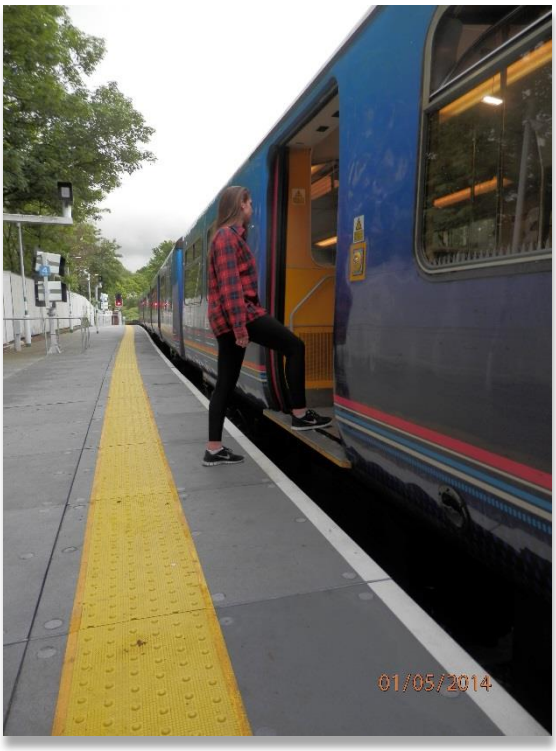
Hammond (ecs) ltd

Civils, Rail & Structure Maintenance



THE MOUNTBRIDGE SYSTEM

STEPPING DISTANCE PROBLEMS SOLUTION

Canal Road, Cwmbach, Aberdare. CF44 0AG

Tel: 01685 884813 / Fax: 01685 888187

Robert Williams (Project Manager)

Mobile: 07747 807552

Email: bob@hammond-ecs.com

Stepping distance problems? **The Mountbridge system solution.**

Safety issues

The Network Rail Strategy for sustainable development requires consideration of a number of issues related to passenger safety, not least stepping distances slips and trips, ponding, frozen surfaces, settlement of platform surfacing, /re-gauging issues, all contribute to the overall safety strategy.

Mountbridge system returns platform stepping distances to NWR standards, it utilises new wider 1200mm copers laid level affording safer access and egress from the trains, especially in inclement weather, the remaining sections of platform are laid to falls away from platform edge.

The Mountbridge platform surface is a system of flat pre-fabricated FRP non slip panels. Copers are laid level and rear panels laid to back fall and into new drainage system

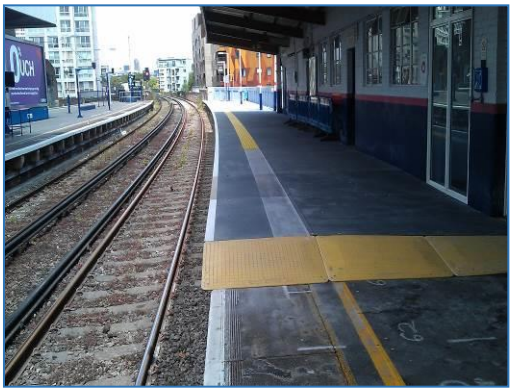
Disruptions to Passenger,TOCS and Freight.

The system offers more efficient use of access. No platform closures and minimal disruption especially to passengers and rail traffic.

Our system reduces these levels of disruption to passengers (PDI index), TOCS and freight, as we utilise line blockage arrangements rather than possessions, (the line blocks are only required to set the 1200mm zone for coper replacement).

Minimal disruption to passengers

From the photographs, it illustrates the manner in which at the end of each shift, temporary yellow FRP ramp plates are installed to minimise tripping hazards, as the new platform surface can be up to 150/200mm higher than the existing.



Environmental benefits.

Traditional platform refurbishment necessitates the removal of existing bulk materials such as tarmac/copers etc. and removal /disposal to land fill and subsequent replacement with similar materials (importing substantial quantities of sub base and new tarmac and possibly the installation of concrete over sail blocks.

The Mountbridge system is more environmentally tolerant than traditional build up, both in materials and mechanical equipment required, along with minimal disruption to passengers and rail traffic.

In order to accommodate the gauging tolerances platforms often need to be raised a range from 50mm-200mm with a corresponding correction to the over sail of the coper.

The attendant road rail vehicles operating in isolations and full possessions (and lead in times for planning)

Environmental benefits continued.....

On an average platform area of 600m2 to achieve even 50/75mm in tarmac would require 100te of tarmac overlay, to achieve 150mm increase in platform level over 90 /100te tarmac and 80 te of sub base.

Typically a traditional concrete coper (930 x760) weighs 170kg-(250kg/m2), a Mountbridge coper weighs the equivalent of 40kg/m2.

On recent installations to return platform to gauge has required increases in over sail on the existing copers of 100-200mm. In traditional systems assuming the riser walls were of adequate construction, this would require installation of over sail blocks, and lifting/relaying of concrete copers with the attendant mechanical handling assistance and disruption to passengers.

One final element for consideration, where changes to gauge occur, either through tamping activities or settlement of existing structures (especially on raised embankments), the Mountbridge system can be adjusted by raising or lowering the pedestal system at future dates.

Noise.

Whilst sound transmission is often an issue to residents adjacent to the stations by utilising lighter weight materials there is less necessity for heavy plant on track or platform thus minimising un-necessary noise. The vast majority of existing platform material is retained on site. As the Mountbridge system is ostensibly on overlay system.

Commercial benefits

Cost differentials traditional -v- new FRP platform system.

In broad terms on platforms of traditional construction the Mountbridge system offers an overall cost saving of 30%.

Value for money is provided in the system approach which requires minimal maintenance and negates the requirement for repainting of white/yellow lines and minimising issues of platform settlement leading to ponding, and freezing ponds of water on platform in the winter months.

