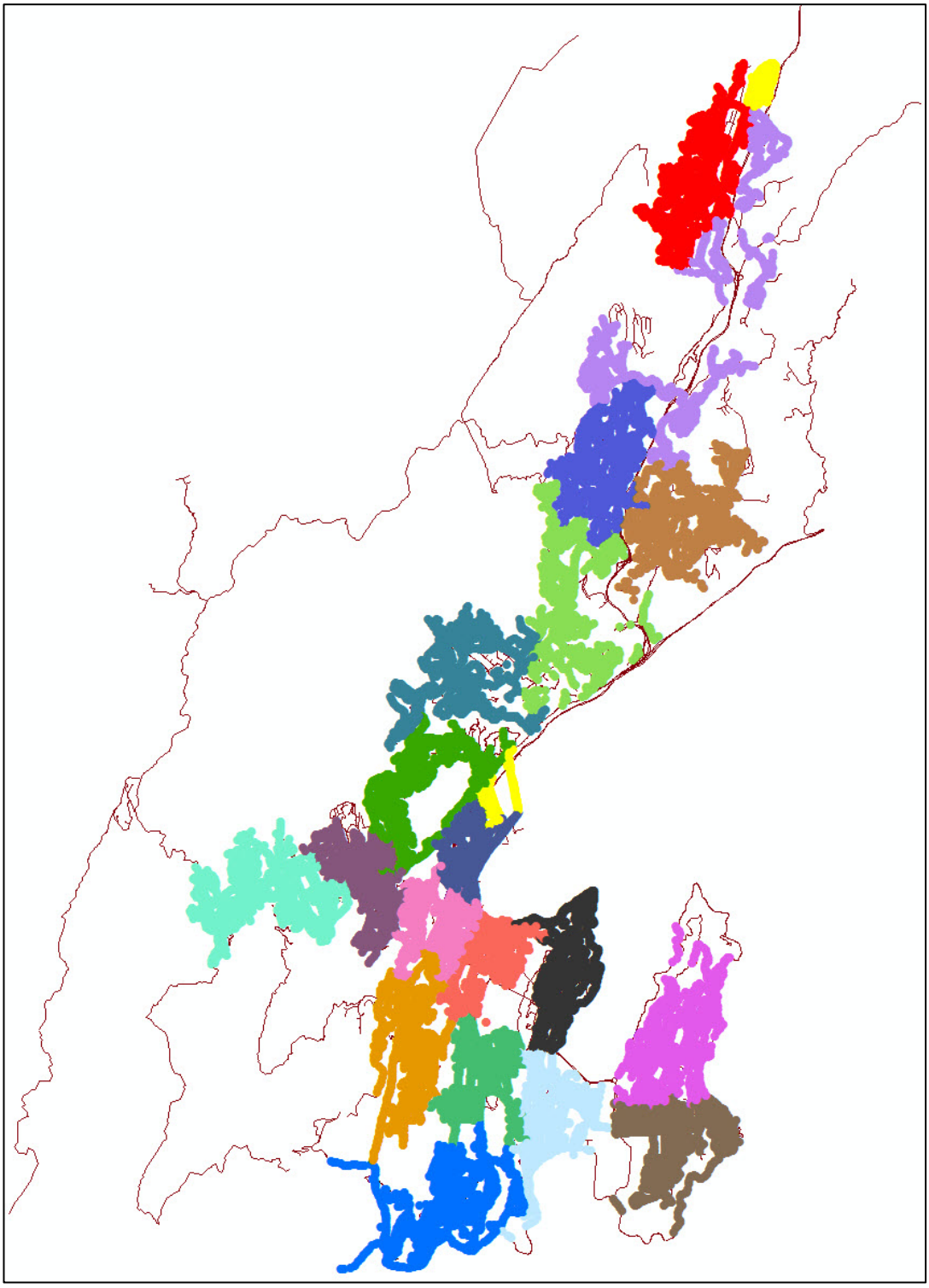
There are 2 processes the Contractor shall follow. The first is to enter job data into RAMM for payment purposes. The job will be linked to the appropriate asset. The second process is to collect the required information to update the RAMM asset data base. For this, the principal tool is Pocket RAMM, set up with fields for data entry.

3.2 Pocket RAMM

Pocket RAMM is an offline application that can be used in the field to enter job data, asset data and assessment data.

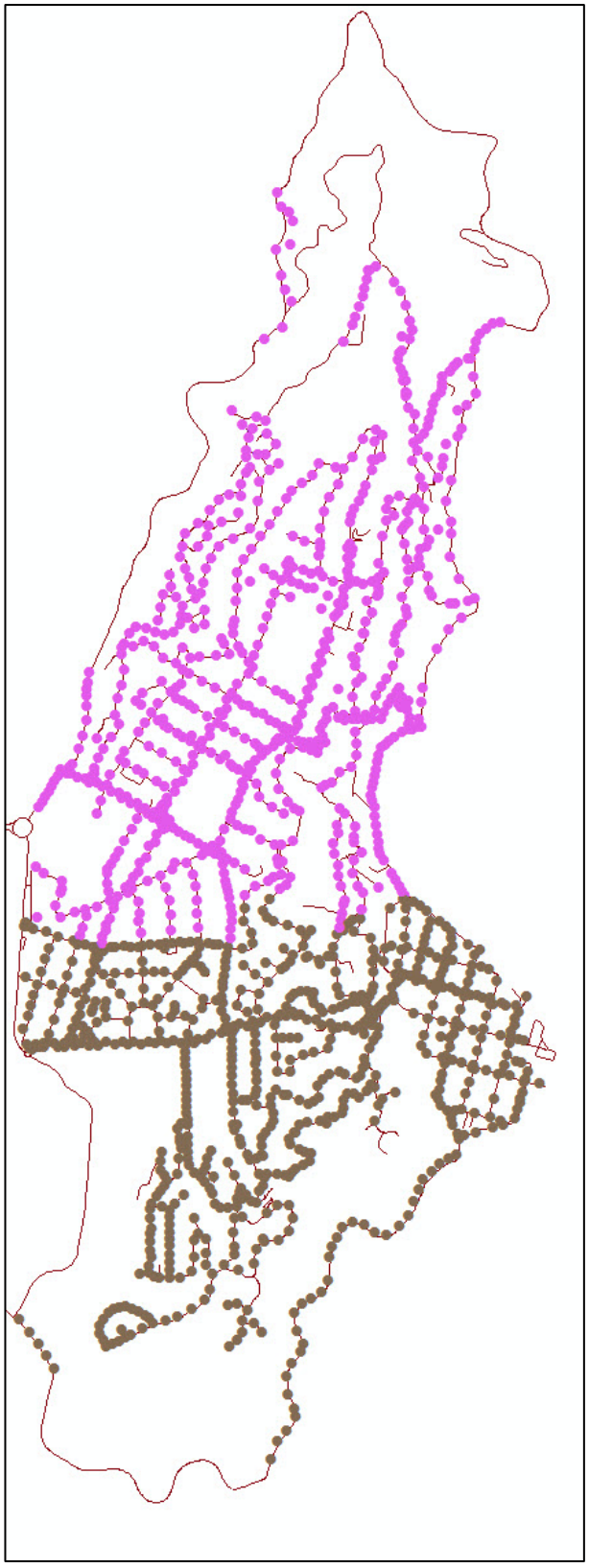
4 LED Job Lot Packages

The city's street lighting network has been packaged into 21 job lots of more or less 750 lights each. See diagram below:

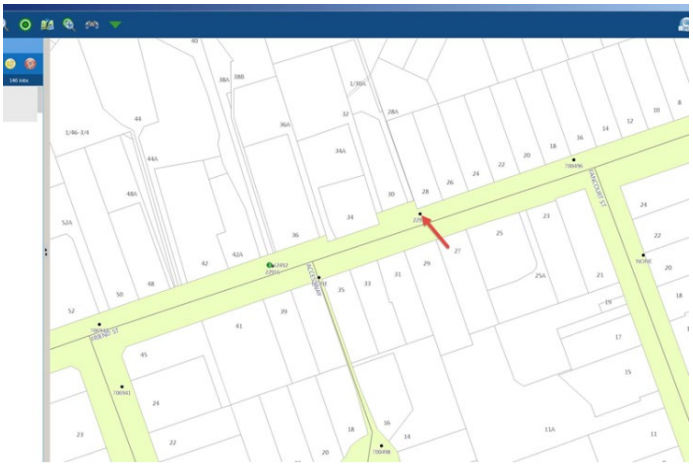


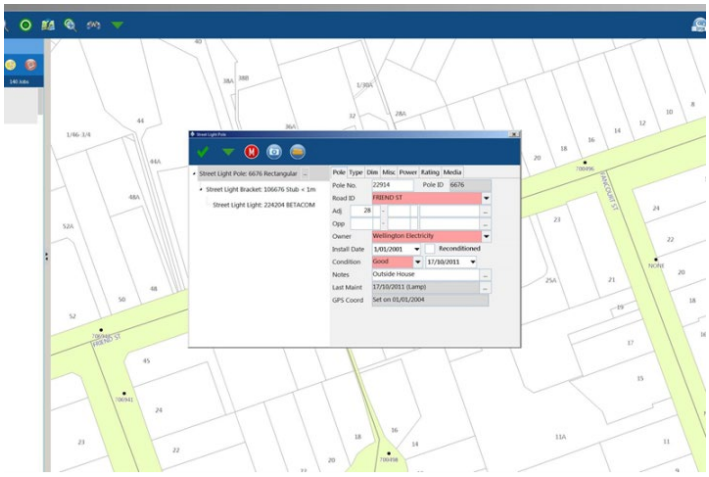
Once a job lot package has been issued to a contractor, only the issued package will be visible on the tablet in Pocket RAMM.

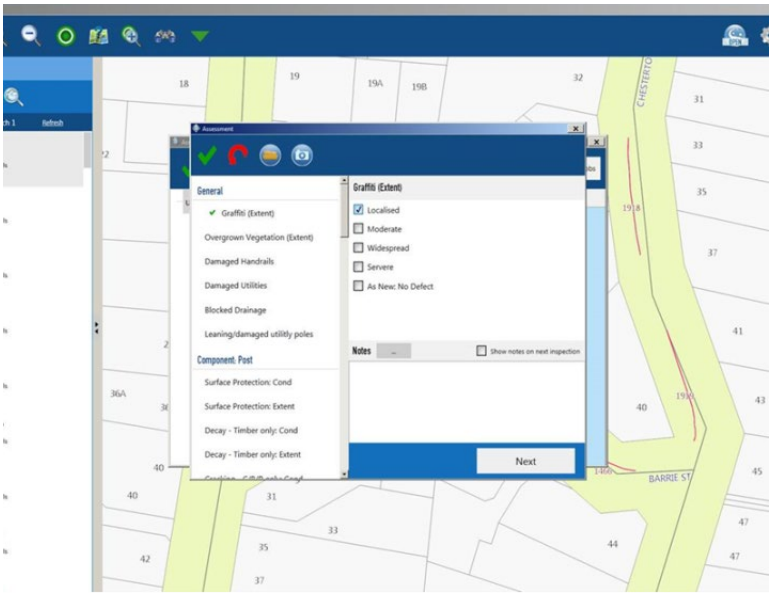
The following screen shot shows a zoomed in view of 2 adjacent packages. Each package issued to a contractor will show only those sites for the issued package.



The following screen shots are typical of those available to the Installer when locating the asset and entering the data or responses required:







5 Assessment Records Decision Tree

The Contractor shall complete the required fields in Pocket RAMM when assessing the site. While it is not practical to show screen shots of all views in Pocket RAMM, the following table sets out the question/response fields to be completed as required:

Question Group:	Question:	Response Options	Further Questions	Further Responses
Scope:	Is this light within the scope of the LED Rollout?	Yes		
		No	*Add notes*	
Measurements:	Height of existing light above carriageway	*Enter height*		
	Distance (left) to nearest street light	*Enter distance*		
	Distance (right) to nearest street light	*Enter distance*		
	Road Corridor width (fence to fence)	*Enter distance*		
	Pole set back distance behind kerb	*Enter distance*		
	Angle of light relative to road centre-line	*Select closest angle (90, 60, 45)*		
	Length of cable required	*Enter distance*		
	What is the diameter of the outreach arm?	*Enter diameter*		
General and Red Flags:	What is the light ID number from RAMM?	*Enter number*		
	Does RAMM accurately represent the assets on-site?	Yes		
		No	*Add notes*	
	Is this light already an LED?	No		
		Yes	Does it have a Nema socket?	Yes
				No
	Is this a V category road?	No		
		Yes	How many lanes are there?	*Select number (1,2,3)*
			What is the average width of the lanes?	*Enter width*
	Is this light at the end of a road?	No		
		Yes		
	Will the outreach arm support the new LED?	Yes		
		No	*Add notes*	
	Is the outreach arm unusual eg of the "swan neck" type?	No		
		Yes	*Add notes*	
	Is this existing street light recorded in RAMM?	No	*Add Notes*	
		Yes		
	Does this pedestrian crossing have overhead lights?	No		
		Yes		
	Is there clear vision between adjacent street lights?	Yes		
		No	*Select obstruction (vegetation, other)*	
	Have you identified a blackspot associated with this light?	No		
		Yes	*Add Notes*	
	Have you been approached by a customer, or do you have any concerns regarding this site?	No		
		Yes	*Add Notes*	
	What is the best means of access to the light?	EWP		
		Ladder	*Add Notes*	
	Are there any special traffic management considerations?	No		
		Yes	*Add Notes*	
	Apart from any standard reduction spigot adaptors, are there any special adaptors required?	No		
		Yes	*Add notes*	

6 Configuration File

Following the uploading of each day's assessment information, the Engineer will run an algorithm to calculate the settings required for each LED. The Engineer will then copy the settings to the Configuration File for the job lot grouping. After reviewing the updated Configuration File, and once satisfied that it best reflects the settings required for each LED, the Engineer will email it to the Contractor. As the job lot progresses, both the Engineer and the Contractor will enter their respective data into the Configuration File, and preferably on a daily basis, forward the updated file to the other, until both parties have completed their tasks for the grouping.

The following table shows the layout of the Configuration File:

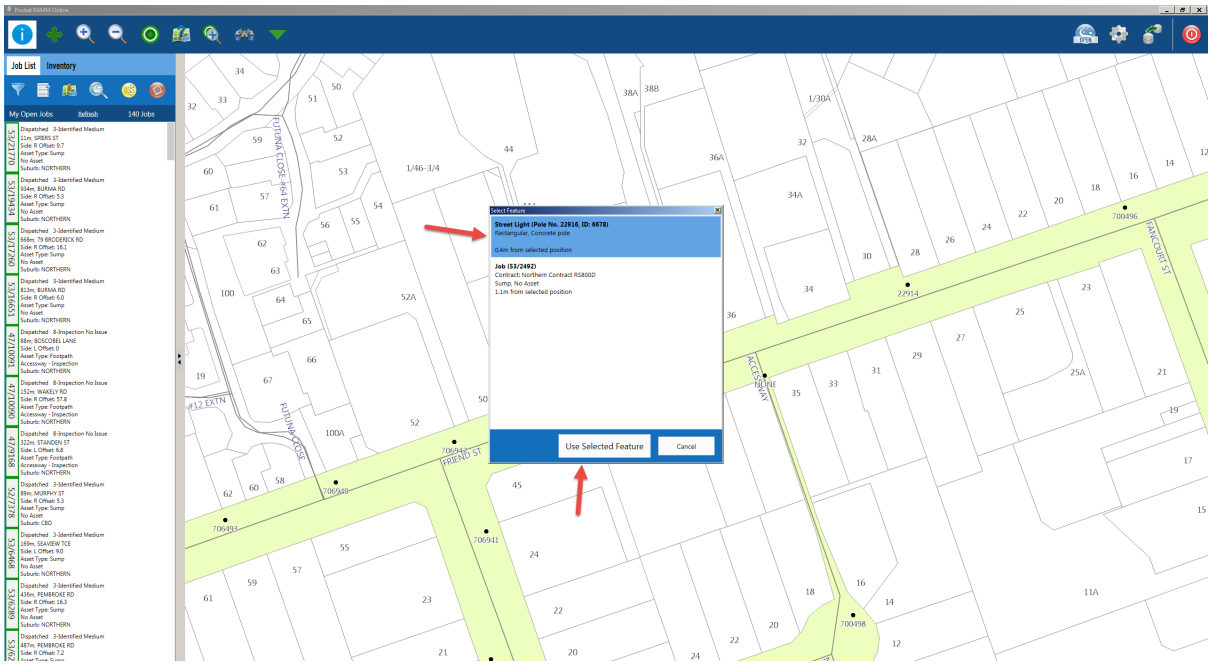
Light ID (RAMM)	P or V Category	mAmp Setting	Technician Name	Preparation Date	LED Serial Number (Manufacturer)

7 Procedure for light install in pocket RAMM

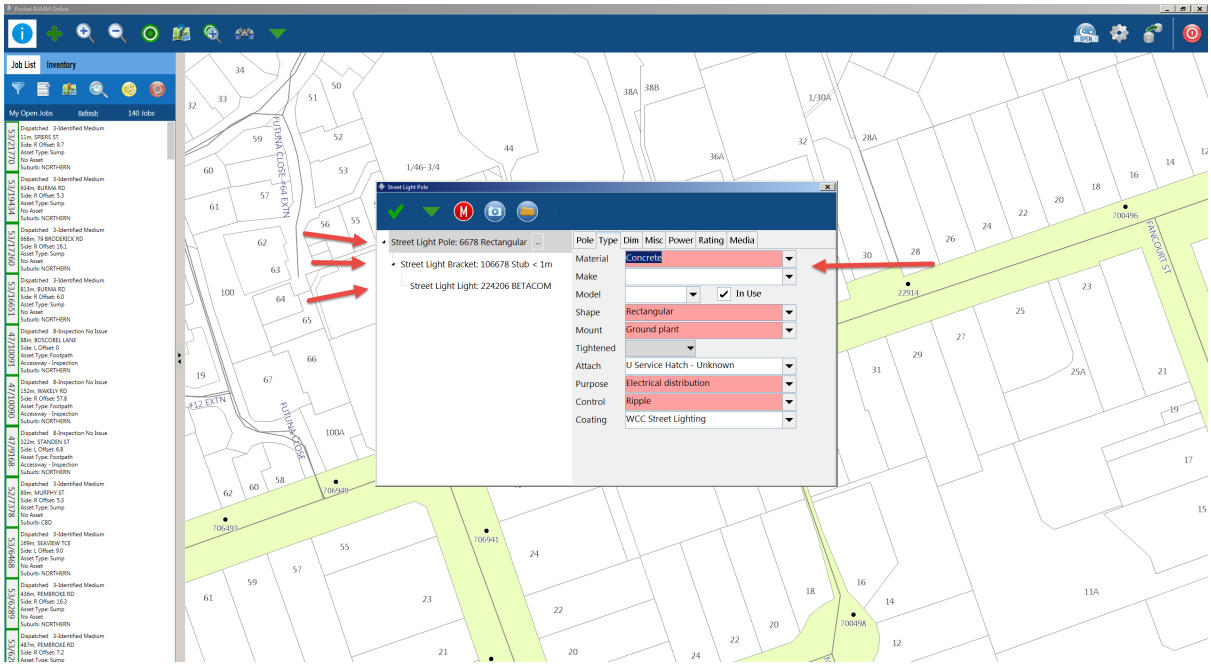
Once you have installed the light you will need to complete the following entries in Pocket RAMM

Orientate the map to your location either using the GPS or the find road feature. Be sure to confirm that you are working on the correct asset.

Select the street light:

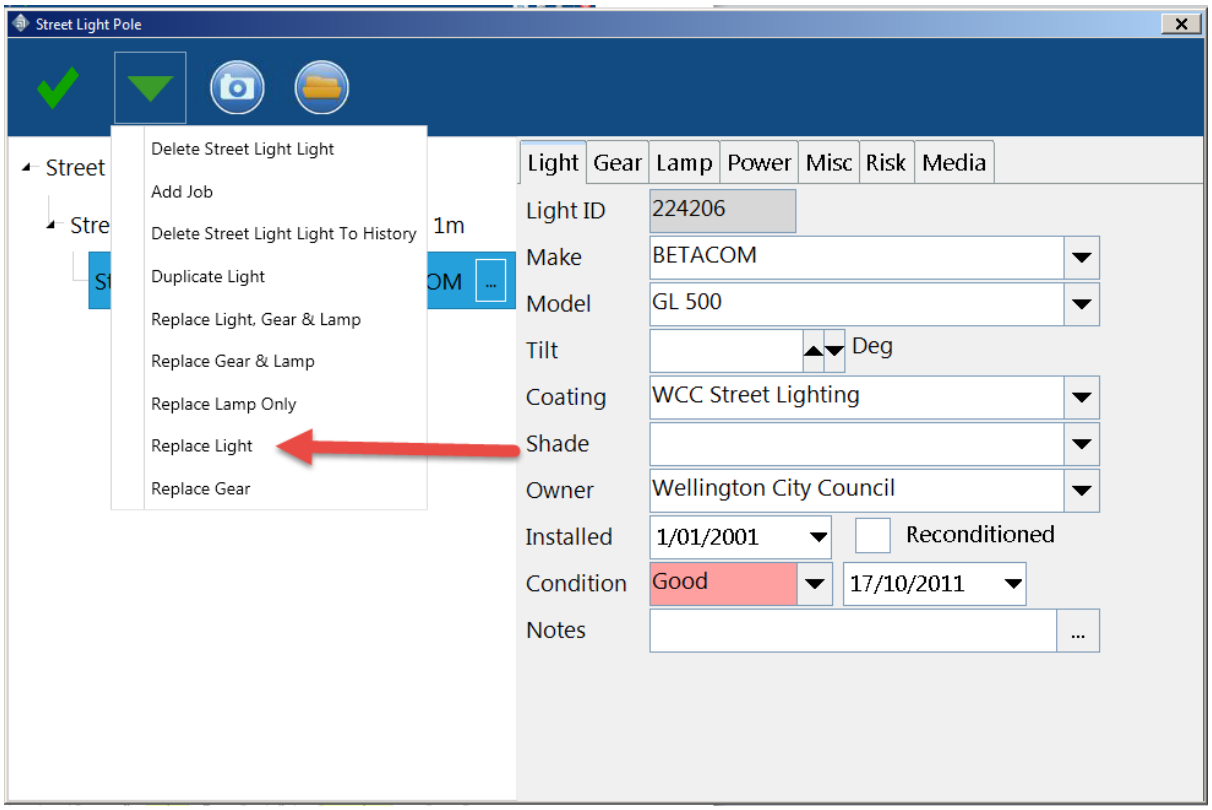


Here you will need to check that all of the asset attributes are correct, start with the pole then the bracket. Be sure to check all of the tabs. The light will not need updating as it will have now been replaced.

