

The Importance Of Feedback To Product Providers



A CRH COMPANY

NAL Ltd has always adhered to the same rule concerning feedback from clients. If an issue in regards to a product is raised on more than one occasion, whether it be from the perspective of an Engineer, Designer or Installer, we will assess its gravitas, and develop a solution.

Ten years ago, after feedback from clients regarding the traditional installation method of Controller Cabinets, it became apparent a solution was required to eradicate concerns and complications regarding the carcinogenic base seal used during the installation process.

A reoccurring theme was the potential risk to health; due to the exposure to harmful chemicals. However, on probing further, additional issues were fed back such as:

- ♦ Difficulties encountered during re-cabbling
- ♦ Risk of flooding
- ♦ Threat of vermin/slug infestation
- ♦ Likelihood of a gas build up
- ♦ Problems scheduling access for BT engineers

NAL responded to the feedback received by heading back to the drawing board, to design and manufacture an innovative product that would rectify all of the issues highlighted. The result – the patented NAL Controller Cabinet Base – now used prolifically throughout the Traffic Signals Industry and is now being specified by other sectors, including Smart Motorways.

Through a timeline of noteworthy developments to the Controller Cabinet Base, NAL is able to demonstrate the significance of feedback and the impact it has, when used to update or develop new products.



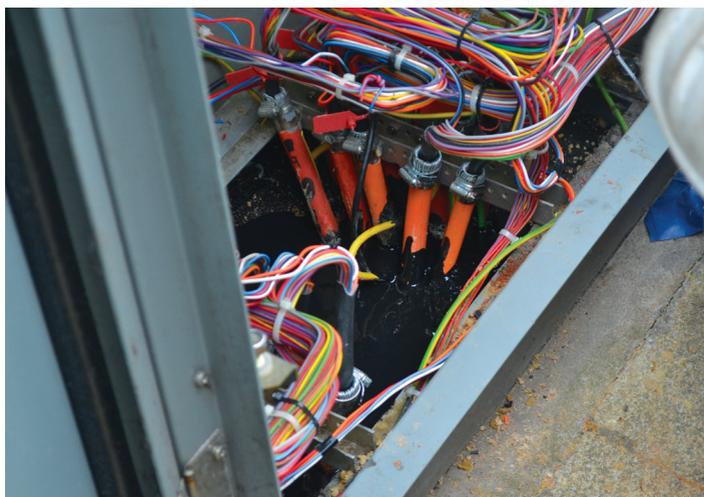
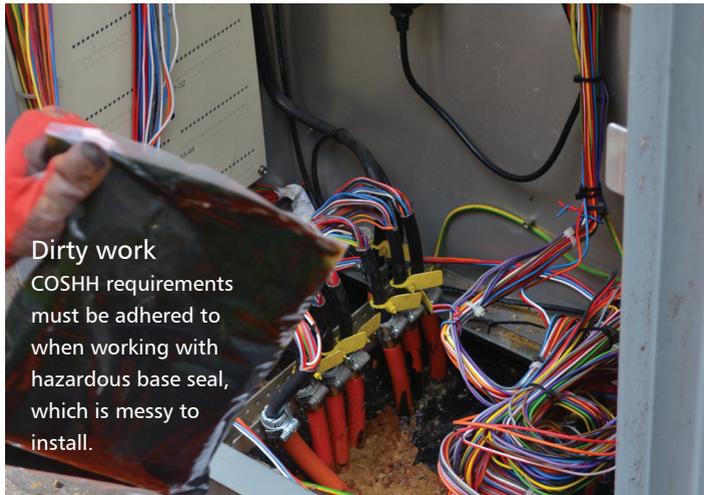
Hammer time
Cabinets base seal had to be broken before damaged cables could be removed and replaced, at the scene of a traffic signal pole replacement.