Analysis of safety records highlight the problems TOCS have with passenger related safety incidents both in platform surfaces and stepping distances.

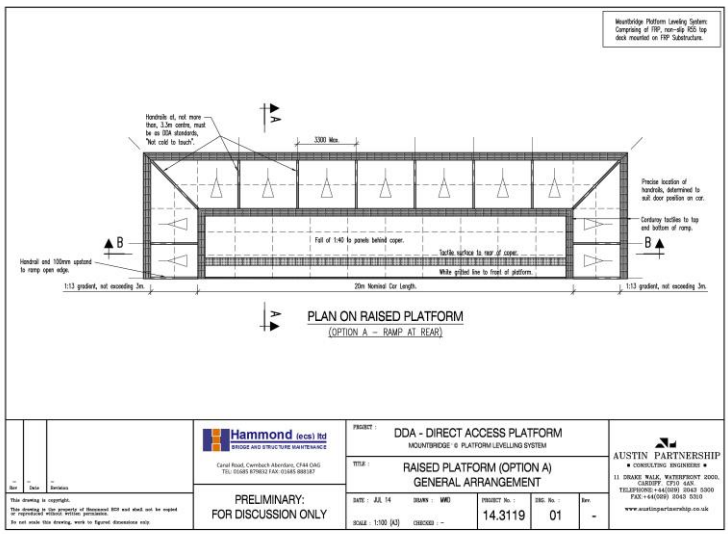
The system is cost effective and virtually maintenance free for the asset life span.

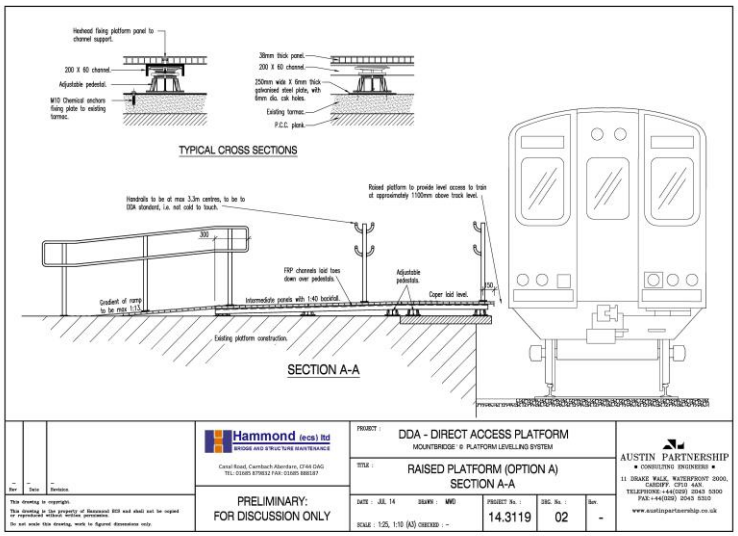
Partial platform renewals.

It is also an option to replace only the worst sections of platforms rather than the entire platform, thus removing ponding issues but equally improving stepping distances for passengers where the need is at its greatest for safety reasons.

Raised platform areas.

The Mountbridge system can also be incorporated to provide raised platform areas, whereby disabled or wheelchair passengers can direct access into trains. Typically this would require raising the platform from the 915 height to approx 1100mm (as illustrated in the drawings below).





Technical

Mountbridge system is of FRP construction -Fibre reinforced plastic (polymers in essence) and is low maintenance. The system easily complies with the design loading requirement for passengers of 5Kn/m2. (heavier loads can be accommodated by strengthening sub structure).

The Mountbridge system comprises of a series of flat pre-fabricated FRP non-slip deck panels mounted on an FRP substructure and adjustable pedestals, laid either on a galvanised steel /FRP mounting strips or concrete strip foundations.



System under construction

The white line at the front of the coper has been incorporated as a white angle with non slip surfacing. The necessity for the yellow line can be negated by the system incorporating a yellow high visibility tactile pad (recessed in the surface of the FRP deck) to minimise problems of tripping hazards and tactile pad displacement.


Illustration of white and yellow lines

Often platforms are set on embankments or in cuttings where disposal of existing traditional materials such as tarmac, and the importing of replacement tarmac and copers present logistical issues and rely on RRV traffic for materials disposals and renewals.

Pre-start photographs

The lighter construction is also suitable for existing structures where loading requirements are questionable, such as elevated reinforced concrete structures, concrete trestle platforms, or timber structures.

Mountbridge system components are FRP and of lighter construction than traditional bulk materials such as tarmac. Materials can be delivered and offloaded by hiab and where necessary moved manually or with minor mechanical assistance such as pallet trucks

With Mountbridge there is rarely any requirement for RRV, and the associated requirement for costly isolations and possessions.

Completed platforms indicating front closure screen to prevent access by vermin

Disruption to rail traffic is kept to a minimum as works to the front 1200mm (and 2500mm passenger minimum access zone) are undertaken during engineering hours by the use of line block arrangements rather than full possessions.

Maintenance.

Primary maintenance requirement is for periodic jet washing to remove staining from tipped coffee/ice cream, leaf fall/bird droppings-all basic housekeeping matters.

Conclusions.

In conclusion the Mountbridge platform system offers Network Rail an ideal opportunity to address those platforms with severe stepping distance problems in a cost effective manner.

Hammond can provide free budget cost estimates for the Mountbridge system for most locations, subject to available survey information.

Site surveys can also be arranged if necessary.

Hammond are happy to discuss client specific requirements, please contact:-

Robert Williams (Project Manager)

Mobile: 07747 807552

Email: bob@hammond-ecs.com

Address: Hammond ECS Ltd, Canal Road, Cwmbach, Aberdare. CF44 0AG