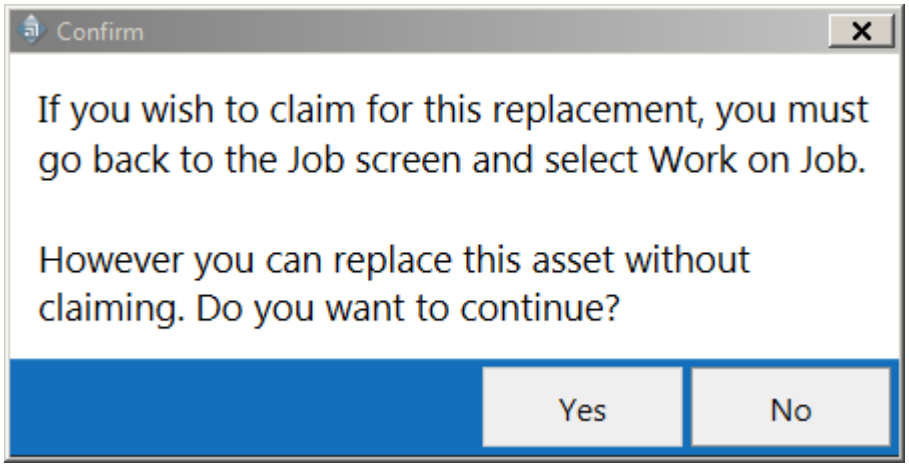


Now press the green down arrow and select the Replace light feature:

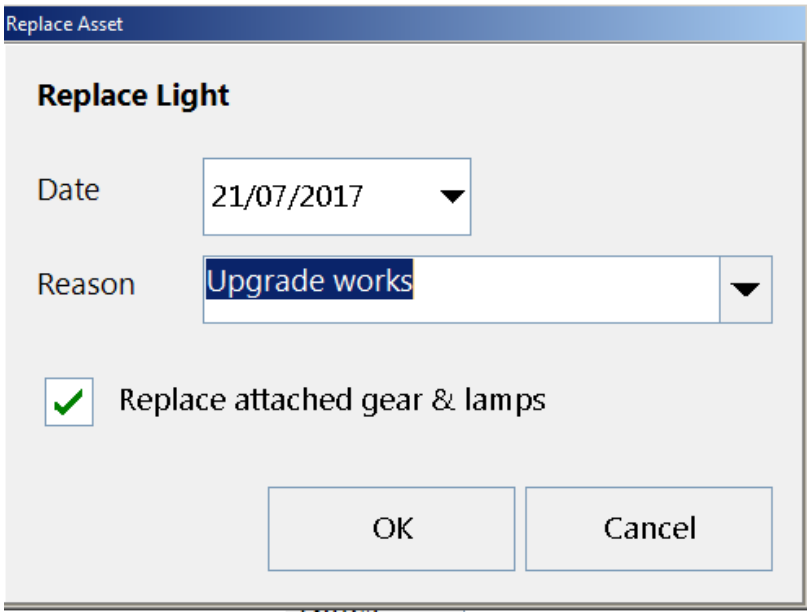
Please ensure if there are 2 lights on one pole that you replace both of them



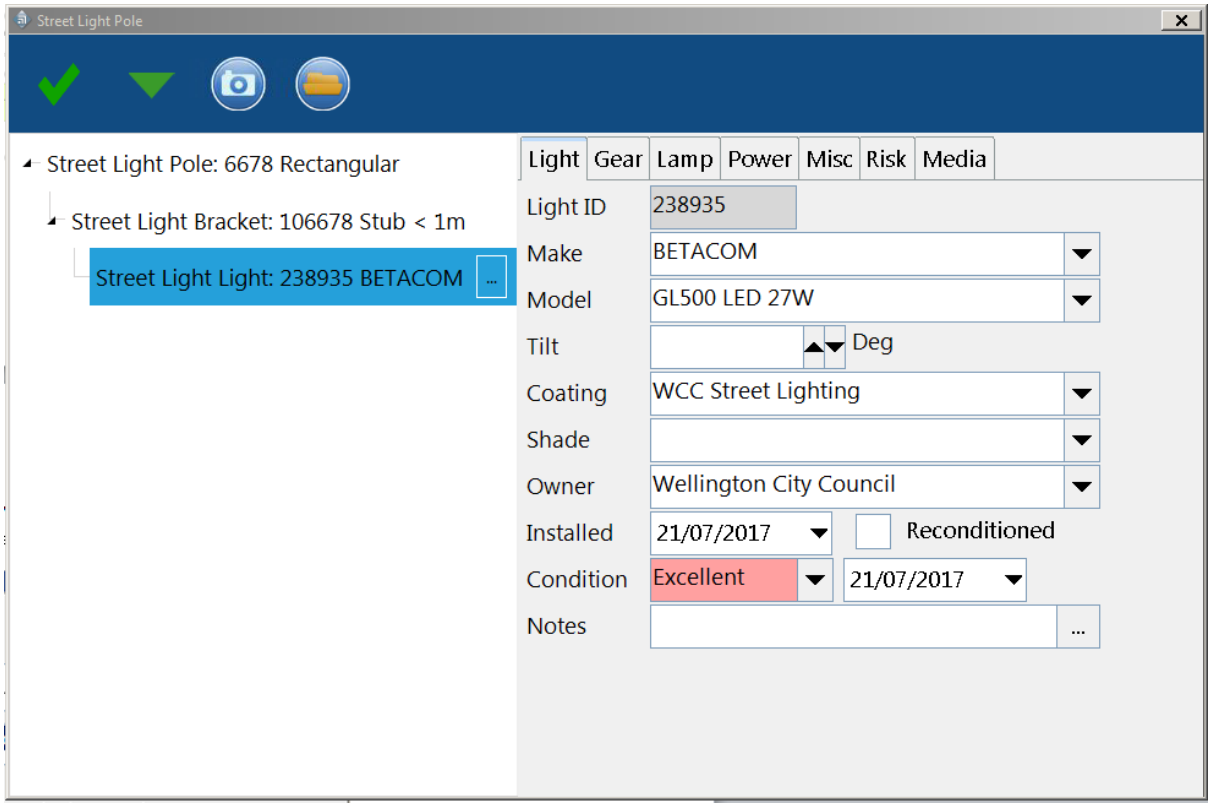
Select yes if the Following window comes up:



Select “LED Rollout” as the replacment reason and then press OK (Please ensure that the replace attached gear and lamps is ticked.

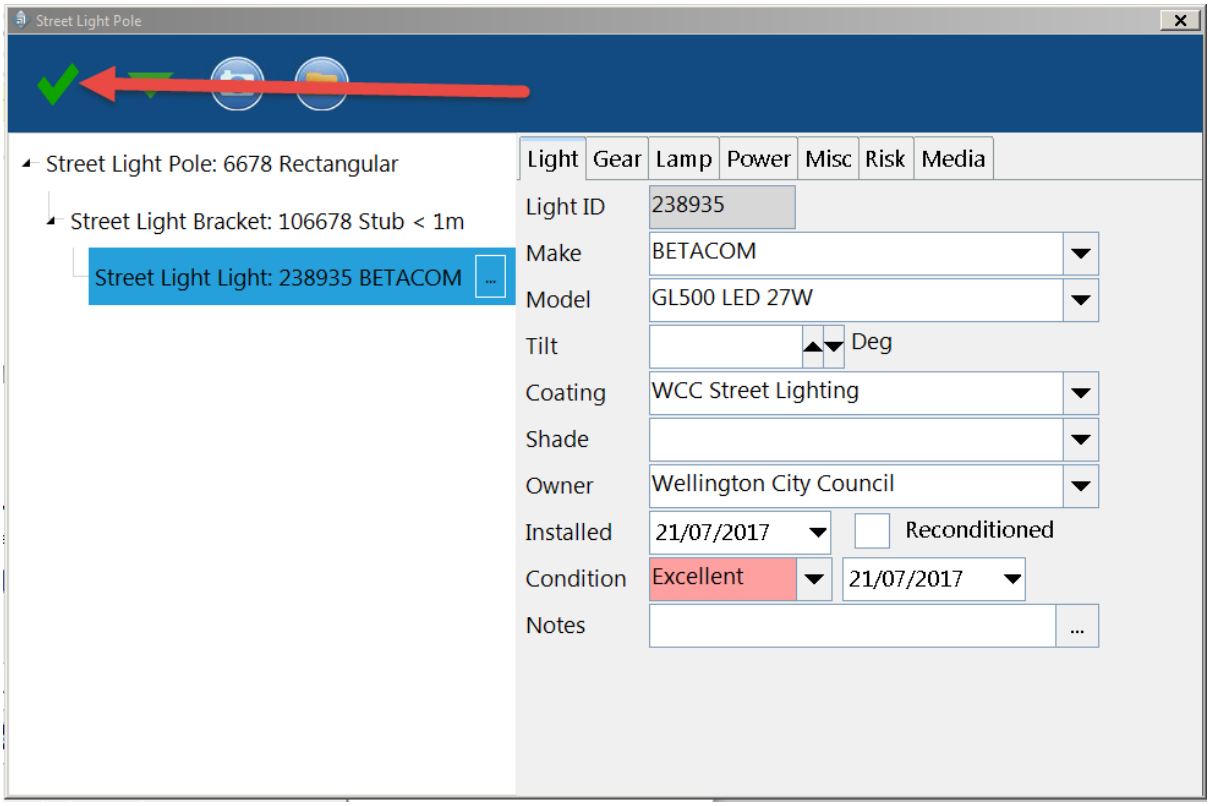


Please ensure that you fill in the details of the new light including all the tabs, gear, lamp etc this is extremely inportaint.

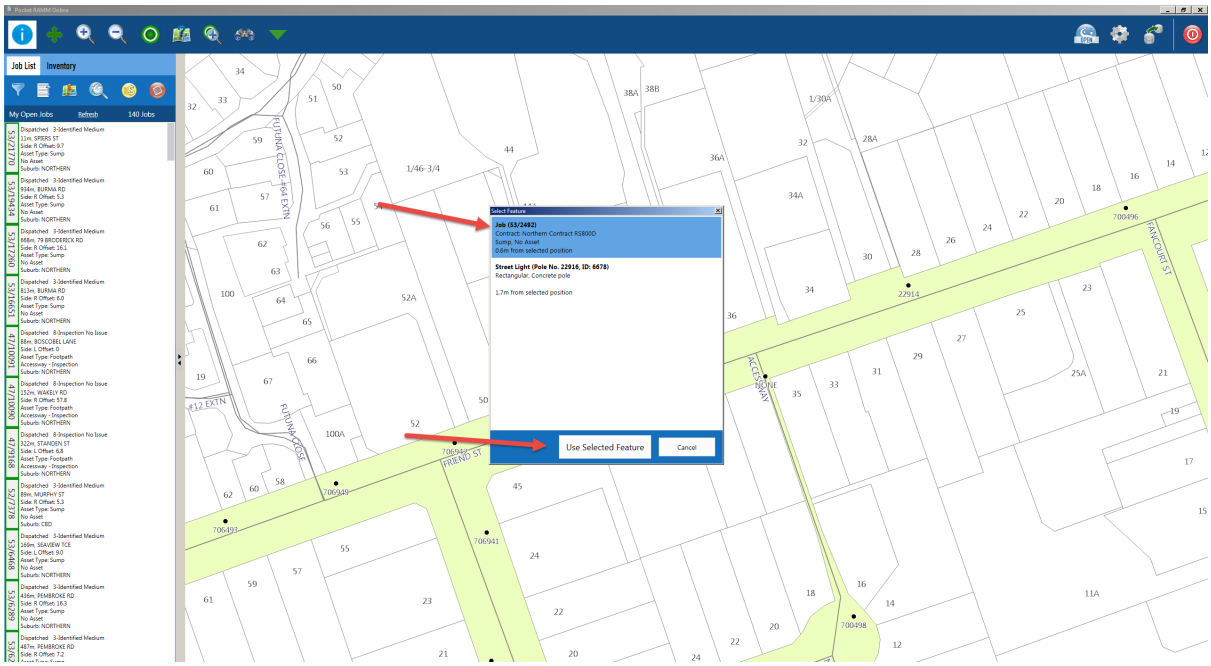


Press the green tick to save your changes:

Once again if there is a 2nd light linked to the pole then repeat these steps for the other light.



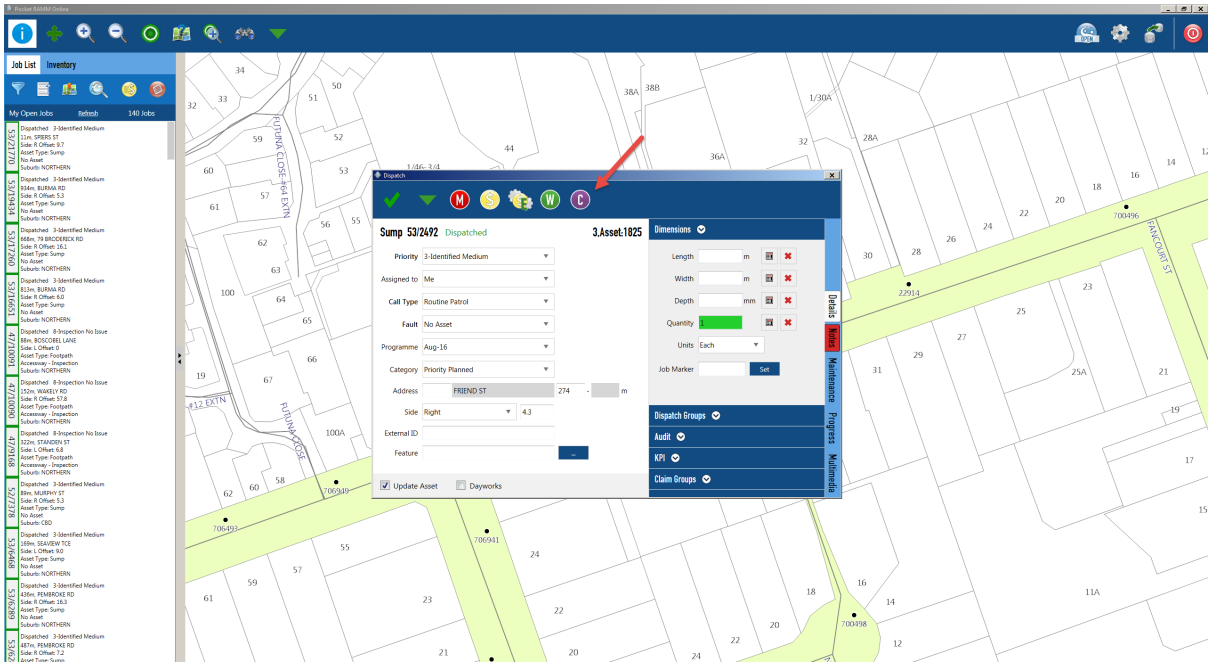
Now you can claim for the job by selecting the job/jobs linked to the street light:



Simply press the compete button :

Repeat steps if there are 2 or more jobs linked to the pole (Because of the additional lights if applicible)

The claim will automaticlly occur.



You are now ready to move on to the next light.

Transport and Waste Operations Accelerated Rollout of Street Lighting LEDs and CMS Contract 114.0##

Draft Dated 25 July 2017

Volume 3 – Payment

Absolutely Positively **Wellington** City Council

Me Heke Ki Pōneke

Tender and Contract Document Structure

For ease of use, the Tender and Contract Documents comprise eight sections contained in five volumes as follows. This volume is highlighted below:

Volume 1 – Request for Tender
- Section 1 – Request for Tender

Volume 2 – Conditions of Contract
- Section 2 – Conditions of Contract and Schedules
- Section 3 – General Requirements
- Section 4 – Activity Specifications

Volume 3 – Payment
- Section 5 – Schedule of Prices and Basis of Payment

Volume 4 – Specifications and Appendices
- Section 6 – Technical Specifications
- Section 7 – Standard Drawings
- Section 8 – Appendices

Volume 5 – NTTs and Post Tender Correspondence

Measurement and Payment

Item	Description	Unit	Quantity	Rate	Amount
1	Site Assessment, LED Preparation and Installation	each	4000		

Item 1

This rate shall allow for all labour, plant, vehicles, equipment and material costs required to complete the following:

Site Assessment

All costs associated with planning site assessments, travel to each site for the assessment, assessing the site, measuring and recording information in RAMM as required in the drop down and text fields set up in Pocket RAMM.

LED Preparation

All costs associated with:

- Ordering, receiving, handling and storing necessary stocks of LEDs and LPCs from the Engineer's nominated distribution source (note: delivery costs to be carried by the nominated distribution source, not the Installers)
- supplying other components including spigot and other adaptors, cable leads and any other fittings that may be necessary. (Note some LED suppliers may supply standard sized spigot adaptors as part of the LED supply. Installers are encouraged to make use of this and make the necessary arrangements with the LED supplier for supply of adaptors)
- Supplying and fitting the correct length cable lead to the LED, as recorded while assessing the site
- Supplying a laptop, loading software provided by the Engineer and using this software and a wireless connection tool (also provided by the Engineer) to programme the LED driver in accordance with the Configuration File provided by the Engineer following his analysis of the site assessment data
- Recording on the Configuration File the selected LED's serial number against the RAMM ID for each location
- Supplying sealant and fitting and sealing the spigot adaptor(s) as required, all to ensure the LED remains secure and weathertight once installed. If a spigot adaptor is not required, the bead of seal may be applied on site during LED installation.

- Fitting a reusable shorting cap to the NEMA socket and placing an LPC within the LED packaging for retrieval and installation on site. (The Engineer will provide sufficient shorting caps for the Installers to reuse. This number will be based on the Installer's indicative installation rate provided with its tender).

LED Installation

All costs associated with:

- Scheduling each prepared LED's installation, delivering the LED to its assigned site, supplying all labour, plant, equipment and fixings necessary to install it, installing the LED to specification, and setting, checking and confirming tilt.
- Supplying all equipment and suitably qualified/certified personnel for implementing all safety and temporary traffic management requirements for the installation
- Removing the shorting cap, replacing it with the LPC, and returning the shorting cap for reuse on other LEDs
- Environmentally responsible disposal of the replaced non-LED lamps, gear trays, cable and other componentry surplus to requirements. Where existing LEDs are to be replaced and the Engineer requires it to be salvaged for re-use, it shall be returned safely to the contractor's depot and stored there securely until further notice from the Engineer.
- Leaving the site clean and tidy
- Completing all outstanding records including payment claims relating to the installation.

Transport and Waste Operations Accelerated Rollout of Street Lighting LEDs and CMS Contract 114.0##

Draft Dated 25 July 2017

Volume 4 – Specifications and Appendices

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Tender and Contract Document Structure

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- Section 6 – Technical Specifications
- Section 7 – Standard Drawings
- Section 8 – Appendices

Volume 5 – NTTs and Post Tender Correspondence

Technical Specification - Site Assessment

Scope and Purpose
This specification sets out the requirements for assessing each site prior to preparing an LED for subsequent installation at the site. Information obtained from this site assessment will be used to confirm/amend the information in the RAMM database, set the LED driver's initial settings, and to record information necessary for supplying and fitting the correct cable length, and finally supplying and fitting any spigot size and angle adaptors necessary for subsequently attaching the LED to the existing outreach arm or other support mechanism.

Site Assessor Competency
The person appointed to undertake the site assessment shall be competent in:

- The use of RAMM (RAMM GIS, RAMM Contractor, RAMM Assessment and Pocket RAMM) and in the use of the Microsoft standard suite of software (e.g. Excel, Word, Project etc.,)
- Accurately assessing the length of cable required to be fitted to the LED (for connecting to either the overhead fuse or the fuse within the base of the pole as appropriate)
- Accurately assessing the diameter of the outreach arm and assessing the various adaptors and other fittings necessary to subsequently attach the new LED to the existing outreach arm
- Accurately measuring and recording the various distances required for determining driver settings
- Accurately assessing the condition of the outreach arm, and recording any concerns that the outreach arm or its attachments to the pole may not adequately support the new LED
- Conducting the site assessment in a safe and considerate manner in accordance with the approved safety and traffic management plans

Process
The Engineer will make available to the contractor for use on this contract, a Tablet set up with access to the Council's RAMM database. The Engineer will provide the contractor with job lots of LEDs to be installed as packages; each job lot issued in accordance with the provisions of the contract.

The contractor shall spatially identify the LEDs in RAMM contractor, and record in the relevant RAMM module, the information sought by the contract for each site as set out in Assessment Records below.

Assessment Records
RAMM Database
The assessor shall compare information recorded in the RAMM database with that on site, and where there is a significant difference record as a red flag (see below):

- Location of pole (>2m)
- Type of pole
- Length of outreach arm

Prior to leaving the site, these records and the assessor's name shall be entered directly into the relevant fields in Pocket RAMM. Where this is not possible, these records may be recorded by other means but must be entered into RAMM within 1 Working Day of the site assessment.

Measurements and observations for establishing the LED driver settings

- Height of existing street light above carriageway
- Distances to nearest adjacent street lights in each direction
- Road corridor width (e.g. boundary fence to boundary fence)
- Note any street light that is at the head of a cul-de-sac or end of an urban dead end street
- Set back distance from the kerb

Prior to leaving the site, these records shall be entered directly into RAMM Assessment in the Tablet provided by the Engineer for this project.

Measurements for preparing LED connections

- Length of cable required for connecting LED to existing fuse
- Diameter of existing outreach arm at the spigot end
- Any other special fittings necessary to attach the LED to the outreach arm

Prior to leaving the site, these records shall be entered directly into RAMM Assessment in the Tablet provided by the Engineer for this project.

Records for Installers

- Any site access and traffic management special considerations
- Pole access means (ladder, EWP etc.)

While Records for Installers are for the contractor's benefit, it is suggested they be entered into RAMM Assessment in the Tablet provided by the Engineer for this project.

Red flags for the Engineer's information

- Any significant differences between information recorded in RAMM and that observed on site in regards to the type and location of a pole, and length of outreach arm
- Any concerns over the integrity of the outreach arm or its fittings to carry the LED
- Large "swan neck" type decorative outreach arms
- Existing streetlights along the job lot route that appear to not be recorded in RAMM
- Job lot lights that are either walkway lights, accessway lights, decorative lights, or lights whose primary purpose is not to light a street or pedestrian crossing
- Pedestrian crossings along the job lot route that do not have pedestrian crossing poles or lights
- Existing street lighting LEDs along the job lot route that do not appear to have a fitted LPC
- Poor line of site between adjacent streetlights

- Possible blackspots requiring infill lighting
- Vegetation impairment of street lighting
- Customer interfaces and concerns that may need to be attended to by the Engineer
- Any other lighting concerns relating to the site or elsewhere along the job lot route

These records shall be entered into RAMM Assessment in the Tablet provided by the Engineer for this project.

Information Transfer
Each day the Contractor shall upload the collected data to RAMM where it will be accessed by the Engineer and analysed. Following analysis, the Engineer will send to the contractor an email with a file of information (Configuration File) for the contractor's use when preparing the LEDs.

Equipment
Distance Measurements
The assessor shall use a laser distance meter such as the Leica Disto D510 or equivalent for measuring distances and heights. Distance measurements should be accurate to within 4% (ie ±1m in 25m).