Product Development Timeline

2009 - Initial Problems Identified

During NAL CPD Demonstration Days and client meetings, electrical engineers had a platform to feedback their frustrations, relating to the carcinogenic base seal during the installation of controller cabinets. The following issues regarding base seal were raised:

- ♦ The need to adhere to COSHH (Control of Substances Hazardous to Health) regulations and protocols on installation and removal
- ♦ Extremely messy to install
- ♦ Has to be broken and removed for maintenance or for additional installation requirements
- ♦ Necessity for power supply to be terminated in order to break the base seal – rendering the need for significant traffic management, depending on the junction
- ♦ More time consuming to replace – may require further traffic management whilst work is completed
- ♦ Not a fully ducted system – making it difficult to add and maintain cables
- ♦ Provides a habitable environment where vermin are likely to remain, and chew through base seal and cables



2010 - Research and Development

Based on the feedback provided, NAL carried out extensive research and development over a period of eighteen months. Investigation began in identifying a solution, focussing on:

- ♦ Initial installation of the cabinet base
- ♦ Ongoing maintenance requirements

With the aim to rectify all issues raised and to provide a product, uncompromising in its performance, a prototype, was designed, and manufactured, to overcome issues surrounding the carcinogenic base seal.

Solution

The resulting prototype, was based upon a gas plinth principle design, comprising of a base plate containing a pre-drilled gland tray, with grommets to cover unused holes. The introduction of a gland tray removed the need for a carcinogenic base sealant, to make the installation process much safer and less time consuming. The plinth, was designed and manufactured with, 12 louvre air vents, to prevent a build-up of underground gasses and to eliminate the risk of condensation.

Trials began within various local authorities, and reaction to the product received mixed reviews. Maintenance teams, were positive in their feedback, the changes to the cabinet base meant their time on site, and workload was significantly reduced. However, feedback from installers and electrical contractors identified issues that would necessitate further modifications and refinements to the design. Differing colour palettes and a requirement for different sized bases had to be addressed by NAL in the quest to provide an overall solution, and to reassure clients they were being heard.



Further Modifications and Refinements

By this stage in development, it was apparent the Controller Cabinet Base would need to be continually developed and modified to meet the needs of our clients. NAL has always placed huge emphasis on maintaining strong working relationships, and over the next few years, due to ongoing communication and feedback, were able to further develop the Controller Cabinet Base.

2011 - Temporary Controller Cabinet Base

A Temporary Controller Cabinet Base was designed to enable electrical cabinets to be surface mounted during temporary construction work.

2012 - Gland Tray Improvements

The gland tray was made deeper and pre-drilled holes were increased in size to provide further space between the cable and castellation. This modification enabled 20 core armoured cables to be thread through the tray.

2014 - Low Level Cabinet Base

In 2014 the Controller Cabinet Base was specified by Transport for London, (TFL) with a view to installing on The Mall, outside Buckingham Palace. However, due to the modifications made the overall height of the product had been raised by 250mm. This had not been an issue to date, however TFL fed back that when on the bridge overlooking the view of Buckingham Palace, the Controller Cabinet could be seen protruding over the wall. NAL were able to offer a solution they had been developing alongside Lyndon George of Reading Council. A new, Low Level Controller Cabinet Base. This meant TFL were still able to specify the Controller Cabinet Base to simplify the installation, and any upgrading in the future.

2015 - BT Access Door

In 2015, feedback remained positive, however NAL were made aware, of a reoccurring issue involving BT access and the delays incurred. During site visits whilst projects were ongoing, frustrations were aired regarding the scheduling of BT Engineers on site, and having to co-ordinate visits around the availability of Traffic Signal Engineers, to aid with access to the Controller Cabinet Base. Based on this information NAL introduced a segregated access system (BT Door) as an optional extra on the Controller Cabinet Base, enabling BT independent access, eliminating the need of previously required personnel. Cardiff City Council specified the product with this optional extra, to assist in the maintenance of controller cabinets and to enable BT Open Reach Engineers to access the signal cabinets independently.