Signs, Cones and Barriers
All traffic management equipment shall comply with that set out in the approved safety and traffic management plans.

Technical Specification - LED Preparation

Scope and Purpose
This specification sets out the requirements for programming each LED with its driver's initial settings, and supplying and fitting a cable and any attachments necessary for the subsequent physical installation of the LED on site.

Technician Competency
The person appointed to prepare the LED shall be competent in:

- Selecting and attaching the required type and length of cable to the LED in a competent and professional manner
- Basic level use of the Microsoft standard suite of software (eg Excel, Word, Outlook etc.)
- Sourcing and fitting any spigot or other adaptors required in order for the LED to be subsequently attached to the outreach arm or other support mechanism
- Programming the settings shown in the Configuration File into the transfer tool provided by the Engineer (eg Philips MultiOne Interface USB2DALI), and transferring these to the LED driver
- Accurately recording the LED serial number against the site's RAMM ID in the Configuration File and marking the outside of the LED and its packaging with both numbers for subsequent ease of identification on site
- Handling, preparing, repacking and storing the LED in a manner that ensures the LED's IP66 rating is not compromised

Process and Records
The Engineer will regularly email the contractor a file of information (Configuration File) for preparing each LED. The contractor's technician will select the correct LED, set the driver settings to those shown in the Configuration File using the transfer tool provided by the Engineer. Once the driver settings have been made, the contractor shall complete the unfilled fields in the Configuration File, including serial number of LED, technician's name and date of LED preparation.

At the end of each day, the Contractor shall email this updated Configuration File to the Engineer.

Workshop Environment
The workshop environment for preparing the LEDs shall be clean, well ventilated, of low humidity, and sufficiently spacious to accommodate the number of LEDs stored or handled at any one time without risk of damage to them.

Spigot and Other Adaptors
Spigot and any other adaptors required to attach the LED to the outreach arm, shall be supplied by the contractor and securely attached to the LED. Some LED suppliers will provide a range of spigot adaptors as part of their LED supply to the Principal. Supply of any other adaptors required to mount the LED on its outreach arm or other support, will be the contractor's responsibility. The Principal will advise the contractor which LED suppliers provide spigot adaptors as part of the LED supply, and contractors are encouraged to make use of this facility.

The adaptors shall be galvanised, of the correct end sizes to ensure a snug fit both ends, and minimum wall thickness 4mm. The adaptors shall be supplied with 2x9mm stainless steel hex head bolts (or hex socket head screws or similar) for attaching to the outreach arm on site.

A bead of suitable sealant is to be run around the outside of the adaptor where it enters and mates with the LED housing. This sealant is to act as an initial barrier to wind-blown or capillary action moisture penetration.

Cabling Supply and Fitting
All cabling for the LEDs shall be neutral screen two core 2.5mm^2 and shall be fed through any outreach adaptors already fitted to the LED and tightened securely to the correct terminals within the LED in accordance with all relevant industry standards. The supply end of the cable shall be left for the on-site installer to subsequently strip and prepare for attaching to the fuse on site.

Closing the LED
On completion of the driver programming and attaching the power supply cable to the LED terminals, the lid of the LED shall be carefully closed and clamped to ensure its IP66 rating is not compromised. Care shall be taken to ensure any gaskets or seals are in their correct location and position, flat against their mating surface and properly aligned to seal against the closing lid. Care shall also be taken to ensure the lid hinges are properly aligned and seated, to ensure the 2 closing surfaces are square and even.

Light Point Controller
The technician shall fit a recycled shorting cap on the NEMA socket and place the Engineer supplied light point controller (LPC) in the LED packaging for retrieval and installation on site by the installer. (The Engineer will provide sufficient shorting caps for the Installers to reuse. This number will be based on the Installer's indicative installation rate provided with its tender).

Technical Specification - LED Installation

Scope and Purpose

This specification sets out the requirements for removing and disposing of the existing HID lighting equipment at the site and installing each prepared LED by attaching it to the existing outreach arm or other existing on-site support mechanism as appropriate.

Installer Competency

The persons appointed to install the prepared LEDs shall be competent in:

- Traffic management as required by the approved Safety and Traffic Management Plans for the project
- Working in close proximity to overhead and underground live wires, and holding all necessary certifications and qualifications for this type of work to satisfy relevant industry standards including Wellington Electricity's Electricity Network Standard: Street lighting Installation Requirements
- Operating an EWP and working at height from an EWP
- Working at height from a ladder
- Removing existing HID equipment from its outreach arm in a safe and environmentally friendly manner. Placing the removed equipment safely and securely in the van or other vehicle for subsequent disposal back at the depot
- The use of RAMM GIS and the use of the Microsoft standard suite of software (eg Excel, Word, Outlook etc)
- Confirming the LED is the prepared LED for the site by cross referencing the serial and RAMM numbers on both the packaging and on the LED with that shown in RAMM for the site
- Handling and installing the LED in a manner that ensures its IP66 rating is not compromised
- Feeding the new LED cable through the outreach arm (or equivalent on-site support bracket), and through the existing pole for non-overhead supply LEDs, either by using the existing cable as a draw string or as may otherwise be necessary.
- Installing the new LED and its adaptors and other fittings onto the existing outreach arm or equivalent support bracket
- Installing new overhead line fuses in accordance with all relevant industry standards, regulations and codes of practice.
- Preparing the end of the cable and connecting it firmly and securely in accordance with all appropriate industry standards, to the load side terminals of the pole fuse or overhead line fuse.
- Completing all work on site and leaving the site in a clean and tidy condition

Process

The contractor shall check they have the correct LED prepared for the site by matching the information in RAMM with that shown on the packaging and the LED itself. The contractor

shall then remove the existing streetlight and install the new LED. This includes feeding the cable through the outreach arm/pole as appropriate, and wiring the cable to the existing fuse carrier.

Plant and Equipment
Elevated Working Platform (EWP)
Typically the contractor will require and provide an EWP with a reach of around 10m to 12m, however on occasions the contractor will require and provide an EWP capable of reaching further than this (eg up to 14m).

All EWP units shall be well maintained and hold current certification to all relevant industry standards.

Ladders
Where outreach arms or equivalent support brackets cannot be reached using EWPs, the contractor shall provide and work off ladders. The ladders and associated equipment (eg harnesses) shall comply with all relevant industry standards.

Fuses (overhead and non-overhead)
Line fuses shall satisfy the following requirements:

- HRC fuse in the live conductor
- 20amp Michaud K223 fuse carrier
- 6amp HRC fuse link with fusing characteristics gG 120kA

For feeds other than overhead, the lead shall be attached to the demand side of the existing fuse.

Installation shall satisfy all relevant industry standards, including AS/NZS 3000:2007 and AS/NZS 1158.

LED Tilt
After installing the LED loosely on the outreach arm, its tilt, as measured across the visor using an electronic level (or similar), shall be adjusted to zero. The LED shall then be firmly secured to its outreach arm or other support bracket and checked once more for zero tilt. Further adjustments may be required to achieve zero tilt under final tightening.

Light Point Controller
The LPC shall be retrieved from the packaging and fitted into the NEMA socket on the LED. The shorting cap shall be salvaged and returned to the workshop technician, for reuse when preparing subsequent LEDs.

Pedestrian Crossing LEDs
When installing LEDs at pedestrian crossings, care shall be taken to place it on the correct side of the crossing:

- DX optics where the crossing is on the right hand side of the LED
- SX optics where the crossing is on the left hand side of the LED

Installation Records
RAMM Database
Within one day of completing the installation, the installer shall update the RAMM database with the name of the installer and the date and time of LED installation (livening date).

The livening date will inform the energy invoicing system of the date of change in energy consumption at the site.

Site Cleanup
Before leaving the site, the contractor shall check the site has been left clean and tidy, that the light point controller has been fitted, that the shorting cap has been retrieved for reuse, all packaging and other waste material has been collected, and that the door to the pole's fuse compartment (where one exists), has been firmly and securely closed.

The replaced HID lantern and it components shall be removed to the depot where the hazardous components shall be separated from the remainder, and stored and disposed of in accordance with any legislative requirements and environmental best practice.

Appendices

- Wellington Electricity, Electricity Network Standard: Street lighting Installation Requirements
- WCC Code of Conduct
- WCC List of street with restricted hours of work

Asha Harry

From: [redacted]
Sent: Wednesday, 9 August 2017 8:42 am
To: [redacted]
Subject: FW: Supply Agreement
Attachments: Energylight - WCC Supply Agreement v2.pdf; Luminaire Procurement Specific Conditions.docx; Copy of AT LED Procurement Agreement.docx

Hi [redacted]

Here are copies of the Energy Light agreements.

Cheers

[redacted]

[redacted]
Team Leader Transport Infrastructure | Transport and Waste Operations | Wellington City Council
[redacted]

From: [redacted]
Sent: Thursday, 3 August 2017 11:30 a.m.
To: [redacted]
Cc: [redacted]
Subject: Supply Agreement

Hi [redacted]

Sorry for the delay, I hope that your process with the installers is going to plan.

Please find attached the proposed agreement, we have tried to take in most of the AT and WCC wording that should be suitable to both of us but I would appreciate your feedback.

Look forward to hearing from you.

[redacted]

[redacted]
Product Director
[redacted]

Flare Ltd | Christchurch | New Zealand
an Energylight Group Company

Absolutely Positively
Wellington City Council
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SECTION C: SPECIFIC TERMS

These Specific Terms will be read in conjunction with the definitions in clause 21 of the General Terms).

Item	Clause	Specific Term
1	**Contact Details**	**The Purchaser** Wellington City Council PO Box 2199 101 Wakefield St Wellington 6140 New Zealand For the Attention of: [redacted] **The Supplier** EnergyLight 204 Cumnor Terrace Christchurch 8023 New Zealand For the Attention of [redacted]
2	**Representatives** (clause 21.1 of the General Terms)	**The Purchaser Representative** [redacted] Team Leader Transport Infrastructure Wellington City Council 101 Wakefield St Wellington [redacted] [redacted] **The Supplier Representative** [redacted] Sales – Lighting Specialist [redacted] [redacted] [redacted]

Item	Clause	Specific Term
3	**Term** (clause 1.2-1.4 of the General Terms)	**Commencement Date**: 30 July 2017 **Expiry Date**: 31 March 2018
4	**Renewal** (clause 1.3 of the General Terms)	**Right of Renewal:** No **Maximum number of renewal periods**: N/A
5	**Goods** (clause 3 of the General Terms)	Refer EnergyLight quote reference number 13181-3 dated 18 July 2017 (total value excluding GST of [redacted]. Total number of items to be confirmed during course of contract.
6a	**Delivery Address** (clause 4.1 of the General Terms)	Downer ITS Limited [redacted] Contact: [redacted] or his authorised representative (whose name will be notified to the Supplier, in writing, from time to time by the Purchaser)
6b	**Delivery Programme** (Clause 4.5 of the general Terms)	The Purchaser will place one or more orders for luminaires in quantities corresponding to the minimum and/or optimum consignment volume(s) nominated in the Supplier's quote. The first order (to be placed following signing of this contract) will be for 12,000 luminaires (being a mix of 60/40 P cat/ V cat luminaires). 6000 of these (also in the P cat/ V cat ratio of 60/40) are to be delivered on or about 1 December 2017, preferably earlier if at all possible. The other 6000 of the first order are to be delivered by 1 February 2018. An order for the remaining luminaires (3000 more or less) will be placed within 2 months of the first order, by which time final numbers of luminaires in each category will have been determined. The order for these remaining luminaires shall be delivered prior to 1 April 2018, time being of the essence. Failure to meet these delivery dates shall be deemed to be a material breach of the contract by the Supplier.
6c	**Delivery Hours** (Further to clause 4.5 of the General Terms)	Deliveries to the Delivery Address as set out in clause 6a of these Specific Terms shall be made between the hours of 8am and 4:30pm on Business Days, subject to prior arrangement with the named contact or their authorised representative. Delivery outside of these hours may be made only by prior agreement with the named contact or their authorised representative.

Item	Clause	Specific Term
6d	**Packaging** (Further to clause 4.6 of the General Terms)	All deliveries shall be contained within appropriately wrapped and packaged containers – e.g. wrapped pallet, shipping containers and the like. Loose delivery will not be acceptable. Delivery dockets shall clearly identify the number of units included in the delivery, and reference the order date and order number as provided by the Purchaser at the time the order was placed.
7	**Price and Payment Fee** (Clause 10 of the General Terms	The price per unit payable by the Purchaser shall be in accordance with the Supplier's quote as set out in clause 5 of these Specific Terms. The unit rate shall be fully inclusive of all of the Supplier's costs inclusive of (but not limited to): • The purchase price from the manufacturer • National and international freight charges – howsoever transported • Import duties and taxes • Insurances including deductibles and the event of claims • Currency fluctuations)both up and down) • Overheads and profit **Tax invoices must be sent to** the Purchaser's Representative as set out in clause 2 of these Specific Terms. All tax invoices must be in New Zealand Dollars **All tax invoices shall include**: • Contract name and number (*name….number*) • Purchase Order number (*P…..)* • Purchaser's Representative's name (*name*) • Details of the number of units delivered and applicable unit rates as calculated in accordance with the Contract • Confirmation of delivery receipt, signed by the named contact person as set out in clause 6a of these Specific Terms, or their authorised representative. **Payment Timing**: The time for payment shall be on the 20th of the following month from the date of issue of any Tax invoice.
8	**Reporting Requirements** (clause 12.2 of the General Terms)	Not Applicable
9	**Specific Warranties** (clause 11.3 of the General Terms)	Not Applicable

Item	Clause	Specific Term
10	**Warranty Period** (clause 11.3 of the General Terms)	[redacted]
11	**Additional Applicable Requirements** (clause 8.1 of the General Terms)	Not Applicable
12	**Limitation of Liability** (clause 16.6 of the General Terms)	[redacted]
13	**The Supplier's Insurance** (clause 16.7 of the General Terms)	[redacted]
14	**Other Specific Terms** (clause 16.7 of the General Terms)	The following clauses of the General Terms are deleted: 6.4 (Incorporated into clause 6.3) 6.7 (Surplus orders to be retained by Purchaser) 20.13 (Does not apply to the Purchaser) 21.2.(c) (Duplicate clause of 21.2.(b)) The Supplier acknowledges that should the Purchaser secure an order of 12,000 (minimum) further units from a Territorial Authority with whom the Council is currently working, then any reference to the Supplier's quote in these Specific Terms relates to the Supplier's quote ref 13183-3 ([redacted]) In this case, the delivery and contact details (see clause 6 of these Specific Terms) relating to this second Territorial Authority will be advised separately and applied accordingly.
15	**Branding**	**Additional Terms** The Supplier will not use any of the Purchaser's trademarks, service marks, logos or other brand identifiers (each a Purchaser's brand) without the prior written approval of the Purchaser. The Supplier will, if required by the Purchaser, use the Purchaser's brands in any signage, correspondence, or other documentation relating to the Agreement. Any use of the Purchaser's brand will be for the purpose of this Agreement only, and is to be in accordance with the branding requirements notified by the Purchaser to the Supplier.

The other terms relating to the supply of the Goods under this Agreement will be on the General Terms as attached. In the event of any conflict these Specific Terms will prevail.

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Contract Signing Page

Contract No:_____ **PROCUREMENT OF LED LUMINAIRES**

This agreement is made the _____ day of_____(month)_____(year)

Between

Wellington City Council ("the Purchaser")

And

_____("the Supplier")

Agreement

The Supplier agrees to provide to the Purchaser and the Purchaser agrees to purchase, the Goods on the terms set out in this Agreement, which will comprise the attached Specific Terms and the attached General Terms.

Executed as an agreement.

Signed for the Purchaser by:	**Signed** for and on behalf of the Supplier by:
Signature	Signature
_____	_____
Name and Position	Name and Position
In the presence of:	In the presence of:
_____	_____
Signature of Witness	Signature of Witness
_____	_____
Name of Witness	Name of Witness
_____	_____
Occupation of Witness	Occupation of Witness
_____	_____
Address of Witness	Address of Witness

Section B: General Terms

1. Appointment

Appointment non-exclusive

1.1. The appointment of the Supplier under this agreement is non-exclusive.

Term

1.2. This agreement will come into force on the Commencement Date and, subject to clause 1.3 and 1.4, will end on the Expiry Date unless terminated earlier in accordance with this agreement or at law.

1.3. Item 4 of the Specific Terms sets out the number of times the Purchaser may at its sole discretion, renew this agreement and the length of time of each renewal.

1.4. If the Purchaser wishes to exercise its right of renewal, it will give the Supplier written notice before the applicable Expiry Date. If the parties fail to formally renew this agreement but this agreement continues to be performed by the parties after the Expiry Date or any renewal period, this agreement is deemed to have been renewed on a month-to-month basis and either party may terminate this agreement on twenty (20) Business Days' notice. This agreement will be renewed or deemed renewed on the same terms and conditions.

Agreement to Apply

1.5. The terms set out in this agreement apply to the provision of all Services to the Purchaser by the Supplier and subject to clause 20.9 contain everything the parties have agreed in relation to the subject matter it deals with.

1.6. No party can rely on an earlier written document or anything said or done by or on behalf of another party before this agreement was executed and no other terms and conditions will apply (including the Supplier's purchase terms and conditions and any Contract Purchase Order issued by the Purchaser.

Sub-contracting

1.7. The Supplier must not appoint subcontractors to discharge any of the obligations of the Supplier under this agreement, except with the prior written approval of the Purchaser. The Supplier will remain responsible for all subcontracted functions, responsibilities and obligations and will be liable for the acts or omissions of any sub-contractor as if they were acts or omissions of the Supplier.

2. Conflict of Interest

2.1. The Supplier undertakes that it has disclosed to the Purchaser in writing any interest it has which may conflict with the interests of the Purchaser under this agreement or in any other material way.

2.2. The Supplier will immediately notify the Purchaser if any actual, potential or perceived conflict of interest arises and manage the conflict of interest in consultation with the Purchaser. If the Purchaser considers that the conflict is not being, or is unable to be, appropriately managed by the Supplier, then the Purchaser may immediately terminate this agreement by written notice to the Supplier.

3. Ordering of Goods

Contract Purchase Order

3.1. A Contract Purchase Order must be placed by the Purchaser for the Goods and must quote the Contract Reference.

3.2. The Supplier must not supply the Goods until a Contract Purchase Order and Contract Reference are provided.

3.3. The Contract Purchase Order is the primary reference for the Purchaser's accounting system processes. Other key reference numbers expressed on Contract Purchase Orders (e.g. account codes, departments, project numbers) link to management systems and are important to the Purchaser for the identification and control of expenditure.

3.4. On receipt of the Contract Purchase Order, the Supplier will promptly send to the Purchaser confirmation of receipt and confirmation of its acceptance of the Contract Purchase Order or otherwise. The Supplier will use best endeavours to accept the Contract Purchase Order and supply the Goods ordered by the Purchaser.

3.5. The Purchaser may withdraw or change the Contract Purchase Order (including changing the delivery location) at any time on reasonable notice to the Supplier.

4. Delivery

4.1. Where the Purchaser has not named a delivery location in the Contract

Purchase Order, the Supplier shall be responsible for contacting the Purchaser to obtain delivery instructions. In the event that the Supplier has been unable to contact the Purchaser, the Supplier will deliver the Goods to the delivery address set out in item 5 of the specific Terms.

4.2. If the Supplier delivers goods in excess of the amount specified in the Contract Purchase Order then the Purchaser will hold them at the Supplier's risk. The Purchaser accepts no responsibility for any Goods delivered to a place or at a time not specified in item 5 of the Specific Terms (as applicable) or any alternative delivery address specified by the Purchaser.

4.3. Partial deliveries may be accepted at the Purchaser's sole and absolute discretion.

4.4. The Supplier will be responsible for paying any costs relating to the packaging, transportation, insurance and handling of the Goods including any international duty or customs charges.

4.5. All Goods shall be delivered by the date specified in the Contract Purchase Order. If the Supplier is unable to deliver any of the Goods by that date, the parties will use their best endeavours to agree a new date for delivery of those Goods. However, the Purchaser is under no obligation to agree to a new date for delivery or to accept any Goods except on the delivery date specified in the relevant Contract Purchase Order.

4.6. All Goods must be adequately packaged to prevent deterioration or damage whilst in transit.

5. Identification

5.1. The Contract Purchase Order and Contract Reference must be shown on all packages, invoices and correspondence relating to the Goods. Goods supplied against an invalid Contract Purchase Order/ Contract Reference or without a Contract Purchase Order/ Contract Reference will be returned to the Supplier at the Supplier's expense including the cost of packaging, transportation, insurance and handling of the Goods.

5.2. Each consignment of Goods delivered shall be accompanied by a delivery note that details the description, quantity with the applicable units of measure, unit rates and dollar values of the Goods delivered.

6. Inspection and acceptance

6.1. The Supplier knowledges that the signing of a delivery note or similar on behalf of the Purchaser does not constitute acceptance of any Goods. The Purchaser will have ten (10) Business Days following receipt of the Goods to inspect the condition of the Goods. If the Purchaser does not notify the Supplier of its rejection of any Goods within that period, the Purchaser will be deemed to have accepted those Goods.

6.2. The Purchaser may reject any Goods, even after they have been accepted, that:

a) are of inferior quality;
b) are in an unsatisfactory condition or not functioning in the way they are designed to function; or
c) do not otherwise meet the requirements (including requirements relating to delivery) of this agreement.

6.3. For any such rejected Goods the Supplier will, within ten (10) Business Days of receiving notice of the Purchaser's rejection of the Goods, at the Purchaser's sole and absolute discretion and at the Supplier's sole risk and expense:

a) repair the Goods;
b) replace the Goods;
c) remove the Goods; and
d) reimburse the Purchaser in full for any amounts paid by the Purchaser in respect of the rejected Goods.

6.4. Not used

6.5. Risk in any returned Goods will pass back to the Supplier at the time the Goods are removed by or on behalf of the Supplier from the Purchaser. Title to the returned Goods will pass on either replacement of the Goods or refund of any amounts paid as specified in clause 6.3.

6.6. Clause 6.3 and 6.5 do not limit or negate any other rights or remedies that the Purchaser may have under this agreement or at law.

6.7. Notwithstanding that the Purchaser may be deemed to have accepted any Goods, any Goods that are surplus to the Purchaser's requirements and which the Purchaser in its sole an absolute discretion, deems to be in a re-saleable condition may be returned by the Purchaser to the Supplier within twenty (20) Business Days of delivery. The Supplier will accept the returned Goods and issue the Purchaser a credit note for any such

Goods if they were previously paid for by the Purchaser.

7. Title and Risk

7.1. Subject to the Purchaser's rights under clause 6, title to and risk in, any Goods supplied to the Purchaser will pass to the Purchaser upon delivery of the Goods.

7.2. The Supplier will insure the Goods during transportation for any damage or loss that occurs until risk in the Goods passes to the Purchaser.

8. Supplier's obligations

8.1. The Supplier will:

a) ensure that the Goods are of good and merchantable quality, meet the specifications required of the Goods, and free from defects and a fit for the purpose intended;

b) ensure that the Goods are free from any Security Interest;

c) ensure that the Goods are new and unused on delivery (unless agreed otherwise by the Purchaser);

d) ensure that the Goods comply with all Applicable Requirements and will not put the Purchaser in breach of any Applicable Requirements; and

e) have and comply with any health and safety standards, applicable environmental policies and any quality assurance system approved or required by the Purchaser.

9. Intellectual Property

9.1. The Purchaser acknowledges and agrees that it does not by this agreement, and will not otherwise have or acquire, any rights in any Intellectual Property owned or used by the Supplier in connection with the Goods.

10. Payment

General

10.1. The Purchaser will pay the Supplier for the Goods in accordance with item 7 of the Specific Terms.

10.2. The Supplier will invoice the Purchaser for the Goods supplied by the Supplier pursuant to this agreement. Each invoice must be a valid GST invoice, if GST is applicable, and shall be mailed by the Supplier and addressed to the address set out in item 1 of the Specific Terms.

10.3. Each invoice must specify:

a) the Goods supplied and the dates those Goods were delivered to the Purchaser;

b) the Contract Purchase Order in respect of the Goods covered by the invoice;

c) The amount payable by the Purchaser in respect of the invoice (calculated in accordance with item 7 of the Specific Terms);

d) such other information as the Purchaser may reasonably request from time to time; and

e) such information as required to be a valid tax invoice for GST purposes, if GST is applicable.

Payment of Invoices

10.4. Subject to clause 10.5 and any express contrary provision in item 7 of the Specific Terms, each invoice received by the Purchaser in relation to the Goods supplied by the Supplier pursuant to this agreement and which complies with clause 10.2 and 10.3 will be payable on the 20th day of the month following the month in which that invoice is received.

Disputed Invoices

10.5. If any item or part of item in an invoice submitted by the Supplier is contested by the Purchaser, then the Purchaser will give prompt notice of such dispute to the Supplier and will pay the undisputed portion of the invoice. The Purchaser has no obligation to pay any disputed part of the invoice unless the dispute has been resolved in accordance with the dispute resolution process set out in clause 17 and the Purchaser has agreed to pay such amount.

Right to set-off and deductions

10.6. The Purchaser may deduct from the amount payable under the invoice any amounts required to be deducted by law.

10.7. The Purchaser may set-off against or deduct from the amount payable under the invoice any amounts that are due to the Purchaser from the Supplier.

11. Warranties

General

11.1. The Supplier represents and warrants on a continuing basis that:
a) this agreement is valid, binding and enforceable;
b) it has taken all necessary action to authorise execution and performance of this agreement
c) no Insolvency Event has occurred in respect of it; and
d) no form of inducement or reward has been or will be directly or indirectly provided by the Supplier to any of the Purchaser's employees, agents, officers or representatives in connection with this agreement or the Goods.

Supply of Goods

11.2. The Supplier represents and warrants on a continuing basis that:
a) it has examined, and has informed and satisfied itself as to the correctness and sufficiency of, the prices set out in item 7 of the Specific Terms and that the prices cover the cost of complying with all the obligations of the Supplier under this agreement
b) it has all rights to supply the Goods and that it will pass free and clear title to the Goods to the Purchaser;
c) the supply, possession, use, modification and/or resale of such Goods will not breach the Intellectual Property or other rights of any third party;
d) the Goods will comply with the requirements of clause 8.1; and
e) the Goods will be delivered by the date specified in the Contract Purchase Order or, where no time specified, within a reasonable period of time of receiving the Contract Purchase Order.

11.3. The Supplier represents and warrants the items specified in item 9 of the Specific Terms. These representations and warranties do not limit the provisions of clause 11.2, 11.4, 11.5 11.6.

11.4. If not specified in item 10 of the Specific Terms, the Supplier's warranty and guarantees to the Purchaser for any Goods will be for the greater of 12 months or the warranty period generally available to the Supplier's customers who purchase the Goods.

11.5. Without limiting anything in this clause 11, the Supplier will pass on to the Purchaser the benefit of any warranty, maintenance obligation or guarantee received from any other person in respect of the Goods supplied

Information Accurate

11.6. The Supplier represents and warrants on a continuing basis that all information, presentations, warranties and undertakings made or given by it to the Purchaser (whether before or after the date of this agreement) are true, complete and accurate in all respects.

12. Other Obligations of Supplier

Health and Safety

12.1. When delivering Goods to the Purchaser's premises, the Supplier must comply with the Purchaser's health and safety procedures and all reasonable directions given by the Purchaser (to the extent to which such directions are not contrary to any express provision of this agreement).

Reporting

12.2. The Supplier must report to the Purchaser in accordance with any specified requirements set out in item 8 of the Specific Terms.

Records and information requests

12.3. The Supplier must keep full records and documentation in relation to the Goods and this agreement and comply with any directions, instructions or policies relating to records provided to the Supplier from the Purchaser. On request by the Purchaser, the Supplier must immediately provide all documents and records relating to the Goods and this agreement within the Supplier's possession or control to the Purchaser.

12.4. The Supplier agrees to immediately pass on any request for information that it receives (including those under the Local Government Official Information and Meetings Act 1987) to the Purchaser for instruction and/or action.

Audit

12.5. Where the Purchaser has a reasonable concern about the Supplier's financial viability or ability to supply the Goods on the terms of this agreement, the Purchaser may audit the Supplier upon giving ten

(10) Business Days' notice to the Supplier.

12.6. The parties agree to act reasonably for the purpose of clause 12.5 including promptly meeting to discuss in good faith the scope of, and procedure for, the audit. The Purchaser may require the Supplier to provide copies of relevant documentation, and may inspect the Supplier's premises and other property as required.

Recall

12.7. The Supplier will fully protect, indemnify and hold harmless the Purchaser, its officers, employees and agents from and against any liability, losses, damages, actions, proceedings, claims, demands, costs and expenses including solicitor and own client costs, incurred in connection with or as a consequence of any recall.

12.8. The Purchaser will provide all reasonable co-operation and assistance with any recall and assist the Supplier in all respects in undertaking such recall.

12.9. Where circumstances allow, the Supplier will, before taking any action to recall Goods, consult with the Purchaser regarding the recall.

13. Liaison with the Purchaser

Purchaser's Representative

13.1. All routine and day-to-day communications by the Supplier with the Purchaser will, subject to any express contrary provision in this agreement, be directed by the Supplier's Representative to the Purchaser's Representative at the address shown in item 1 of the Specific Terms.

13.2. The Supplier's Representative shall at any time reasonably requested by the Purchaser's Representative meet with the Purchaser's Representative to review the supply of Goods and any matters pertaining to the Goods and/or the manner in which the Supplier supplies the Goods.

14. Termination and Suspension

Immediate Termination by the Purchaser

14.1. The Purchaser may immediately terminate this agreement by written notice to the Supplier if any of the following occurs:

a) the Supplier commits a material breach of this agreement and fails to remedy that breach within fourteen (14) days following receipt of a written notice from the Purchaser specifying the breach and requiring it to be remedied

b) the Supplier suffers an Insolvency Event; or

c) the Supplier breaches clause 20.1 (requiring the Supplier to obtain the Purchaser's written consent prior to any assignment of this agreement).

Immediate termination by the Supplier

14.2. The Supplier may immediately terminate this agreement by written notice to the Purchaser if the Purchaser commits a material breach of this agreement, and fails to remedy such breach within fourteen (14) days following receipt of a written notice from the Supplier specifying the breach and requiring it to be remedied.

Cancellation of Contract Purchase Orders

14.3. If either party terminates this agreement, the Purchaser may cancel the Contract Purchase Order immediately by written notice to the Supplier. The Purchaser will not be liable to the Supplier in relation to the cancelled Contract Purchase Order.

Return of property and equipment and transition

14.4. On termination or expiry of this agreement, the Supplier must return to the Purchaser any property, including the Purchaser's Intellectual Property or equipment of the Purchaser which is in the Supplier's possession or control.

14.5. Where the Purchaser intends to appoint a replacement supplier, the Supplier will provide the Purchaser with reasonable assistance and information to assist the Purchaser to achieve a smooth and seamless transition to the replacement supplier.

Survival

14.6. On termination or expiry of this agreement, the provisions intended to survive termination (including clauses 9, 16 and 19 together with those other provisions of this agreement which are incidental to, and required to give effect to, those clauses) will remain in full force and effect.

No limitation

14.7. This clause 14 is in addition to, and does not limit, any other right or remedy either party may have arising from any breach of this agreement by the other.

15. Unforeseen circumstances

No liability

15.1. Subject to this clause 15, a party is not liable for any act, omission or failure under this agreement (except failure to meet an obligation to pay money) if that act, omission or failure arises directly from circumstances beyond the reasonable control of the party concerned, for example extreme weather, civil disruption or industry wide industrial action (**Force Majeure Event**).

Written Notice

15.2. A party seeking to rely on clause 15.1, must promptly give the other party written notice of the circumstances and the way in which and the extent to which performance of its obligations are prevented or impeded by the Force Majeure Event.

Mitigation

15.3. The party whose obligations are affected by the Force Majeure Event is to take all reasonable practicable steps to limit the effects of that event on the performance of its obligations under this agreement and is to continue to carry out its obligations under this agreement to the extent possible despite the Force Majeure Event.

16. Indemnity and Limitations of Liability

Indemnity

16.1. Subject to this clause 16, the Supplier indemnifies the Purchaser, its employees, agents and officers against all claims, demands, actions, proceedings, costs (including solicitor and own client costs), losses, expenses and damages which are made or brought against any of the indemnified parties or incurred or suffered by those parties in connection with the Supplier's breach of this agreement or other negligent act or omission.

16.2. Without limiting clauses 16.1 or 16.3, the Supplier indemnifies the Purchaser, its employees, agents and officers against all claims, demands, actions, proceedings, costs (including solicitor and own client costs), losses expenses and damages, which are made or brought against any of the indemnified parties or incurred or suffered by those parties, directly in connection with the deduction or payment of tax in connection with payments made by the Purchaser to the Supplier under this agreement. The Purchaser will be entitled to offset any such claim from any payments to the Supplier in the event that the Purchaser is assessed for any such tax.

16.3. Nothing in this agreement limits the Purchaser's rights against the Supplier at common law or equity or under the provisions of the Contractual Remedies Act 1979.

16.4. Clauses 12.7, 16.1, and 16.2 are intended to confer a benefit on each of the persons described therein and to create an obligation enforceable at the suit of such party.

16.5. The indemnity referred to in clause 16.1 will not apply to the extent that the Supplier's performance has been prevented by a failure on the Purchaser's part to perform a material obligation under this agreement.

Limitation of Liability

16.6. The maximum aggregate amount payable, whether in contract, tort or otherwise, in relation to claims, damages, liabilities, losses or expenses, is as specified in item 12 of the Specific Terms.

Insurance

16.7. The Supplier must effect and maintain public/product liability insurance for not less than the amount referred to in item 13 of the Specific Terms. Such insurance must:

a) be on terms and with insurers reasonably acceptable to the Purchaser; and
b) provide cover for the vicarious liability of the Purchaser

16.8. The Supplier will provide the Purchaser with certificates showing that the insurance set out in clause 16.7 is current, at the time of execution of this agreement and on each anniversary of the Commencement Date.

16.9. The Supplier will ensure that where any subcontractors are approved under this agreement they have insurance in place which is acceptable to the Purchaser (acting reasonably).

17. Dispute Resolution

Precondition to court proceedings

17.1. If a dispute arises under this agreement, neither party may commence any court proceedings relating to the dispute unless it has first complied with the clause 17. However, nothing in this clause 17 restricts or limits the right of either party to obtain urgent injunctive relief or to terminate this agreement where this agreement provides such a right.

Representatives to attempt to resolve dispute

17.2. If a dispute arises under this agreement, either party may, at any time, give written notice (Dispute Notice) to the other:
a) specifying the nature of the dispute and the position which that party believes to be correct; and
b) requesting a meeting take place to attempt to resolve the dispute

17.3. The parties' Representatives must meet within five (5) Business Days of the receipt of the Dispute Notice and endeavour to resolve the dispute.

Senior officers to attempt to resolve dispute

17.4. If the dispute is not resolved within ten (10) Business Days of a party's receipt of a Dispute Notice, the dispute must be referred to senior officers of the parties, who must meet and endeavour to resolve the dispute.

Mediation

17.5. If the dispute remains unsolved for a further period of five (5) Business Days after the dispute has been referred to the senior officers of the parties, either party may by written notice require that the dispute be submitted for mediation by a single mediator agreed by the parties or, if no agreement can be reached within two (2) Business Days of such notice, by a mediator nominated by the President of the New Zealand Law Society.

17.6. The mediator will determine the procedure and timetable for the mediation. The costs of the mediation will be shared equally by the parties.

17.7. If within two (2) Business Days following the mediation, the dispute remains unresolved, either party may pursue its legal rights (including commencing any court proceedings).

17.8. All proceedings and disclosures in the course of the mediation will be conducted and made without prejudice to the rights and position of the parties in any subsequent legal proceedings.

Supplier to Continue

17.9. If there is a dispute:
a) the Supplier must continue to supply any Goods ordered, unless otherwise directed by the Purchaser; and
b) if the Supplier continues to supply Goods, the Purchaser must pay the Supplier in accordance with the provisions of this agreement, other than any part of an invoice referable to the dispute.

18. Notices

Giving Notices

18.1. Any notice or communication given to a party under this agreement is only given if it is in writing and sent in one of the following ways:
a) delivered or posted to that party at its address and marked for the attention of the relevant department or officer (if any) set out in item 1 of the Specific Terms: or
b) faxed to that party at it fax number and marked for the attention of the relevant department or officer (if any) set out in item 1 of the Specific Terms.

Change of address or fax number

18.2. If a party gives the other party three (3) Business Days' notice of a change of its address or fax number, any notice or communication is only given by that other party if it is delivered, posted or faxed to the latest address or fax number.

Time notice is given

18.3. Any notice or communication is to be treated as given at the following time:
a) if it is delivered, when it is left at the relevant address;
b) if it is sent by post, two (or, in the case of a notice or communication posted to another country, five) Business Days after it is posted; or
c) if it is sent by fax, as soon as the sender receives from the sender's fax machine a report of an error free transmission to the correct fax number.

18.4. However, if any notice or communication is given on a day that is not a Business Day, or after 5pm

on a Business Day, to the place of the party to whom it is sent, it is to be treated as having been given at the beginning of the next Business Day.

18.5. Section 11 of the Electronic Transactions Act 2002 does not apply in respect of any notice given by facsimile is provided for in this agreement.

19. Confidentiality

Obligations of confidence

19.1. Where the Supplier receives, or has received whether before or after the date of this agreement, Confidential Information from the Purchaser, the Supplier must:

a) keep the Confidential Information confidential;
b) not use, disclose or reproduce the Confidential Information for any purpose other than the purposes of this agreement;
c) not, without the Purchaser's prior written consent, disclose Confidential Information to any person other than its employees, subcontractors, agents, officers and Representatives who need the information for the purposes of this agreement; and
d) establish and maintain effective security measures to safeguard the Confidential Information from unauthorised access, use, copying or disclosure.

Further permitted use and disclosure

19.2. Notwithstanding clause 19.1, the Supplier may use or disclose Confidential Information to the extent necessary to:

a) comply with any law, binding directive of a regulator or a court order;
b) comply with the listing rules of any stock exchange on which its securities are listed;
c) obtain professional advice in relation to matters arising under or in connection with this agreement; or
d) enforce the other party's obligations under this agreement.

20. General

Assignments and Transfers

20.1. The Supplier must not assign or transfer any of its rights or obligations under this agreement without the prior written consent of the Purchaser (not to be unreasonably withheld).

20.2. It will be deemed to be an assignment under clause 20.1 where the Supplier is a limited liability company, if;

a) the legal or beneficial ownership of 30% or more of the shares of the Supplier changes (having regard to the shareholding in the Supplier at the date of this agreement); or
b) effective control of the Supplier changes or passes, by transfer or issue of shares or amendment of constitution or in any other way, to a person not having effective control of the Supplier at the date of this agreement.

Further acts

20.3. Each party must at its own expense promptly execute all documents and do or use reasonable endeavours to cause a third party to do all things that another party from time to time may reasonably request in order to give effect to, perfect all complete this agreement and all transactions incidental to it.

Governing law and jurisdiction

20.4. This agreement is governed by the law of New Zealand. The parties submit to the non-exclusive jurisdiction of its courts and courts of appeal from them. The parties will not object to the exercise of jurisdiction by those courts on any basis.

Joint and individual liability and benefits

20.5. Except is otherwise set out in this agreement, any agreement, covenant, representation or warranty under this agreement by two or more persons binds them jointly and each of them individually, and any benefit in favour of two or more persons is for the benefit of them jointly and each of them individually.

Public communication

20.6. The Supplier must consider any potential media issues which may arise in relation to the supply of the Goods or this agreement, and provide the Purchaser with reasonable notice of any potential media issues.

20.7. The Supplier shall not make or be involved in any way in making any public communication in respect of this agreement or the Goods at any time to any third party (including to any section of the media) without the prior written approval of the

Purchaser which may be withheld at the Purchaser's sole and absolute discretion.

Severability

20.8. Each provision of this agreement is individually severable. If any provision is or becomes illegal, unenforceable or invalid in any jurisdiction it is to be treated as being severed from this agreement in the relevant jurisdiction, but the rest of this agreement will not be affected. The legality, validity and enforceability of provision in any other jurisdiction will not be affected.

Tax residency

20.9. Subject to any written notice to the contrary provided to the Purchaser prior to the date of this agreement, the Supplier warrants that it is a New Zealand tax resident.

Regulatory capacity

20.10. The parties acknowledge that to the extent that the Purchaser has regulatory authority or powers ("regulatory capacity"), this agreement does not bind or fetter the Purchaser.

20.11. The Purchaser acting in that capacity, is not bound to grant any consent or permission which the Purchaser or the Supplier or anyone else needs to give effect to this agreement.

20.12. The Supplier will not be entitled to any damages or other payment should the Purchaser acting in its regulatory capacity, either decline any consent or permission, or issue that consent or permission on terms that are unsatisfactory to any party.

20.13. Not used

Variation

20.14. No variation of this agreement will be of any force or effect unless it is in writing and signed by each party to this agreement.

Waivers

20.15. A waiver of any right, power or remedy under this agreement must be in writing signed by the party granting it. A waiver is only effective in relation to the particular obligation or breach in respect of which it is given. It is not to be taken as an implied waiver of any other obligation or breach, or as an implied waiver of that obligation or breach in relation to any other occasion.

20.16. The fact that a party fails to do, or delays in doing, something that the party is entitled to do under this agreement does not amount to a waiver.

Non-Merger

20.17. The warranties, undertakings, obligations and indemnities given under this agreement will not merge or be treated as discharged on delivery, but will remain enforceable to the fullest extent, despite any rule of law to the contrary.

Counterparts

20.18. This agreement may be executed in any number of counterparts each of which will be deemed an original and all of which together will constitute a single instrument. Either party may enter into this agreement by signing any counterpart.

20.19. Any copy of this agreement that is received by facsimile or via email in PDF or other document reproduction format (including any copy of any document evidencing a party's signature to this agreement) may be relied on by any party as though it were an original copy of this agreement. This agreement maybe entered into on the basis of an exchange of facsimile, PDF or other document reproduction format.

21. Definitions and Interpretation

Definitions

21.1. In this agreement, unless the context otherwise requires, the following definitions apply:

Applicable Requirements means all statutes, regulations, bylaws, statutory instruments, delegated or subordinated legislation and codes of practice that are applicable to the provision of the Goods, the performance by the Supplier of its obligations under this agreement or otherwise applicable to the Supplier (including the requirements set out in item 11 of the Specific Terms).

Business day means a day on which registered banks are normally open for business in Wellington excluding Saturdays and Sundays.

Confidential Information means all confidential information relating to the Purchaser or the Goods which is or has been disclosed or communicated to the Supplier by or on behalf of the Purchaser.

Commencement Date means the commencement date set out in item 3 of the Specific Terms.

Contract Reference means the contract reference of this agreement.

Purchaser's Representative means the person named in item 2 of the Specific Terms or such other person as the Purchaser may nominate in place of that person from time to time. Contact details for the initial Purchaser's Representative are set out in item 2 of the Specific Terms.

Force Majeure Event has the meaning set out in clause 15.1.

Expiry date means the initial expiry date set out in item 3 of the Specific Terms or, if the agreement is renewed in accordance with clause 1.3 or 1.4, the last day of the final review period.

Goods means the goods set out in item 6 of the Specific Terms.

GST means goods and services tax in terms of the GST act, at the rate prevailing from time to time.

GST Act means the Goods and Services Tax Act 1985.

Incoterms 2000 means the International Chamber of Commerce Official Rules for the interpretation of trade terms dated 1 January 2000 as amended from time to time.

Insolvency Event means anything that reasonably indicates that there is a significant risk that the Supplier is or will become unable to pay its debts as they fall due, including:

a) a step being taken to make the Supplier bankrupt, wind the Supplier up or have a receiver, receiver and manager, administrator, liquidator or statutory manager appointed to the Supplier or any of its assets or such an appointment taking place;
b) an order being presented for the sequestration of the Supplier's estate; or
c) a meeting of the Supplier's creditors being called or held or the Supplier entering into any type of arrangement with, or assignment for the benefit of all or any of its creditors including any formal arrangement or compromise under the Companies Act 1993 (or any similar legislation).

Intellectual Property means all and any patents, patent applications, trademarks, service marks, tradenames, registered designs, unregistered design rights, copyrights, know-how, trade secrets, domain names, internet addresses, rights in confidential information, and all and any other intellectual property, whether registered or unregistered, and including all applications and rights to apply for any of the same.

Contract Purchase Order means an order issued by the Purchaser that contains relevant details of the Goods being ordered, which may include:

a) the quantity of Goods required;
b) the price of the Goods;
c) the date the Goods are to be delivered;
d) any particular specifications relating to the Goods;
e) the delivery location and any special instructions relating to delivery of the Goods; and
f) The Contract Reference.

Security Interest has the meaning set out in the Personal Property Securities Act 1999.

Supplier's Representative means the person named in item 2 of the Specific Terms or such other person as the Supplier may nominate in place of that person from time to time. Contact details for the initial Supplier's Representative are set out in item 2 of the Specific Terms.