2015 - Multi Cabinet Base

A trend in the installation of Uninterrupted Power Supply (UPS) bases became apparent and feedback from clients, highlighted a requirement for more cabinets with a reduced footprint. NAL were able to meet this need with the introduction of the NAL Multi Cabinet Base System. The system comprises of three NAL Controller Cabinet Bases, all of which are fixed onto the Ultima Connect Access Chamber. Slough Borough Council specified this innovative design to simplify the installation of multiple Controller Cabinets. This new approach allowed for multiple cabinets to be installed in a single, more confined area compared to individual cabinet installations, benefitting the client due to space restrictions. The system also simplified the duct layout by reducing the amount of ducting required. This now permitted easy access between all signal cabinets, whilst retaining all of the benefits of the original NAL Cabinet Base system.

Deploying a temp

A Temporary Cabinet Base at the Bank Junction, London.



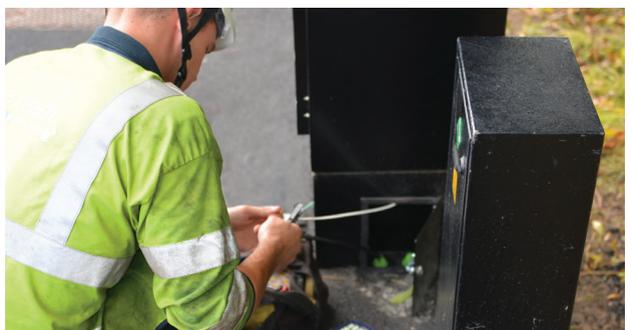
Gland tray

Pre-drilled holes makes easy work of threading multiple cables.



Laying low

The Low Level Cabinet Base safeguards the view.



Access granted

BT Engineers no longer need to wait for Traffic Signal Engineers.



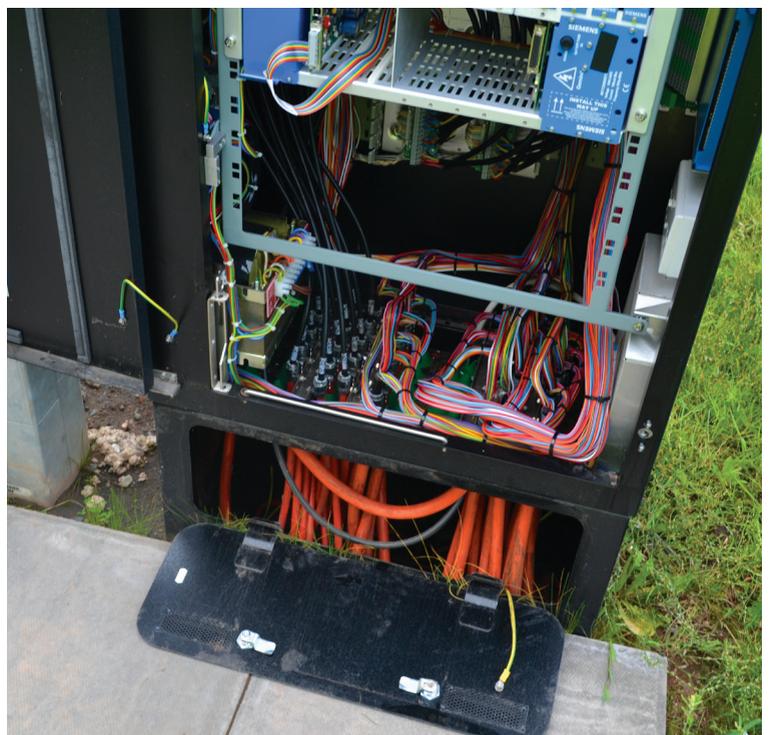
Cost Comparison

From the start and throughout the research and development process, consideration had to be given to the cost implications, the removal of the old base seal, would incur. NAL worked hard to ensure that overall we were able to offer a reduction in spend due to modifications made. Relying heavily on feedback to develop our products, if clients had been subject to additional costs to benefit from the new and improved Controller Cabinet Base, they may have been reluctant to approach NAL in the future with any issues or additional requirements. To encourage continued feedback, and strong working relationships NAL were in fact, able to ensure a small saving in costs when installing the Controller Cabinet Base, and significant savings moving forward in terms of maintenance and further cable installations.