Interpretation

21.2. In this agreement:

a) all monetary amounts are stated exclusive of GST and in New Zealand dollars unless provided otherwise. GST is payable at the same time and in the same manner as is any other amount payable under this agreement, where that amount is subject to GST under the GST Act;
b) where the context permits, the singular includes the plural and vice versa;
c) Not used
d) references to any "party" means a party to this agreement and include their respective successors and permitted assignees (as the case may be);
e) references to clauses and schedules are to clauses in, and the schedules to this agreement (only stated otherwise);

f) where the context permits, references to the Supplier include (where the Supplier is not an individual) the Supplier's employees, agents and officers;
g) all references to legislation include all subordinate legislation, any re-enactment of or amendment to that legislation and all legislation passed in substitution for that legislation;
h) references to a "person" include a natural person, firm, corporation, association or other entity, whether incorporated or not and whether or not having a separate legal personality;
i) "including" and similar words do not imply any limitation; and
j) "good faith" shall not prevent a party from acting in its commercial self-interest.
k) Unless stated otherwise, in the event of inconsistency between parts of this document, the order of precedence of the following documents shall apply with each section higher in the list taking precedence over those below:
    a) The Contract Signing Page
    b) The letter of award of Contract
    c) Any attached documents relating to the procurement negotiation Agreed Terms
    d) These Specific Terms [of Contract] – Section C
    e) The General Terms [of Contract] – Section B
    f) The LED Luminaire Specification – as per Supplier's quote
    g) Any other attached documents

Absolutely POSITIVELY Wellington
Me Heke ki Pōneke Wellington City Council

Notice to Tenderer

Refers to

Document:	Transport and Infrastructure Accelerated Rollout of Street Lighting LEDs and CMS

Issued

To:	All 114.066-69 ROI recipients/respondents
By:	[redacted]
Date:	15 August 2017
Notice Number:	NTT1

Details

Topic	Document Reference	Clarification	Reason
Spigot Adapters – P and V category roads (excluding pedestrian crossings)	Vol 4 Section 6, Technical Specifications	The luminaire selected for the P and V category roads (excluding pedestrian crossings) is the NXT. This luminaire has a maximum internal tilt adjustment of ± 5°. To access this adjustment on site would require the LED to be opened on site, which is something we wish to avoid. Many of the Council's outreach arms have an outreach angle of up to 15°. As the specifications require the final tilt to be zero, contractors will be required to supply either a range of angle adaptors in a range of diameters to suit the various outreach arms, or a universal external adapter that can addresses these variables. The NXT provides internal clamps for 2 ranges of outreach arm diameters – 32-50mm and 42-60mm (OD). The 3 common outreach arm nominal diameters are 25mm, 32mm and 42mm (OD). There are no records of outreach arm diameters or angles in the Council's database so each needs to be assessed/ measured during the assessment stage. The supplier of the P and V luminaires is Energy Light [redacted]	Confirmation of spigot adapters sizes P and V category roads
Spigot Adapters - pedestrian	Vol 4 Section 6, Technical	The luminaire selected for pedestrian crossings is the TECEO 1. This luminaire	Confirmation of spigot adapters

Topic	Document Reference	Clarification	Reason
crossings	Specifications	has a universal mounting piece that can accommodate the full range of outreach arm angles. It also provides for 2 ranges of outreach arm diameters – 32-48mm and 42-60mm, plus 76mm (OD). For this luminaire, there should be no need for additional adaptors.	pedestrian crossings
Wellington Electricity Requirements	Vol 4 Section 6, Technical Specifications	Wellington Electricity has advised that installers have two competency options for live work within the 150mm minimum approach distance of the low voltage overhead network: 1. WTC2A (Line Mechanic), or 2. WTC7B provided the additional requirements set out in rules 3.307 and 3.717 of SM-EI are also complied with. Any work on or near low voltage conductors including the neutral and streetlight conductor shall require Installers to hold at least one of the above competencies and be conversant with any industry changes that may have occurred since their last competency refresher. As part of the minor works management system all contractors shall have systematic processes and work instructions in place to ensure that all risks are appropriately identified, controlled and managed on the work site. The preferred competency is WTC2A. Work methodologies proposed to be undertaken on Wellington Electricity's overhead network must be prepared in consultation with Wellington Electricity Network Operations team. If the agreed work methodology cannot be achieved at any time then work must cease.	Clarification of WE* requirements
Insulation Piercing Connectors (IPC)	Vol 4 Section 6, Technical Specifications	Wellington Electricity has been provided with information, and samples, on a number of alternative IPCs. It is currently assessing these, and in due course will advise of its acceptance or otherwise. It has also been asked to clarify whether the overhead 2.5mm NS cable should be single core or	Clarification of WE* requirements

Topic	Document Reference	Clarification	Reason
		double core.	
Connecting to underground network supply	Vol 4 Section 6, Technical Specifications	There should be no need to work on Wellington Electricity's phase and neutral connections (Refer Attachment 2: Connection and Schematic Diagram – WE Electricity Standard – Street Lighting Installation Requirements). The phase feed to the LED can connect to the load side of the fuse, while the existing lamp's neutral cable can be cut (where it - and the fuse - are accessible), and the LED's new neutral cable can be joined to it. See attached marked up extract from WE* Attachment 2.	Clarification of WE* connection requirements
On site GPS location shows on Tablet	Vol 4 Section 6, Technical Specifications	The Laptop tablets the Council will provide the Installers for use on the contract will show the user's current location as a dot on screen. When standing next to a pole for example, Assessors will be able to see on screen which pole/light they are adjacent to.	Request for GPS dongle.
Assessment measurements	Vol 4 Section 6, Technical Specifications	The requirement to measure boundary to boundary has been removed. Where existing lighting is staggered along both sides of the road, the nearest lights (left and right) may be on the opposite side of the road. Please measure the staggered distance between poles (however, if 2 poles are opposite each other, we need the distance to the staggered left and right poles, not the distance to the pole immediately opposite). This will be further clarified during assessor training.	Requirement to measure road corridor /road reserve width has been deleted. Clarification on distances to be measured when poles on both sides of the road.
Shorting Caps	Vol 4 Section 6, Technical Specifications	Should the supplier of the LEDs supply luminaires with a plastic protective covering on the NEMA socket, there will be no need for shorting caps. The plastic protective covering shall not be removed until the light point controller is fitted on site.	Supplied LEDs for streetlights – if complete with protective covering over NEMA socket, removes need for shorting caps
Pedestrian Crossing Lights	Vol 4 Section 6, Technical Specifications	The pedestrian crossing lights will be Betacom Teceo1 (5144 where the crossing is on the left hand side of the LED, being the majority of cases, and 5145 where the crossing is on the right hand side of the LED, being the minority of cases).	Supplied LEDs for pedestrian crossings

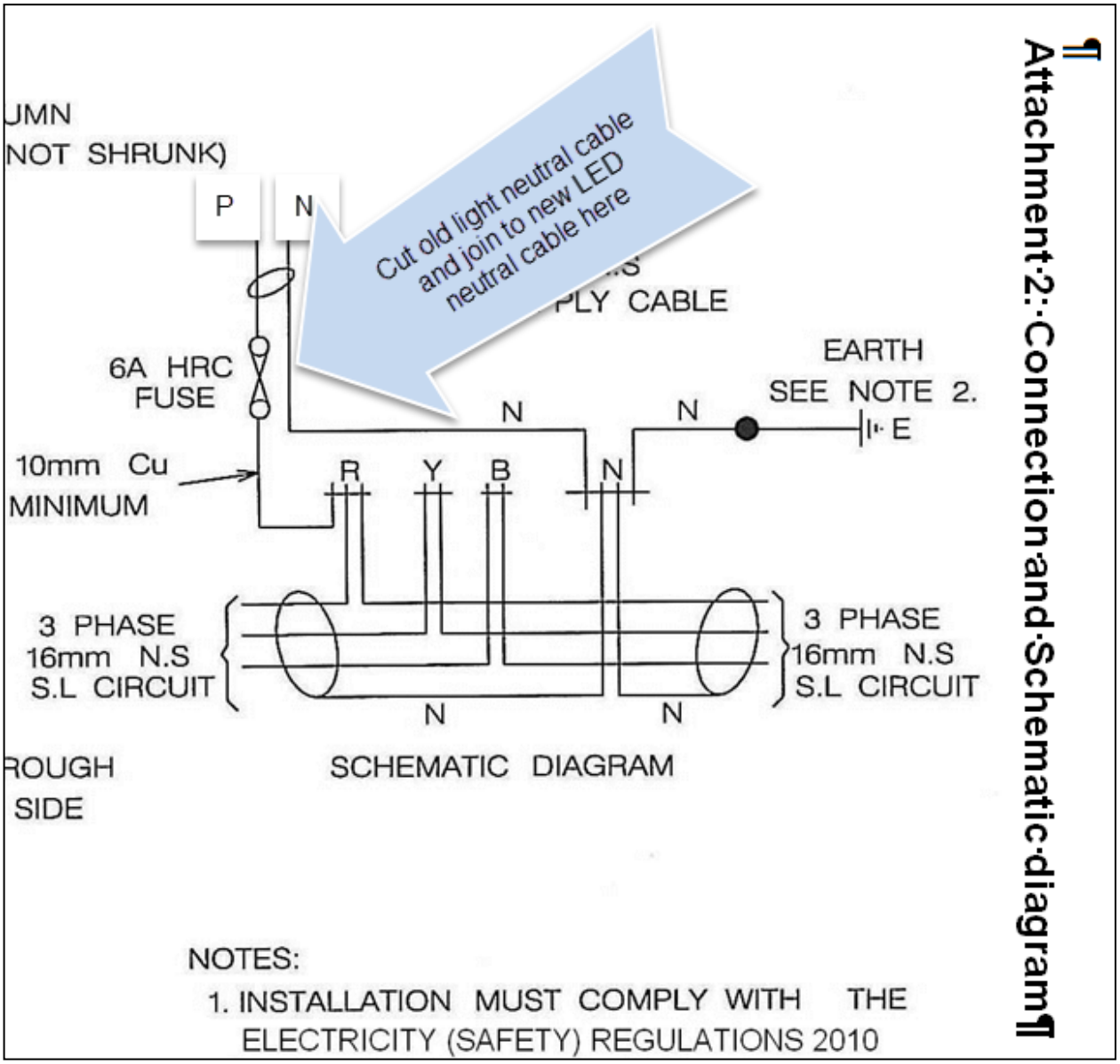
Authorisation

[redacted]

[redacted]
Council's Representative

Attachment

¶
Attachment 2: Connection and Schematic diagram¶



CONSULTING ENGINEERS

Our ref : 170645

16 January 2018

GESS Ltd
12 Offenhauser Dr
East Tamaki
Attn: [redacted]

Dear [redacted]

RE : STRUCTURAL VALIDATION OF LUMINAIRE ADAPTERS FOR STREETLIGHT COLUMNS IN WELLINGTON REGION

This letter summarises the ACH involvement in the structural validation of the luminaire adapters to be mounted on streetlight columns in the Wellington region.

Following your request ACH have compiled the load testing procedure (static and fatigue) to prove the structural adequacy of the adapters based on the current New Zealand and Australian design standards interpreted using principles of structural engineering. The details of the design methodology adopted by ACH are included in the attached calculation pages.

The load testing was carried out in December 2017 at the GESS workshop, with ACH in attendance. The load test results, as appended, have satisfied the requirements in the testing procedure (both static and fatigue).

Based on the above it is our professional opinion that the adaptors materially identical with the tested items are structurally adequate to support the following luminaires mounted on typical streetlight columns in the Wellington region:

1. NTX-M (11.8kg weight, 0.084m2 sail area)
2. Italo 1 (6.8kg weight, 0.050m2 sail area)
3. Italo 2 (12kg weight, 0.080m2 sail area)
4. Italo 2 Urban (12kg weight, 0.06m2 sail area)
5. LEDway (10.9kg weight, 0.102m2 sail area)
6. Philips Roadstar GPLS (9.1kg weight, 0.071m2 sail area)
7. Schreder Teceo 1 (9.6kg weight, 0.060m2 sail area)
8. Orange Tek Arialed (10.7kg weight, 0.060m2 sail area)

Other luminaires, similar in terms of weight and sail area, can also be considered adequate subject to the review of the luminaire data sheets by ACH.

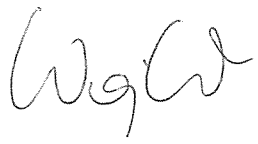
Durability assessment was outside the ACH scope of engagement but the aluminium alloy used in the tested castings (equivalent to ASTM B179-06, A413.1) has a copper content of under 0.3% and so complies with the TDM Appendix B2 “LED Road Lighting Luminaire Assessment Checklist” document dated 12/01/2017.

We trust that the above is satisfactory for your needs. Should you have any queries or require further information please do not hesitate to contact the undersigned at this office.

I:\170600 - 170699\170645\Word\Reports\170645 certification letter 16-1-18.doc

PO Box 84287, Westgate, Auckland 0657
3 Kawakawa Place, Westgate, Auckland 0814
P. 09 839 7050 | E. info@achconsulting.co.nz | W. www.achconsulting.co.nz

Yours faithfully



[redacted] ME MIPENZ CPEng
Senior Engineer

IPENZ ENGINEERS NEW ZEALAND | NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED | ACENZ

Building Code Clause(s) B1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.ipenz.nz)

ISSUED BY: ACH CONSULTING LTD
(Design Firm)

TO: GESS LTD
(Owner/Developer)

TO BE SUPPLIED TO: VARIOUS COUNCILS IN NEW ZEALAND
(Building Consent Authority)

IN RESPECT OF: CAST ALUMINIUM ADAPTORS FOR LUMINAIRES MOUNTED ON STREETLIGHT
(Description of Building Work)

AT: VARIOUS LOCATIONS IN THE WELLINGTON WIND REGION
(Address)

Town/City:..... **LOT**..... **DP**..... **SO**.....
(Address)

We have been engaged by the owner/developer referred to above to provide:

STRUCTURAL DESIGN

(Extent of Engagement)

services in respect of the requirements of Clause(s) B1 of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment VM1/AS1 or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule.....

The proposed building work covered by this producer statement is described on the drawings titled:

REFER PAGES 3 AND 4 OF ACH CALCULATIONS and numbered .....;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions A413.1 ALLOY OR EQUIVALENT
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☒ as per agreement with owner/developer (Architectural)

I, [redacted] am: ☒ CPEng [redacted] # ☐ Reg Arch ..... #
(Name of Design Professional)

I am a Member of: ☒ IPENZ ☐ NZIA and hold the following qualifications: ME
The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.
The Design Firm is a member of ACENZ: ☐

SIGNED BY [redacted] (Signature) [redacted]
(Name of Design Professional)

ON BEHALF OF ACH CONSULTING LTD Date 16/01/2018
(Design Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

ach
CONSULTING ENGINEERS

3 Kawakawa Place, Westgate 0814
PO Box 84287, Westgate 0657

P. 09 839 7050

info@achconsulting.co.nz
www.achconsulting.co.nz

For LUMINAIRE	Page 1
At ADAPTORS FOR STREETLIGHT COLUMNS	
Job no. 170645	Date 9/1/18	By VW

BRIEF

ACH have been commissioned by GESS to carry out load testing required to prove structural adequacy of luminaire adaptors for streetlight columns. Design parameters specified by GESS, testing methodology generated by ACH, load testing carried out by GESS with ACH in intermittent attendance. Durability assessment not in ACH scope but aluminium alloy used (A413.1 equivalent) complies with TDM-SL-04 Appendix B2 "LED Luminaire Assessment Checklist" V.11 12/1/2017

ach
CONSULTING ENGINEERS

3 Kawakawa Place, Westgate 0814
PO Box 84287, Westgate 0657

P. 09 839 7050

info@achconsulting.co.nz
www.achconsulting.co.nz

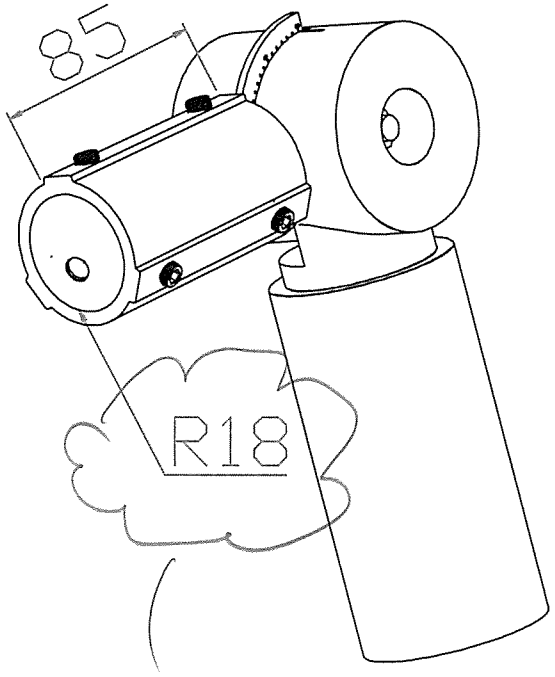
For	Page 2
At	
Job no. 170645	Date / By

DESIGN PARAMETERS

Adaptors to be used on typical 12.5m streetlight columns in the Wellington region. Allow for TC2 and $M_t = 1.0$. Testing aiming to validate adaptors supporting NTX-M or similar LED luminaires from the M30 Accepted Luminaires table. Two types of adaptors tested:

- 60mm / 42mm transition
- 60mm / 34mm transition

The load tested adaptors are aluminium alloy castings with Cu content < 0.3% (equivalent to ASTM B179-06, A413.1). Durability assessment by others.



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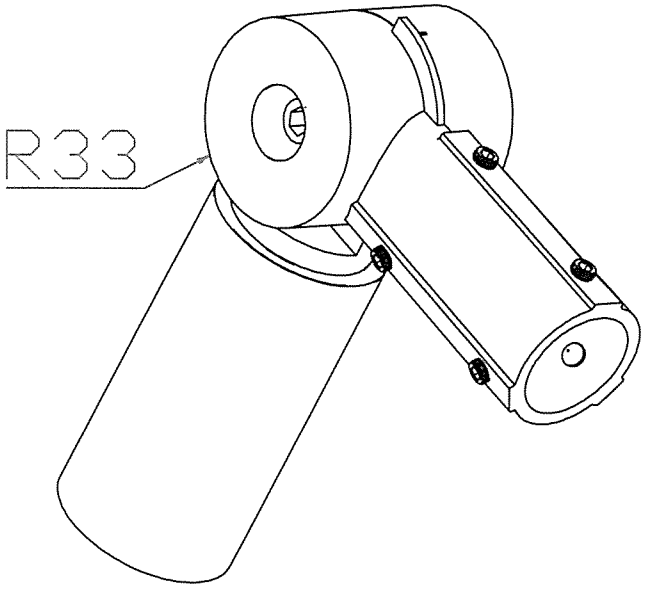
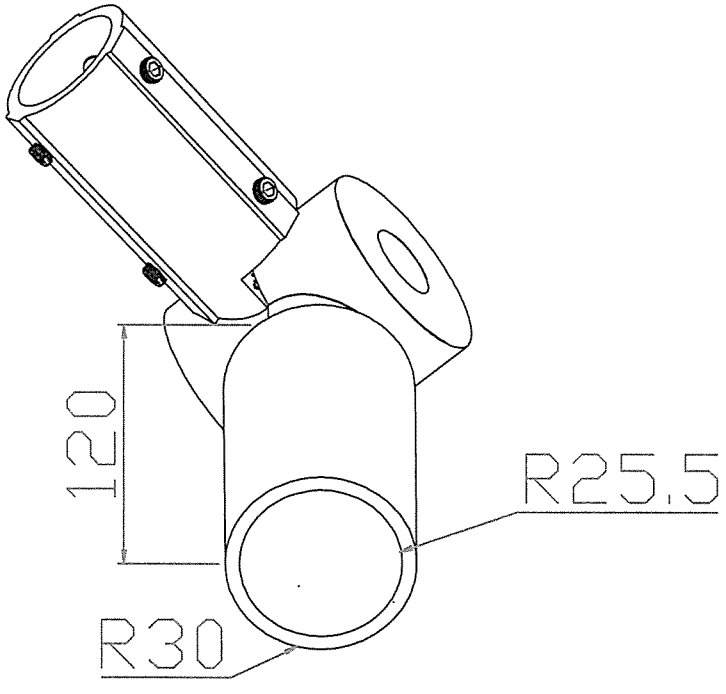
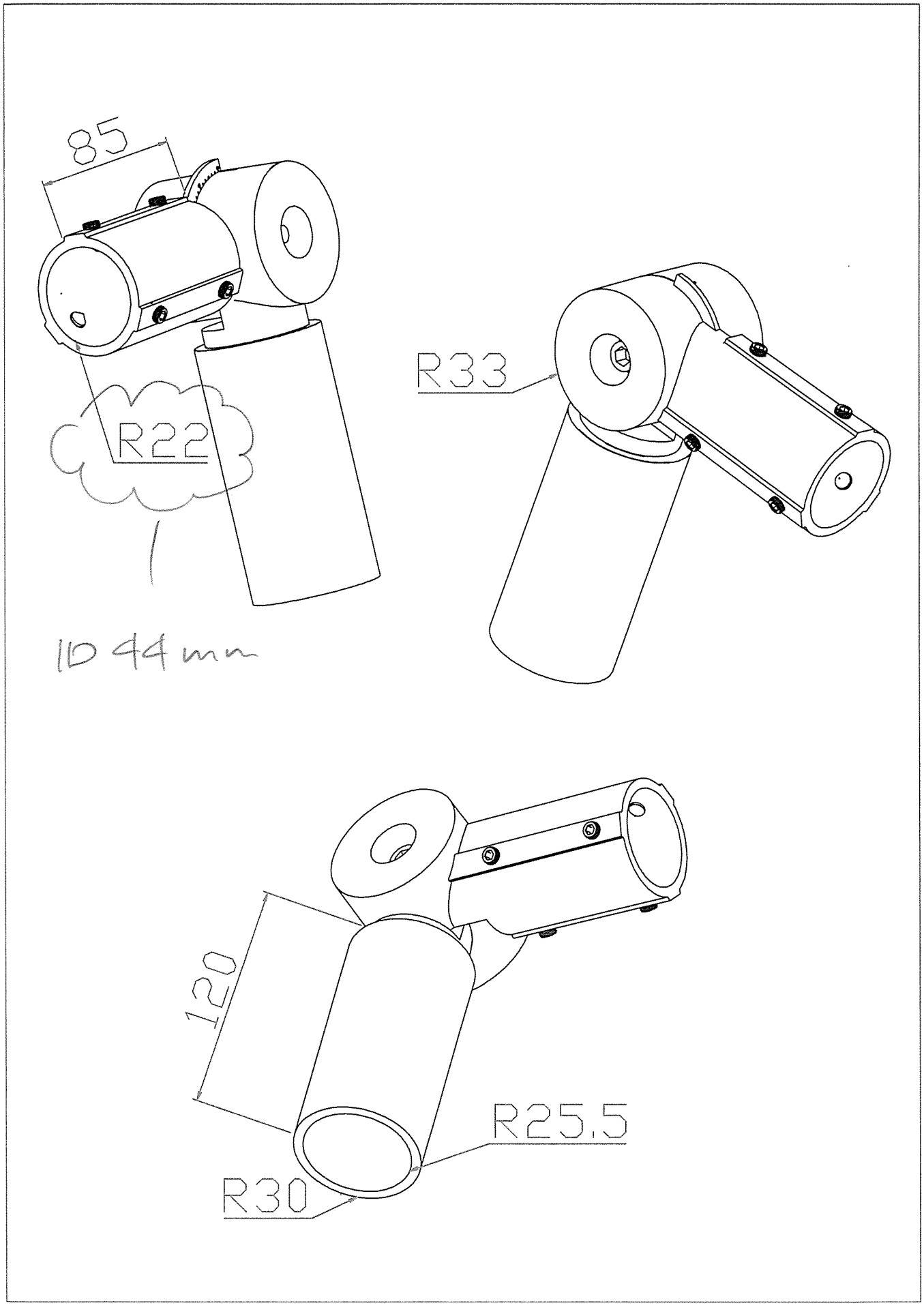




ACH pg4



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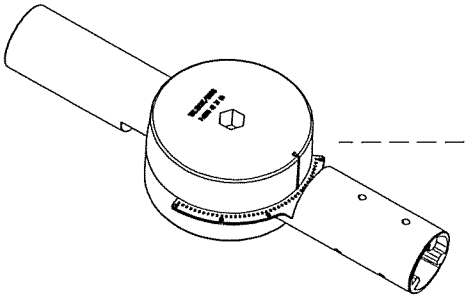
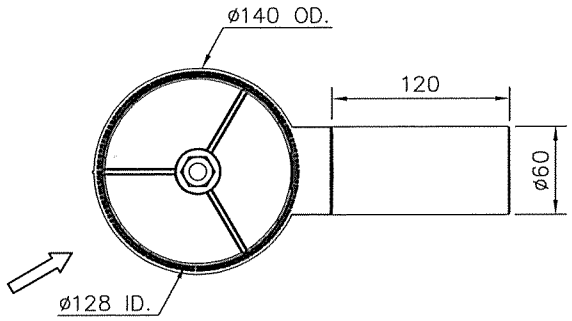
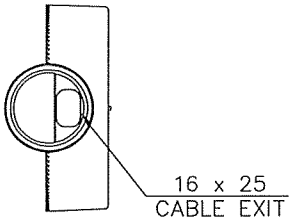
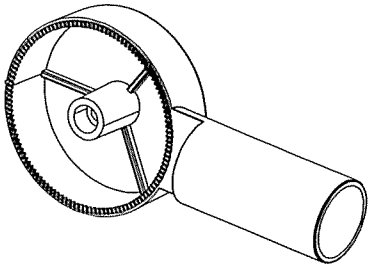
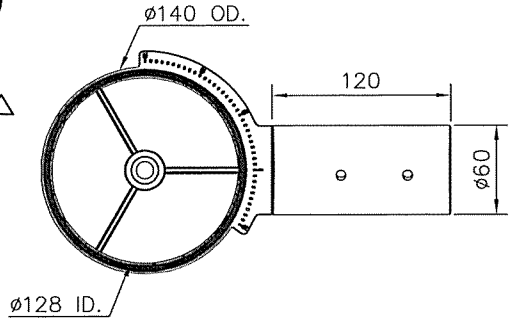
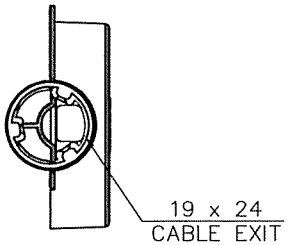


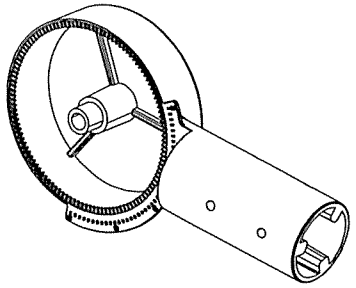












ADAPTOR 42-60
SIMILAR

gess
Columns & Streetlights
valmont

Gess Ltd.
12 Offenhauser Drive, East Tamaki, Auckland, 2013
P: 0800 43 77 00 | Web: www.gess.co.nz

DWG SIZE A4H CLASS CODE IA

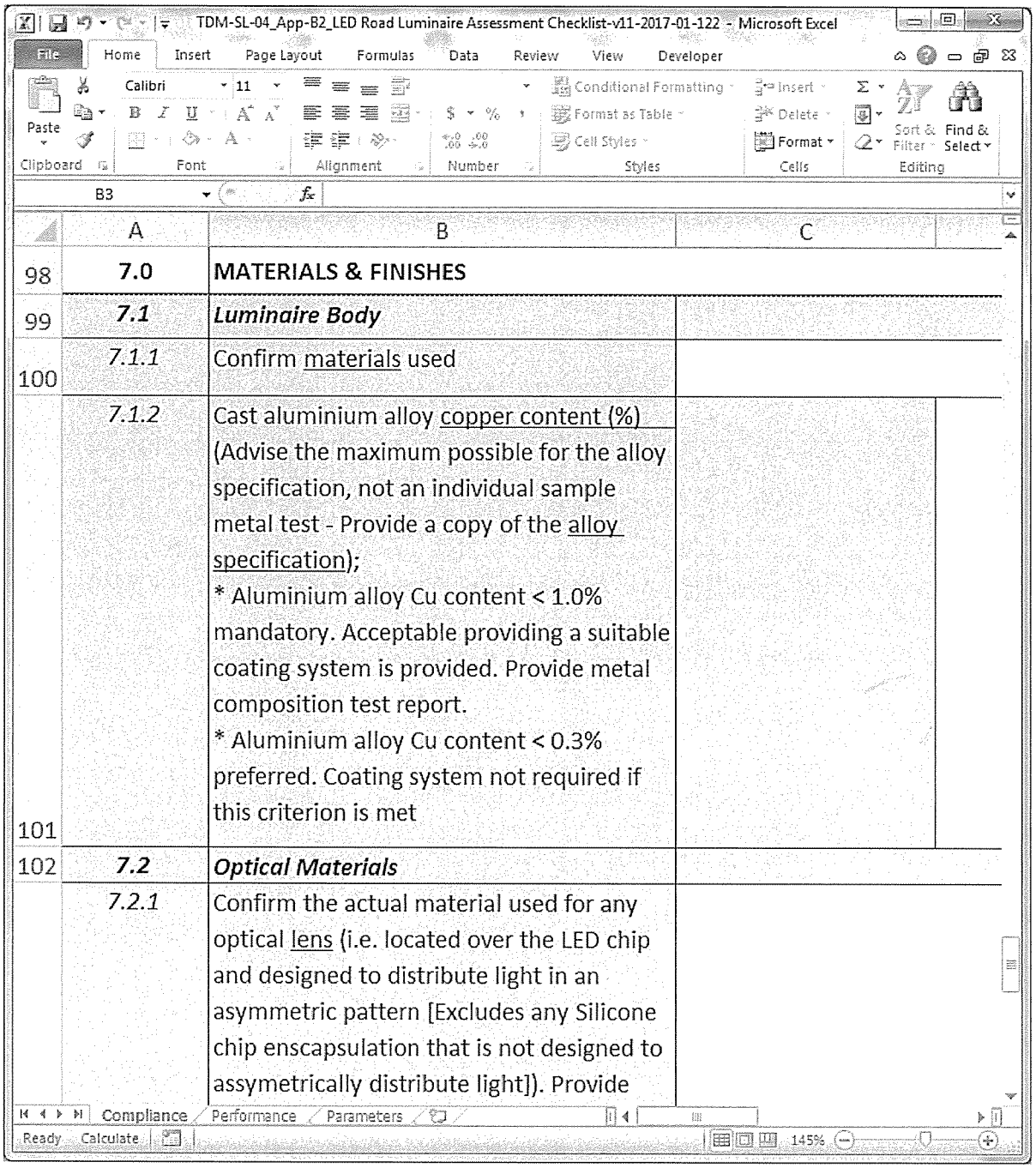
CUSTOMER

DESCRIPTION ADAPTOR 34–60

			DRAWN	CQ2 2017-10-18	MATERIAL	ORDER NO	
			ENGR	CQ2 2017-10-18	THK(mm)	SCALE	N
			CHECKED		WT(kg)		
REV ID.	DATE	REVISION DESCRIPTION	SPECIFICATIONS			P/N :	

ACR 405

ACH pg6



	A	B	C
98	**7.0**	**MATERIALS & FINISHES**	
99	***7.1***	***Luminaire Body***	
100	*7.1.1*	Confirm materials used	
101	*7.1.2*	Cast aluminium alloy copper content (%) (Advise the maximum possible for the alloy specification, not an individual sample metal test - Provide a copy of the alloy specification); * Aluminium alloy Cu content < 1.0% mandatory. Acceptable providing a suitable coating system is provided. Provide metal composition test report. * Aluminium alloy Cu content < 0.3% preferred. Coating system not required if this criterion is met	
102	***7.2***	***Optical Materials***	
	7.2.1	Confirm the actual material used for any optical lens (i.e. located over the LED chip and designed to distribute light in an asymmetric pattern [Excludes any Silicone chip enscapsulation that is not designed to assymetrically distribute light]). Provide	

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For	Page 7
At	
Job no. 170645	Date / By

TESTING METHODOLOGY

Fatigue testing

Test using load amplitude causing fatigue damage equivalent to the service life exposure to wind, accumulated just outside the "low cycle" range (10,000 +).

Static testing

Determine testing load from ultimate load combinations in NZS 1170, allowing for variance factors from NZS 1664.1

Durability assessment

Not in ACH scope but A413.1 alloy has Cu content < 0.3% and so complies with TDM Appendix B2 "LED Road Lighting Luminaire Assessment Checklist"

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STRESS AMPLITUDE/CYCLES FOR TESTING

Using Miner's summation equation from NZS 3404.1; Cl. 10.8.2 assess constant stress range producing combined damage of 1.0 for 10,000 – 15,000 cycles. The maximum number of cycles is limited by test duration time – say up to 4hrs per item at 2.5–3.0 Hz. The objective is to identify the f_i/f_{3c} ratio producing fatigue damage equivalent to failure, in under 15,000 cycles.

for $f_i > f_{3c}$

$$\frac{\Sigma n_i (f_i^*)^3}{5\times10^6(\phi f_{3c})^3} = 1.0$$

$n_1 = 12000$, $f_1^*/f_{3c} = \xi$, take $\phi = 1.0$

$$\frac{12000}{5000000}(\xi)^3 = 1.0$$

$$\xi^3 = 417 \rightarrow \xi = 7.5$$

So the amplitude (stress range) equal to 7.5 times the numeric value of constant stress fatigue limit f_{3c} produces cumulative fatigue damage

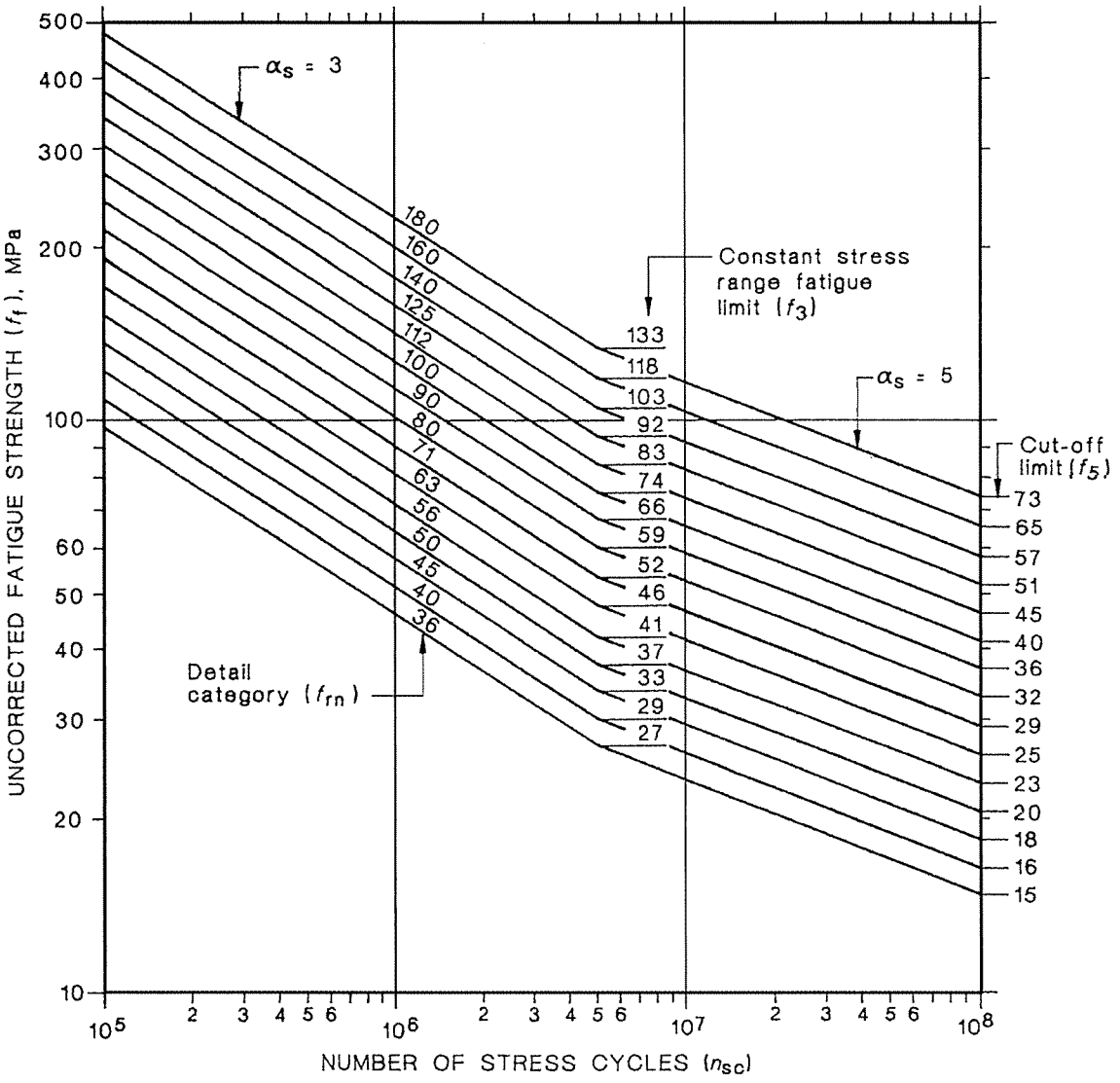

Figure 10.6.1 – S-N curve for normal stress

10.7 EXEMPTION FROM FURTHER ASSESSMENT

At any point in the structure at which all normal stress ranges are less than the constant normal stress range fatigue limit (ϕf_3) for the relevant detail category, no further assessment at that point is required.

10.8 FATIGUE ASSESSMENT

10.8.1 Constant stress range

The design stress range (f^*) at any point in the structure subject only to constant stress range cycles shall satisfy:

$$\frac{f^*}{\phi f_c} \leq 1.0$$

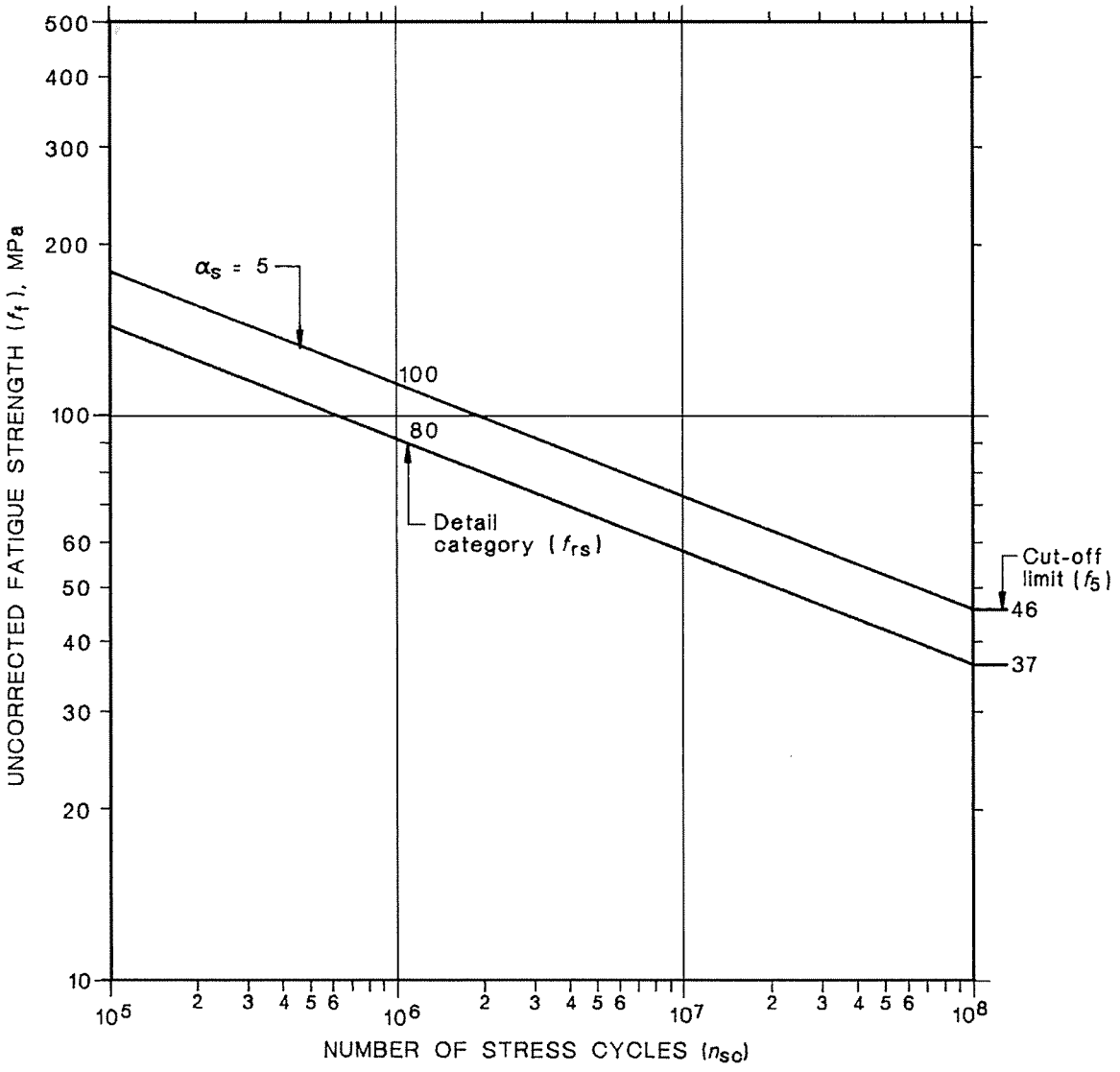

Figure 10.6.2 – S-N curve for shear stress

10.8.2 Variable stress range

The design stress range (f_i^*) at any point in the structure at which the stress range varies shall satisfy:

(a) For normal stresses:

$$\underbrace{\frac{\Sigma_i n_i \left(f_i^*\right)^3}{5\times10^6\left(\phi f_{3c}\right)^3}}_{\text{for } n_i(f_i^*) \text{ pairs in which } f_i^* \geq \phi f_{3c}} + \underbrace{\frac{\Sigma_i n_i \left(f_i^*\right)^5}{5\times10^6\left(\phi f_{3c}\right)^5}}_{\text{for } (n_i f_i^*) \text{ pairs in which } \phi f_{3c} > f_i^* \geq \phi f_{5c}} \leq 1.0$$

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equivalent to failure in 12,000 cycles

To establish the lowest stress category (and corresponding f_s) for which wind-induced fatigue will not govern over ultimate limit state strength condition use simplified approach developed by JD Holmes. Use $f_{max}/f_m = 3.5$, derived by JD Holmes directly from Miner's summation because:

1. Design life of adaptors is ~25 years vs. 50 yrs assumed by JD Holmes
2. Risk factor is low since in case of adaptor failure power cable will stop luminaire from falling on the ground.

$$f_{wf} = 3.5 \times f_m$$

$$f_w^* \leq \phi f_{wf}$$

for $\phi = 1.0$

$$f_w^* \leq 3.5 \times f_m$$

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WIND-INDUCED FATIGUE OF STEEL STRUCTURES: A SIMPLIFIED DESIGN APPROACH TO AS 4100

by

[redacted] JDH Consulting
[redacted] Taylor Thomson Whitting

SUMMARY This paper discusses the fluctuating forces produced by wind action and reviews provisions in the Eurocode and AS 4100 to deal with the effect of these forces on steel structures. It outlines a simplified approach to the design of details in steel structures against high-cycle fatigue damage and failures due to the fluctuating load produced by turbulent wind forces.

Reviewers:
Tony Rofail, Director of Windtech Consultants
Cam Leitch, Manager of the Cyclone Testing Station, James Cook University, Townsville
Dr David Henderson, Research Fellow at the Cyclone Testing Station, James Cook University, Townsville

1 INTRODUCTION

Wind loading is by its nature a fluctuating one and is thus a potential source of fatigue damage to steel structures. Some examples of wind-induced fatigue failures are shown in Figures 1 and 2 (pp. 8–9).

For many engineering structures, the ultimate load is a consequence of effects other than wind. Dead loads are typically applied only once and therefore do not affect fatigue. Structures are often designed for live loads that rarely exist during the life of a structure, particularly in non-industrial environments and thus these also have little effect on fatigue. Consequently, for most structures, wind fatigue is not significant, and economical and low detail-category connections can be used. As is clear from Figures 1 and 2 however, for some structures such as light poles and highway structures, design against wind-induced fatigue is critical, and a method is required for dealing with the phenomenon at the design stage. For other structures such as architectural fins and features on high-rise buildings, lightweight elevated roofs on large structures such as sporting stadiums, and the top sections of large communication towers, wind-induced fatigue also has the potential to generate premature failure, partly as a result of the generation of dynamic resonant response and a consequent large number of stress cycles at the natural frequencies of the structure.

Grundy [1] has given a summary of the mechanisms of fatigue crack initiation in steel structures, of the development of the fatigue strength (S-N) lines and the 'detail classification' method in AS 4100 [2], and of the cumulative damage hypothesis of Miner's Rule. This approach to design for fatigue will be assumed in the present paper, for the case in which the forces are produced by wind loading.

The present paper outlines a simplified approach to the design of details in steel structures against high-cycle fatigue damage and failures, due to the fluctuating forces produced by turbulent wind forces. Note that the methodology in this paper is not applicable to wind-induced low-cycle fatigue damage of light-gauge steel products such as steel roofing, a problem that has been discussed elsewhere (e.g. [3]).

2 FLUCTUATING FORCES PRODUCED BY WIND ACTION

Wind forces can produce fluctuating forces by more than one mechanism. One common mechanism is the fluctuating forces produced by vortex shedding on slender structures or members at certain critical wind speeds, and dynamic resonant amplification is usually involved. This mechanism can accumulate a large number of stress cycles, and hence fatigue damage, in a short period. Vortex-induced vibrations are sensitive to a number of factors that are difficult to predict, including atmospheric turbulence and structural damping. However, they can be avoided by use of aerodynamic means (such as fins or strakes) or by structural or mechanical means (e.g. by increasing damping), in which case fatigue damage can be minimised or eliminated.