Traditional Controller Stool	
Access Chamber in front of controller including installation 600x600x610mm deep with cover and frame.	£320.10
Stool	£40.00
Base Seal	£80.00
Kiln Dried Sand	£40.00
Health and Safety / COSSH	£30.00
Labour	£114.00
Total Installation Cost	£654.10



NAL Controller Cabinet Base	
Cost of new NAL Controller Cabinet Base with STAKKAbOX Access Chamber	£575.00
Stool	Not required
Base Seal	Not required
Kiln Dried Sand	Not required
Health and Safety / COSSH	Not required
Labour	No additional costs
Total Installation Cost	£575.00



Saving £79.10 per controller

Additional Products Launched In Response To Feedback

Since the development and modifications made to the Controller Cabinet Base, and having witnessed the benefit to all involved in response to feedback, NAL have continued in utilising this approach to develop and refine further products.

Cover Me System

Local Authorities came to NAL with concerns regarding the installation of out-of-service bags on traffic signals. It was fed back that the traditional method of climbing a step ladder to apply a signal bag, was now deemed unsafe and somewhat outdated. In response, NAL have worked with Peter Hoban and Liverpool City Council to develop the Cover Me system, which completely removes the working at height risk by enabling a single operative to install the Cover Me bag safely, from ground level. Achieved with the use of a lightweight, telescopic pole, the system also addresses and overcomes working width restrictions associated with step ladders, ensuring even the most restricted traffic signal sites, are safe to work in. The product was trialled on site successfully, and enabled a single operative to cover six traffic signal heads, safely and all within a time frame of 15 minutes.



Guardian Access Ramp

Following a meeting with Transport for London (TFL), representatives from both businesses recognised the need for a safer and more flexible access ramp system. NAL were made aware of how the process of installing a traditional tarmac temporary ramp was not only time consuming and difficult to remove, but also causing far too much disruption during the process. Potential hazards were identified when using alternative ramps, as they often came with a raised edge or no sides at all. Based on this feedback, the Guardian Access Ramp was developed to combat the issues raised. It is made from aluminium alloy thread plates, a material which contributes to a swift and simplified installation, in comparison to traditional tarmac alternatives. It can also be stored away easily, when not required. Designed with sloping side panels to allow easier access, coupled with a high skid resistance to prevent slipping or falling and the absence of raised edges, offered a complete solution to potential hazards. The Guardian Access Ramp is currently on trial with TFL.



Conclusion

It is clear to see, how listening to and reacting to feedback, has had an immeasurable impact in regards to the products and services used, within the Traffic Signal Industry and beyond. As previously mentioned, the Controller Cabinet Base is now being specified within the Smart Motorways sector. Thanks to information and issues fed back by Traffic Signal Engineers in 2009, motorway installers are benefiting from a significant reduction in electrical installation time, down from sixteen hours to four and a half. This is due to the absence of the previous necessity to re-visit the site to install the base seal or pea gravel.

Feedback to suppliers is never negative, only beneficial, clearly emphasised throughout our timeline of developments. It allows us to continually create, develop and provide innovative remedies to problems faced. Engineers, designers and installers, should be encouraged by the fact, their feedback, has generated solutions. The proof NAL have provided, demonstrates the benefits that are having a profound effect now and will continue to do so, in the future.



The NAL
Cabinet Base system
being installed on
the M6, junctions
16 - 19 for the Smart
Motorways
Scheme





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