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Fluctuating forces and stresses produced by random turbulent forces from wind velocity fluctuations or from structure-induced turbulence cannot generally be avoided, and can result in accumulated fatigue damage over a period of years (see Figures 1 and 2, pp. 8-9). These mechanisms produce fluctuating stresses that increase with increasing mean wind speed and can be expressed in the following form:

$$\sigma_f = A\bar{U}^n \tag{1}$$

$\bar{U}$ is the mean wind speed (averaged over 10 minutes to 1 hour), A is an arbitrary parameter (theoretically the standard deviation of the stress for a mean wind speed of 1 m/s), and σ_f is the standard deviation of the fluctuating stress, which for fatigue calculations can be taken as equivalent stress range. For random stress-time histories typical of wind loading, a *rainflow*, or *reservoir* method can be used to count 'cycles', as discussed by Grundy [1].

The exponent n in Eq. 1 has a value of 2.0 when a structure or member reacts quasi-statically to wind forces, but can take a value up to 2.5 if there is significant resonant dynamic response to wind.

3 STRESS CYCLE COUNTS

The number of stress cycles induced by wind forces over an extended period in a structure depends on the wind climate. The Weibull Distribution is commonly used to describe average wind speeds (averaged over 10 minutes to 1 hour) in synoptic wind climates, i.e. in large-scale wind events, excluding thunderstorms of short duration. This distribution takes the form of Eq. 2.

$$P(>\bar{U}) = \exp\left\{-\left(\frac{\bar{U}}{c}\right)^k\right\} \tag{2}$$

in which c is a scale factor and k a shape factor.

It can be shown ([4], [5]) that the number of stress cycles $N(f)$, with a range exceeding a stress level f, in a time period T is a function of the following parameters:

$$N(f) = F\{b, k, n, \bar{N}, (f/f_{max})\} \tag{3}$$

where $\bar{N}$ is a characteristic or average number of stress cycles of all amplitudes in the time period T.

f_{max} is the expected largest value of stress in the time T. b is a similar exponent to n, but represents the variation of the average *frequency* of stress cycles with mean wind speed rather than the variation of the magnitude of fluctuating stresses as represented by Eq. 1.

It has been shown [5] that $N(f)$ is relatively insensitive to b, k, n, and $\bar{N}$ within the expected ranges of the values of those parameters. Thus for practical purposes, $N(f)$ can be represented as a single function of f/f_{max}. Such a function has been developed for the Eurocode for Wind Actions [6], as described in the next section.

4 EUROCODE CYCLE COUNT CURVE

Figure B.3 in Eurocode 1 [6] gives a curve showing the number of times N_s that the value ΔS of a stress produced by wind action is reached or exceeded, during a period of 50 years. ΔS is given as a percentage of the maximum load effect S_k in the period of 50 years. (Note: ΔS is equivalent to f_f in AS 4100, and N_s is equivalent to $N(f)$ in Eq. 3).

The relationship between $\Delta S/S_k$ and N_s in Eurocode 1 is the following:

$$\Delta S/S_k = 1 - 0.174\ log_{10} N_s + 0.007\ (log_{10} N_s)^2 \tag{4}$$

Note that $\Delta S/S_k$ is expressed as percentage in the Eurocode [6].

Eq. 4 is plotted in Figure 3. It can be seen that this function predicts 1,000 cycles with a stress range equal to about 55% of the maximum stress or greater, and 1,000,000 cycles with a stress range greater than or equal to about 20% of the maximum.

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The universality of Eq. 4 has been confirmed to a reasonable degree of accuracy by direct theoretical calculation of stress cycle counts from wind climate data and wind-tunnel test data for several particular situations (e.g [5]). However, in tropical cyclone situations the low-cycle, high-stress end of the count may be dominated by one or two individual storms and vary considerably from event to event [3].

5 FATIGUE STRENGTH ASSESSMENT IN AS 4100

In AS 4100 [2], the relationship between an allowable stress range s of constant amplitude, and number of cycles to failure n_{sc} is given by a three-segment function which can be written:

$$n_{sc} f^3 = f_{rn}^3 \times 2 \times 10^6, \text{ for } n_{sc} \leq 5 \times 10^6 \quad (5a)$$

$$n_{sc} f^5 = f_{rn}^5 \times K, \text{ for } 5 \times 10^6 < n_{sc} \leq 10^8 \quad (5b)$$

$$\text{where } K = (5 \times 0.4^{5/3}) \times 10^6 = 1.0858 \times 10^6$$

$$f = 0.05^{1/5} \times 0.4^{1/3} f_{rn} = 0.405 f_{rn}, \quad \text{for } n_{sc} > 10^8 \quad (5c)$$

f_{rn} is the 'detail category', and is equal to the allowable stress range for $n_{sc} = 2 \times 10^6$ cycles.

Design charts consist of a number of lines of the form given above for a number of values of detail category f_{rn}. As discussed by Grundy [1], this 'detail category' approach implicitly accounts for factors affecting fatigue damage such as stress concentration factors or weld defects.

6 FATIGUE DAMAGE AND LIFE

As discussed in the previous section, the fatigue strength (S-N lines) in AS 4100 comprises a 'family' of lines with only a single parameter, the detail category f_{rn}, distinguishing between one line and another. This property together with the 'universal' stress amplitude versus cycles relation for wind loading given by Eq. 4, gives a simple relationship between fatigue damage in a defined period T (say 50 years) or the average or expected fatigue life, and the ratio f_{max}/f_{rn}. The fatigue damage is accumulated using Miner's Rule, which is well established for high-cycle fatigue.

Thus, for a sector centred on a stress range f, the incremental fractional damage, ΔD, is given by:

$$\Delta D = \frac{n(f)}{n_{sc}} \quad (6)$$

where n_{sc} is given by Eq. 5 and $n(f)$ can be determined for a given stress range from Eq. 4 by differentiation.

Thereafter, the total damage can be accumulated by summing the contributions from all stress amplitudes:

$$D = \Sigma \Delta D = \sum \frac{n(f)}{n_{sc}} \quad (7)$$

Figure 4 (p. 10) shows the calculated damage plotted against the ratio of maximum stress in the defined time period (one crossing) f_{max}, to the detail category f_{rn}, corresponding to a three segment fatigue strength relationship. As the fatigue strength relationship forms a single family of three-segment lines, Figure 3 is a universal graph, applying to all detail categories.

Damage D equal to 1.0 corresponds to failure. This occurs at a value of f_{max}/f_{rn} equal to about 3.45, as shown in Figure 4. Since the stress-cycle count is relatively insensitive to the nominal structure lifetime or reference period T, Figure 4 should be applicable to reference periods other than 50 years; however, f_{max} should then be interpreted as the expected maximum stress in the period of T years.

This simple relationship between the maximum stress and the detail category leads to a simple relationship between the ultimate design stress and the detail category as discussed in the following section.

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7 SIMPLIFIED FATIGUE DESIGN LIFE ASSESSMENT TO AS 4100

By combining the wind load/cycle count relationship normalised to maximum wind load, with the fatigue assessment method of AS 4100, it is possible to predict the fatigue damage caused by wind loads over a period.

The following equations permit a simple, conservative calculation to allow a wind-loaded structure to be assessed for fatigue design life. They require only the stress due to ultimate limit state wind and the detail category to be known.

These equations are based on ultimate limit state wind loads (typically 500 to 1,000 year return period) since this is the usual basis of design. Hence, for damage D to be less than or equal to 1.0, f_w^*/f_{rn} should be less than or equal to 5.0.

$$f_{wf} = 5 * f_{rn} \tag{8}$$

where

f_{wf} is the ultimate wind-equivalent fatigue stress capacity
f_{rn} is the fatigue detail category
f_w^* is the stress produced by the ultimate design wind load

The stress due to ultimate wind load only should satisfy the following:

$$f_w^* \leq \phi f_{wf} \tag{9}$$

where

ϕ = 0.7 if the member is not redundant
ϕ = 1.0 if the member is redundant

AS 4100 provides guidance on whether a member should be considered redundant. In addition to the consequence of failure, it considers whether the detail can be inspected and whether inspection regimes are in place.

In effect, the calculation shows that the combined effect of stress/cycle count data in Eq. 4, across all stress levels, is equivalent to a fixed amplitude loading of 2 million cycles at 20% of ultimate stress over a 50 year period.

This equation assumes that the expected maximum wind loads in a fifty year period are 70% of ultimate wind loads and that loads are proportional to the square of wind speed. This is a reasonable assumption for non-cyclonic regions and conservative otherwise. The assumption is conservative if the ultimate wind load includes a resonant component that is less significant at lower wind speeds.

There is also an assumption that the maximum ultimate wind stress is caused by wind from all directions. This would be a reasonable assumption for a slender light pole that is excited by wind from all directions. It may also be reasonable for roof rafters where the roof is subject to similar uplift pressures for winds from all directions. The assumption may be conservative however for a structure such as a grandstand roof that has particularly high loads for wind from particular directions only.

The equations also assume a design fatigue life of 50 years. The design life is the period for which there is a 2.3% chance of failure. The mean life is about three times the design life and there is a 97.7% chance of failure at nine times the design life [1].

Example

Consider the case of a non-redundant connection detail with stress in a welded cleat, due to ultimate wind only, of 200 MPa. What detail category is required to achieve a 50 year design life?

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$f_{rn} \geq 200 / (0.7 * 5)$ MPa
≥ 57 MPa

The designer therefore needs to ensure that the detail category of the connection is at least 57 MPa. According to CIDECT Design Guide 8 [7], this would prevent for example, the use of simple fillet welds (f_{rn} = 36) in favour of full penetration welds (f_{rn} = 71).

8 DETAILING TO AVOID WIND-INDUCED FATIGUE

Problems of wind-induced fatigue will occur where there is a high proportion of total ultimate stress due to wind and details with low fatigue resistance.

As discussed in the introduction, for most structures, wind-induced fatigue is not significant and low-cost, low detail-category connections can be used. Eq. 9 given above allows this to be checked simply.

Highly efficient designs of light-weight roofs will have high stress levels due to wind. Wind bracing for example may only carry wind load. This is especially the case where higher strength materials are used. Sensitivity to fatigue is independent of material yield stress. Hollow sections with yield strengths of 350 or 450 MPa therefore need greater consideration.

In these cases, it is important that adequately high detail-category connections are used. This may require the use of:

- full penetration welds instead of fillet welds
- the tapering of members at a change of section
- longitudinal rather than transverse welds

References [2] and [6] publish detail category values for various joint configurations. The stress levels to be used in calculations are based on simple analysis (e.g. beam theory). The stress concentrations created by these details are inherently allowed for in the evaluation of the detail category value.

Where there is no published similar joint configuration, a more sophisticated approach is required using 'hot spot' analysis. Finite element analysis can be used to better estimate stresses, allowing for stress concentrations. Higher detail categories are then allowed to be used in conjunction with the higher stresses. References [1] and [7] fully explain the 'hot spot' method.

Figure 5 shows the results of a finite element model of a connection with high stress concentrations. Under static loading, high stresses in a highly localised region would be expected to yield, but with no adverse effects on the overall structure. Under dynamic loading, these stress concentrations act as initiators to fatigue cracks. The stresses caused by commonly occurring winds are well below yield but are sufficient to induce fatigue.

A model like this can be used to establish hot-spot stress levels that in turn can be used to predict fatigue life.

9 CONCLUSIONS

The random nature of wind loading has been shown to statistically follow a predictable distribution of magnitudes and cycle counts, when normalised to a maximum wind load. Together with the fatigue strength relationship (S-N lines) given in AS 4100, this allows the accumulated fatigue damage of a structural element due to fluctuating wind forces to be calculated in accordance with AS 4100 procedures.

A simple, conservative method is proposed to allow wind-induced fatigue design life to be assessed, based only on the stress associated with the ultimate wind load and the detail category. This method entails simply applying the checks implied by Eqs. 8 and 9, and does not involve extensive calculations of fatigue cycle counts or estimation of fatigue damage using Miner's Rule.

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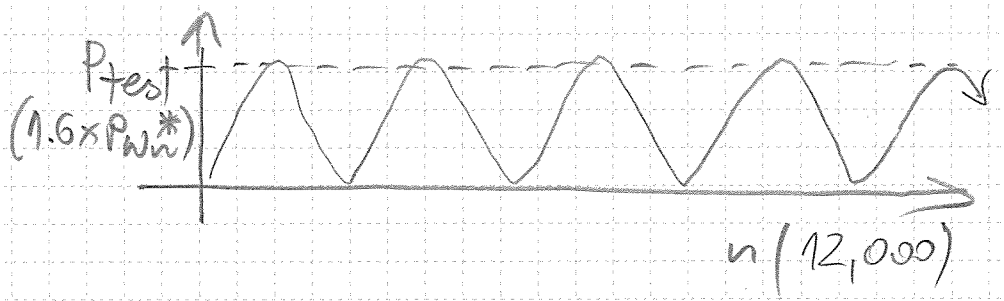
Expressed in terms of fatigue testing load as a multiple of wind drag on luminaire under ultimate wind:

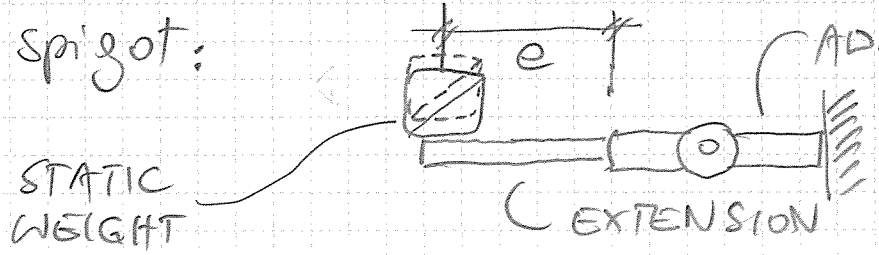
$$P_{test} = P^*_{wu} \times \frac{1}{3.5} \times \frac{1}{1.33} \times 7.5 = 1.61\ P^*_{wu}$$

f_{rn}/f_w^* · f_{3c}/f_m · f_w^*/f_{3c}

The above assumes that the fatigue load testing involves repeated application and removal of P_{test} with no stress reversal:



The corresponding test setup will feature a static weight simulating $P_{test} = 1.61 \times P^*_{wu}$ being lifted and lowered 12,000 times onto adaptor held in a vice or mounted on spigot:



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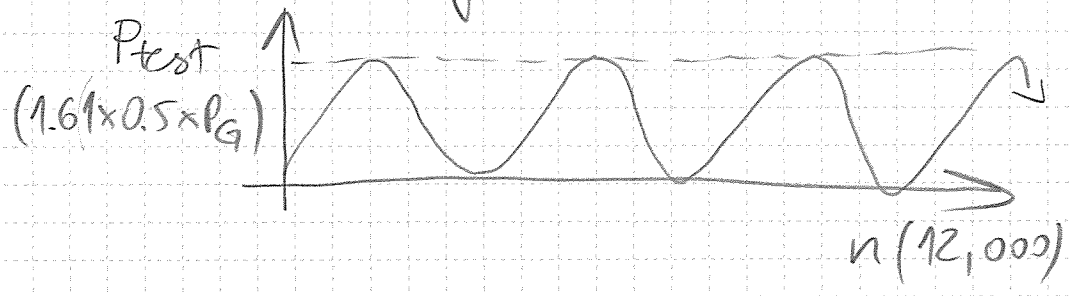
Testing regime will also allow for inertial forces resulting from column outreach swaying up & down. Assume the amplitude of cross-wind oscillation equal to half the weight of the luminaire multiplied by 1.61



Of the luminaires approved by WCC the following two are expected to produce maximum vectoral sum of wind and gravity forces

1. Italo 3 (heavy luminaire with moderate side windage)
2. Sylvania Roadster (moderately heavy luminaire with high side windage)

As per GESS brief the testing regime is primarily focussed on validating the use of NTX-M luminaire.

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Comments on relevance of NZS3404 to aluminium structures

NZS1664 has fatigue design provisions similar to NZS3404:

1. S-N curves with a slope of 3.42 - 6.85 vs. 3.0 - 5.0 in NZS3404
2. Cut-off limits of 13.0 - 70 MPa vs. 15.0 - 73.0 MPa in NZS3404

The only aspect of ACH testing methodology linked to NZS3404 is the derivation of cycle/range regime producing fatigue damage equivalent to service life exposure to wind oscillations. This step is derived directly from Miners summation and is both detail and material independent (given similar S-N curves).

TABLE 4.8.2

CONSTANTS FOR *S-N* CURVES

Detail category†	*K* MPa	*m* MPa	Fatigue limit, * S_{rd} MPa
A	665	6.85	70
B	900	4.84	37
C	1920	3.64	28
D	1080	3.73	17
E	1100	3.45	13
F	1200	3.42	13

* Fatigue limit is based on $N = 5 \times 10^6$.

† See Table 4.8.1.

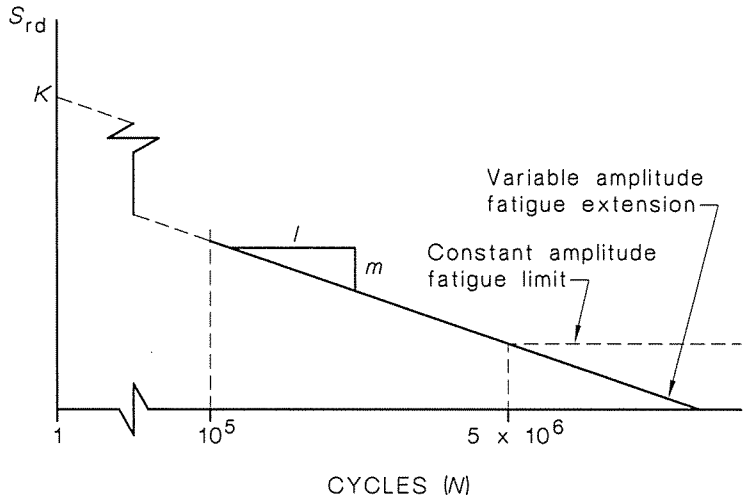

FIGURE 4.8.2 SCHEMATIC FATIGUE CURVE

4.9 COMPRESSION IN SINGLE WEB BEAMS AND BEAMS HAVING SECTIONS CONTAINING TUBULAR PORTIONS

4.9.1 General The value of r_y in Clause 3.4.12 shall be permitted to be replaced by an effective r_y denoted r_{ye} given in Clauses 4.9.2 to 4.9.4.

Sections with the tension flange partially or fully braced and with the compression flange laterally unbraced shall be permitted to be designed using a rational method of analysis.

4.9.2 Doubly symmetric sections and sections symmetric about the bending axis For checking beam sections at brace or support points or between brace or support points of beam spans subjected to end moment only or to transverse loads applied at the neutral axis of the beam, the following shall apply:

$$r_{ye} = \frac{\sqrt{C_b}}{1.7}\sqrt{\frac{I_y d}{Z_c}\sqrt{1 + 0.152\frac{J}{I_y}\left(\frac{k_y L_b}{d}\right)^2}} \qquad \ldots 4.9.2(1)$$

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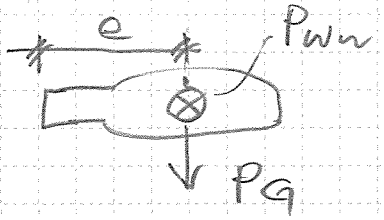
TESTING LOAD (FATIGE)

Properties of the two luminaires considered to be critical:

	weight	Sa	Cfig	e
Italo 3	19kg	0.10m²	~0.40	500mm
Roadster	12kg	0.115m²	~0.50	350mm
NXT-M	12kg	0.084m²	~0.40	400mm

Assume the same eccentricity for G & Wn:



Ultimate wind pressure:

return period 500yrs
TC 2
IL 2
h = 12 - 13 m
W wind region

$P_{wn} \cong 1.65\ kPa$

Italo 3

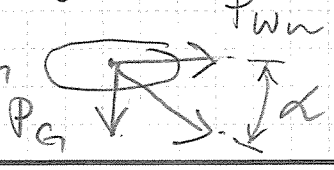
$P_G = 0.5 \times 0.19 = 0.095\ kN$

$P_{wn} = 0.1 \times 0.40 \times 1.65 = 0.066\ kN$

$P_{test}^{①} = \sqrt{0.095^2 + 0.066^2} = 0.116\ kN$

$M_{test}^{①} = 0.116 \times 0.5 = 0.058\ kNm$

$\alpha_{①} = 55°$



ACCEPTED LUMINAIRES

As at 25 September 2014, the following luminaires have been assessed using the M30 criteria and granted acceptance for installation.

Manufacturer & Luminaire	Luminaire Model	System Wattage	Number of LEDs	Colour Temperature	Category	Supplier	RAMM code
AEC A2 LED	A2 LED		10 - 50	3950K	P only	Techlight Ltd	
AEC LED-in (ST/OC)	4.5-18 – 4.5-90 4.7-27 – 4.7-54	28W - 145W 60W - 118W	18 – 90 27 - 54	3950K	P and V	Techlight Ltd	
AEC Italo	Italo 1 Italo 2 Italo 3	20W - 315W			P only P and V V only	Techlight Ltd	
Betacom GL520	GL520	17W - 33W	24	4000K	P only	Betacom (1988) Ltd	GL520
Cree Ledway	XILO 02 XILO 04 XILO 07 XILO 10	25W - 72W 45W - 135W 80W - 200W 117W - 272W	20 – 30 40 – 60 70 – 90 100 - 120	4300K	P and V	Advanced Lighting Technologies Ltd	
Cree Edge	Square Round				P and V P and V	Advanced Lighting Technologies Ltd	
Cree SLM	X6SR Series	38W – 142W	20-60	4000K	P and V	Advanced Lighting	

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Manufacturer & Luminaire	Luminaire Model	System Wattage	Number of LEDs	Colour Temperature	Category	Supplier	RAMM code
						Technologies Ltd	
Cree XSP	XSP1 XSP2	53W 101W, 153W		4000K	P and V P only	Advanced Lighting Technologies Ltd	
KTL Shard-P	B28-F (LL17056 optic only)	28W	1 COB	4000K	P only	KTL Technologies Ltd	
LED Roadway Satellite	SAT-24S SAT-48S SAT-72M SAT-96M	22W - 50W 43W - 100W 65W - 150W 86W - 200W	24 48 72 96	4300K	P only P and V V only V only	Energy Light Ltd	
LED Roadway NXT	NXT-12S NXT-24S NXT-36S NXT-48M NXT-60M NXT-72M	14W - 27W 28W - 54W 42W - 80W 53W – 108W 65W – 133W 78W – 158W	12 24 36 48 72 96	4000K	P only P and V P and V P and V P and V P and V	Energy Light Ltd	
Philips Roadstar	GPLS GPLM	45W - 102W 119W - 204W	30 – 49 79 - 98	4000K	P and V P and V	Philips (NZ) Ltd	
Schréder TECEO	TECEO 1 (5068 optic) TECEO 2	19W - 113W 63W - 313W	16 – 48 56 - 144	4100K	P and V V only	Betacom (1988) Ltd	

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Manufacturer & Luminaire	Luminaire Model	System Wattage	Number of LEDs	Colour Temperature	Category	Supplier	RAMM code
	(5068 optic)						
Schréder PIANO	PIANO 1 PIANO 2	21W - 63W 84W - 128W	16 - 48 64 - 96	4250K	P and V V only	Betacom (1988) Ltd	
Sylvania	StreetLED with aero screen only	28.5W		4000K	P only	Aesthetics Lighting	

Notes:

1. The Light Emitting Diode (LED) luminaires listed above have been assessed by the Transport Agency and are accepted for use on the NZ road lighting network. A detailed design is required to determine the best suited luminaire for the application.
2. All luminaires listed above must be supplied with a variable (dimming)/CMS compatible driver with the ability to add an LPC (Light Point Controller or Luminaire Controller) now or at a later date without requiring expensive wiring modifications.
3. For further information on any of the above products, please contact the respective supplier.
4. For all other enquiries, please contact the NZTA National Manager Traffic & Safety

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For | Page 25
At
Job no. | Date | By

DESIGN WIND PRESSURE (to AS/NZS1170.2:2011 incorporating amendment 1)

Design Input

design life	25 years		AS/NZS 1170.0:2002, T. 3.3
height above ground level, h_1	12.00 m		
height above ground level, h_2 (optional)	13.00 m		
importance level	Minor structures (failure not likely to endanger human life)		AS/NZS 1170.0:2002, T. 3.1
wind region	W - (Wellington & Marlborough Sounds)		AS/NZS 1170.2, Fig.3.1(B)
wind direction considered	Non-directional		T. 3.2
terrain category	TC2 - open terrain, grassland with few, well-scattered obstructions		Cl. 4.2.1
shielding multiplier, M_s	1.00		Cl. 4.3
topographic multiplier, M_t	1.00		Cl. 4.4

Results

	ULS	SLS	
return period	50 yrs	0 yrs	AS/NZS 1170.0, T. 3.3
regional wind speed	45 m/s	0 m/s	T. 3.1
wind direction multiplier, M_d	1	1	T. 3.2
terrain category	2	2	Cl. 4.2.1
for h_1= **12.00** (to nearest 0.5m)			
terrain/height multiplier, $M_{z,cat}$	1.02	1.02	T. 4.1
design wind speed, $V_{des,\theta}$	**45.9** m/s	**0.0** m/s	Cl. 2.3
design wind speed zone	Very High		Cl. 2.4.1
design wind pressure, Q(z)	**1.26** kPa	**0.00** kPa	
for h_2= **13.00** (to nearest 0.5m)			
terrain/height multiplier, $M_{z,cat}$	1.03	1.03	
design wind speed, $V_{des,\theta}$	**46.4** m/s	**0.0** m/s	
design wind speed zone	Very High		
design wind pressure, Q(z)	**1.29** kPa	**0.00** kPa	

NZS3604 Wind Zone	
Speed	Zone
0 - 32	Low
32.1 - 37	Medium
37.1 - 44	High
44.1 - 50	Very High
50.1 - 55	Ext. High
> 55	SED

Calculate topographical multiplier, M_t? Yes

Elevation above sea level, E	20 m	Cl. 4.4.1
Height of Hill, H	80 m	Cl. 4.4.2
Horizontal distance to a point half way down slope, L_u	1500 m	Cl. 4.4.2
Horizontal distance from the structure to the crest, x	2000 m	Cl. 4.4.2
length Scale, L1	540 m	Cl. 4.4.2
length Scale, L2	2160 m	Cl. 4.4.2
reference height of structure above ground level, z	12.00 m	Cl. 4.4.2
M_{lee} (either 1 or 1.35) refer loadings code for lee zones	1	Cl. 4.4.3

$M_t = M_h M_{lee} (1+0.00015E)$		(Cl. 4.4.1)	
$H/(2L_u)$	0.027	(Cl. 4.4.2)	
M_h =	1.000	(Cl. 4.4.2)	
M_{lee} =	1.000	(Cl. 4.4.3)	
M_t =	1.000		

SEISMIC DESIGN COEFFICIENT (to AS/NZS1170.5:2004)

Design Input

ductility, μ	1.25		AS/NZS 1170.5:2004 Cl. 4.3
building period, T_1	0.40 seconds		Cl. 4.1
building period, T_1 to nearest 0.05 seconds	0.4 seconds		
site subsoil class	C - Shallow Soil Sites		Cl. 3.1.3
location	Auckland		T. 3.3
type of structure	Reinforced Concrete		refer to NZS 3101:Part1:2006 Cl. 2.6.2.2 for details

structural performance category for ULS case: Normally Ductile Structure

near fault factor, N (T,D)	1	Cl. 3.1.6
type of analysis	equivalent static	

Results

hazard factor, Z	0.13	Cl. 3.1.4
spectral shape factor, $C_h(T_1)$	2.36	T. 3.1
manually input ULS structural performance factor, Sp	0.9	

	ULS		SLS		
structural performance factor, Sp	0.9		0.7		
return period	50	yrs	0	yrs	
return period factor, R	0.35		#N/A		T. 3.5
design ductility, μ	1.25		1.25		
inelastic spectrum scaling factor, $k\mu$	1.1429		1.1429		Cl. 5.2.1
elastic site hazard spectrum, $C(T_1)$	0.107		#N/A		Cl. 3.1.1
horizontal design action coefficient, $Cd(T_1)$	**0.085**		**#N/A**		Cl. 5.2.1

In the absence of experimental information for particular cables, C_d for helically wound, unwrapped cables shall be as follows:

(a) 1.2 for $bV_{des,\theta} < 0.5 m^2/s$.

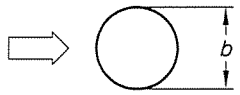
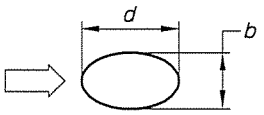
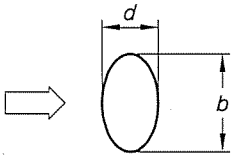
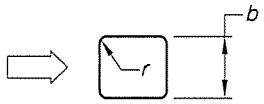
(b) 1.0 for $bV_{des,\theta} > 5.0 m^2/s$.

For values of $bV_{des,\theta}$ between 0.5 and 5.0, use interpolation.

Where icing of cables is considered, the increased cross-sectional area and changed shape shall be taken into account.

TABLE E3

DRAG FORCE COEFFICIENTS (C_d) FOR ROUNDED CYLINDRICAL SHAPES

Cross-sectional shape	Description	Drag force coefficient (C_d) (see Note 1)	
		$bV_{des,\theta} < 4 m^2/s$	$bV_{des,\theta} > 10 m^2/s$
	Cylindrical	1.2	(see Note 2)
 Ellipse $\frac{b}{d} = \frac{1}{2}$	Ellipse narrow side to wind	0.7	0.3
 Ellipse $\frac{b}{d} = 2$	Ellipse broad side to wind	1.7	1.5
 $\frac{b}{d} = 1$ $\frac{r}{b} = \frac{1}{3}$	Square with rounded corners	1.2	0.6

NOTES:

A3

1 For intermediate values of $bV_{des,\theta}$, linear interpolation shall be used. For circular cylindrical shapes, a value of C_d equal to 0.6 for $bV_{des,\theta}$ equal to 10 m^2/s shall be assumed, for the purposes of this interpolation only.

A2

2 For smooth circular cross-sections for which $bV_{des,\theta} > 10 m^2/s$, C_d shall be as follows:

$$C_d = 1.0 + 0.033 [\log_{10} (V_{des,\theta}.h_r)] - 0.025 [\log_{10} (V_{des,\theta}. h_r)]^2 \text{ or } 0.6, \text{ whichever is the greater}$$

where

h_r = average height of surface roughness

Some typical values of h_r are as follows:

Glass or plastic: 1.5×10^{-6} m

Steel, galvanized: 150×10^{-6} m; light rust 2.5×10^{-3} m; heavy rust 15×10^{-3} m

Concrete, new smooth: 60×10^{-6} m; new rough: 1×10^{-3} m

Metal, painted: 30×10^{-6} m

Timber: 2×10^{-3} m

3 Attachments to circular cross-sections (e.g. ladders, pipes etc.) projecting more than 1% of the diameter of the cylinder will induce aerodynamic separation and in these cases $C_d = 1.2$.

4 Due consideration shall be taken of the projected area and drag of the attachments themselves.

TABLE E1

ASPECT RATIO CORRECTION FACTORS (K_{ar})

Aspect ratio, l/b (see Note)	Correction factor K_{ar}
≤ 8	0.7
14	0.8
30	0.9
40 or more	1.0

NOTE: For intermediate values of l/b, use linear interpolation.

E2.2 Single open frame

The aerodynamic shape factor (C_{fig}) for a structure of open frame type, comprising a number of members where the members are sharp-edged rectangular or structural sections, lying in a single plane normal to the wind direction (see Figure E1), shall be taken as follows:

(a) For $0.2 < \delta_e < 0.8$ and $1/3 < (l/b) < 3$ (where l/b is the aspect ratio of the whole frame).

$$C_{fig} = 1.2 + 0.26\,(1 - \delta_e) \quad \ldots \text{E2(4)}$$

The reference area, A_{ref}, to be used in Equation E2(4) for an open frame shall be taken as the sum of the projected areas of all the members projected normal to the plane of the frame.

(b) For all other cases, wind action shall be the sum of the effects calculated on individual members and attachments determined in accordance with Clause 2.5.3.3 and Paragraph E2.1

where

δ_e = effective solidity ratio for an open frame, given as follows:

= δ for flat-sided members

= $1.2\delta^{1.75}$ for circular cross-section members

where

δ = solidity ratio of the structure (surface or open frame), which is the ratio of solid area to total area of the structure

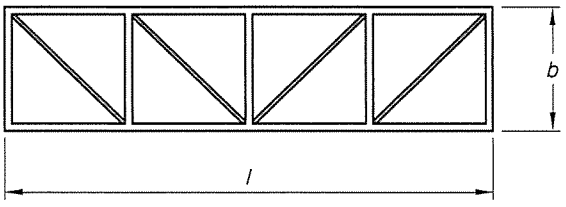


FIGURE E1 NOTATION FOR FRAME DIMENSIONS

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Roadster

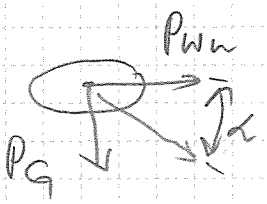
$P_G = 0.5 \times 0.12 = 0.06\ kN$

$P_{wn} = 0.115 \times 0.5 \times 1.29 = 0.074\ kN$

$P_{test}^{②} = \sqrt{0.06^2 + 0.074^2} = 0.095$

$M_{test}^{②} = 0.095 \times 0.35 = 0.033\ kNm$

$\alpha_{②} = 39°$



NTX-M

$P_G = 0.5 \times 0.12 = 0.06\ kN$

$P_{wn} = 0.084 \times 0.5 \times 1.29 = 0.055\ kN$

$P_{test}^{③} = \sqrt{0.06^2 + 0.055^2} = 0.081\ kN$

$M_{test}^{③} = 0.081 \times 0.4 = 0.032\ kNm$

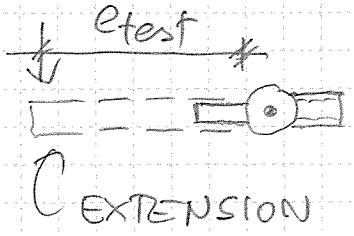
$\alpha_{③} = 47°$

Further to GESS instructions work out fatigue loading regime for NXT-M luminaire

$P_{test} = 1.61 \times 0.081 = 0.13\ kN$

$e_{test} = 400\ mm$

$\alpha_{test} = 45°$



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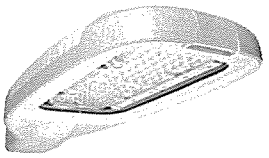
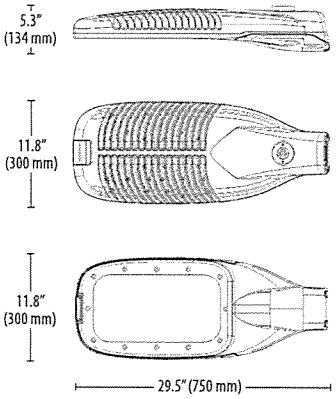
NXT™ SERIES



NXT-M SPECIFICATIONS

Housing:	Single piece, die-cast A360 aluminum
Operating Temperature:	-40°C to +40°C (-40°F to +104°F)[1]
Mounting:	1.625" - 2.375" (42 - 60 mm) O.D. Tenons
Mounting Methods:	Horizontal Entry or Post-Top Mount
Weight:	26 lbs (11.8 kg)
EPA Rating:	<0.9 ft² (< 0.084 m²)
Lens Material:	IK09 Rated Glass
Finish:	Durable polyester powdercoat topcoat
Available Colors:	GREY (RAL 7035) BRONZE (RAL 7022) BLACK (RAL 9005)



	NXT-M (48 LEDs)					NXT-M (60 LEDs)					NXT-M (72 LEDs)				
ELECTRICAL															
Drive Currents (mA)	350	450	525	600	700	350	450	525	600	700	350	450	525	600	700
Power Consumption (W)	53	68	80	92	108	65	84	99	113	133	78	100	117	135	158
Input Voltage (V)	120 - 240V (Standard), 277V (Optional), 347 - 480V (Optional)														
Surge Protection	Meets the requirements of ANSI C-High (10kV / 10kA)														
Power Factor	>0.90														

OPTICS & PERFORMANCE															
Photometry (Distribution)	Type II, III, IV, V														
Color Temperature (CCT)	4000K (Standard) 3000K & 5000K (Optional)														
Color Rendering Index (CRI)	~70														
3000K Fixture Efficacy (Lm/W)	122	120	118	115	100	123	119	117	113	101	123	119	116	112	101
4000K Fixture Efficacy (Lm/W)	125	122	116	111	106	125	121	118	111	106	125	121	118	112	109
3000K Fixture Output (Lm)	6,490	8,150	9,430	10,620	10,850	8,010	10,030	11,540	12,810	13,430	9,600	11,902	13,550	15,130	15,910
4000K Fixture Output (Lm)	6,660	8,280	9,250	10,170	11,420	8,130	10,190	11,720	12,520	14,090	9,750	12,080	13,750	15,160	17,160
LED L70 (Hours)	> 100,000 hours (@ 350mA)														

PHOTOCELL & CONTROLS	
Photocell Options	20 - year life photocell available.
Control & Monitoring	Dimming power supply (1-10V) is standard equipment. We offer a complete range of control and monitoring solutions

1. 277V Maximum tempertaure is 30°C. 2. Not all model configurations are DLC qualified - consult factory for details. 3. Only products with a CCT of 3000K (or less) meet International Dark Sky Association requirements.

Values shown are subject to ±5% tolerance. Color temperatures shown are ±300K type 2ES distribution. If post-top version is specified, add 5.4" (137 mm) to overall length dimension. Illustrated Above: NXT-M in grey (RAL 7035).
All information provided is subject to change without notice.

LED ROADWAY LIGHTING

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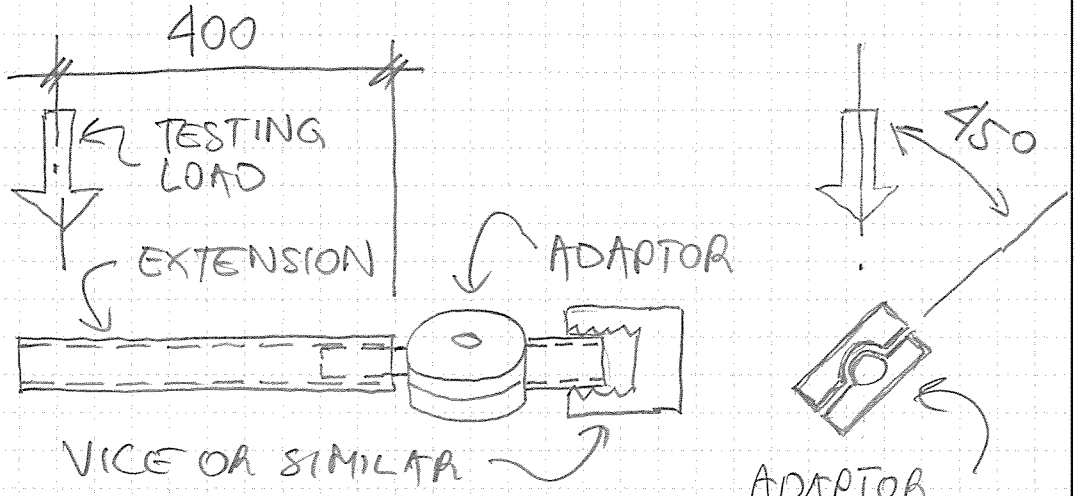
For FATIGUE LOAD		Page 30
At TESTING OF LUMINAIRE ADAPTORS		SD1
Job no. 170645	Date 6/12/17	By VW



ADAPTOR ORIENTED TO "OPEN" UNDER LOAD

ENGINEERS NOTES:

1. TESTING TO BE CARRIED OUT BY THE REPEATED APPLICATION OF THE TESTING LOAD AT THE LOCATION SHOWN IN SKETCH ABOVE
2. ONE LOAD CYCLE WILL CONSTITUTE OF LOWERING THE STATIC WEIGHT OF 13 kG UNTIL IT FULLY RESTS ON THE EXTENSION AND THEN LIFTING IT
3. TO AVOID DYNAMIC OVERLOAD THE STATIC WEIGHT IS TO BE LOWERED FROM THE HEIGHT OF 5-15MM (MEASURED ABOVE THE POSITION OF UNLOADED EXTENSION)
4. THE FULL TEST WILL COMPRISE OF 12,000 CYCLES.
5. ADJUSTMENT OF THE POSITION OF ADAPTOR DURING TEST IS ALLOWED AND DOES NOT RESET CYCLE COUNT

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TESTING LOAD (STATIC)

→ [1.2G & W_n] load combination (NTX-M)

$P_{1.2G} = 1.2 \times 0.12 = 0.144$ kN

$P_{W_n} = 0.084 \times 0.5 \times 1.29 = 0.055$ kN

$P^{*}_{1.2G\,\&\,W_n} = \sqrt{0.144^2 + 0.055^2} = 0.15$ kN

Coefficient of variation for 6 No. samples tested (from NZS 1664.1) adopt 1.20

$P^{TEST}_{1.2G\,\&\,W_n} = 1.20 \times 0.15 = 0.18$ kN

→ [1.35G] load combination (NTX-M)

$P_{1.35G} = 1.35 \times 0.12 = 0.16$ kN

$P^{TEST}_{1.35G} = 1.20 \times 0.16 = 0.19$ kN <u>governs</u>

To allow for some wind drag test @ 45° (adopt for halves oriented to "open up" under load)

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SECTION C8 TESTING

C8.3 TEST REQUIREMENTS A load/deformation curve will serve not only as a check against observational errors, but also to indicate any irregularities in the behaviour of the structure under load. It is desirable that a minimum of 6 points, excluding the zero load point, be obtained to define the shape of the load/deformation curve if the curve is predominantly linear, and a minimum of 10 points if the curve is significantly non-linear.

C8.5 PROOF TESTING For a proof load test on a structure to be successful, it is necessary that the structure does not reach its ultimate limit state during the test and also it does not incur serious permanent structural damage. Suitable methods for detecting the onset of damage vary from one material to another, and include such techniques as the measurement of crack widths and acoustic emissions. One commonly used method is the measurement of recovery of the deformation on unloading the structure. A recovery value of 85 percent is recommended by Reference 12.

For the serviceability limit state, it is suggested that a 95 percent recovery of deformation after removal of the test load will ensure that the specimen was substantially elastic at the test load.

C8.6.2 Test load It should be noted that the variability factor is a function of the number of specimens to be tested, and the estimated coefficient of variation of the structural characteristics of the individual specimens. The values given are based on the assumption that the coefficient of variation of the capacities of aluminium structures and elements is about 10 percent, while the coefficient of variation of the deformation characteristics is about 5 percent.

Table C8.6.2 gives some guidance for the choice of a variability factor if an estimated variation is significantly different from one assumed in Table 8.6.1.

TABLE C8.6.2

VALUES OF VARIABILITY FACTOR FOR TEST LOADS FOR ESTIMATED COEFFICIENT OF VARIATION

Number of specimens	Coefficient of variation of structural characteristics					
	5%	10%	15%	20%	25%	30%
1	1.2	1.46	1.79	2.21	2.75	3.45
2	1.17	1.38	1.64	1.96	2.36	2.86
3	1.15	1.33	1.56	1.83	2.16	2.56
4	1.14	1.30	1.50	1.74	2.03	2.37
5	1.13	1.28	1.46	1.67	1.93	2.23
10	1.10	1.21	1.34	1.49	1.06	1.85

C8.6.3 Criteria for acceptance Further testing of additional specimens may show that the population is acceptable because the variability factor reduces as the sample size increases.

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LOAD TESTING RESULTS

As reported by GESS / load testing witnessed intermittently by Aelfy

Fatigue testing

All 8No. samples tested passed the required 12,000 cycles without any sign of damage

Penultimate sample to be tested taken to 50,000 cycles - no damage

The last sample to be tested taken to 230,000 cycles - no damage

4No. of the cycled samples then tested to destruction with static load. Load at failure for these adaptors was the same as for un-cycled samples which is further evidence for no fatigue damage.

Spigot Adapter Tests

2 HERTZ

Spigot #: 1-6 Ø34 to Ø60mm and 7-12 Ø42 to Ø60mm

DATE	SAMPLE #	CYCLES	MINUTES	START TIME	FINISH TIME	RESULT
15/12/1917	#1 42-60	12000	100	14:30	16:10	NO CRACKS NO FAULTS
16/12/1917	#2 42-60	12000	100	8;00	9:40	NO CRACKS NO FAULTS
16/12/1917	#3 42-60	12000	100	9:50	11:30	NO CRACKS NO FAULTS
16/12/2017	#7 34-60	12000	100	11:40	13:20	NO CRACKS NO FAULTS
16/12/2017	#8 34-60	12000	100	13:40	15:20	NO CRACKS NO FAULTS
16/12/2017	#9 34-60	12000	100	15;30	17:10	NO CRACKS NO FAULTS
17/12/2017	#9 34-60	COUNT TO 50000	320	9:00	14:20	NO CRACKS NO FAULTS
17/12/2017	#4 42-60	RUN THROUGH NIGHT	990	14:30	7:00 18/12	NO CRACKS NO FAULTS
		RUN THROUGH NIGHT	1440	12.00 18/12	12.00 19/12	NO CRACKS NO FAULTS

~ 290,000

ACH 9.34

STATIC LOAD TEST

DATE	SAMPLE #	PREVIOUS CYCLES	FAIL WEIGHT KGS
18/12/2017	#1 42-60	12000	50
18/12/2017	#5 42-60	0	58
18/12/2017	#9 34-60	50000	55
18/12/2017	#10 34-60	0	50
18/12/2017	#7 34-60	12000	52
18/12/2017	#3 42-60	12000	52

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Static load testing

6 No. samples tested to destruction. Loads at failure were 50-58 kg (0.49 - 0.57 kN) which is well above the requirement of 0.19 kN

Luminaires covered by certification

Include luminaires similar to NTX-M in terms of weight & sail area