



Monkey Island Active Travel Ramp, Newport

Case Study



Background

Monkey Island Active Travel Ramp scheme was undertaken to construct a cycleway/pedestrian link connecting the residential development located south of the A48 Southern Distributor Road (SDR) bridge, to the northern side of the A48. This required construction of a rampway within the footprint of land known as Monkey Island.

Delivery

The 1 in 20 gradient ramp was constructed from the northern edge of the A48 road bridge to the existing underpass, comprising five 12m, simply supported spans, supported by 'T' shaped steel and concrete column supports, connected to piled reinforced concrete foundations. The steel superstructure is composed of two main RHS chords and a grillage of longitudinal and transverse hollow section members that support a steel deck plate.

To integrate with the SDR footway, a short cantilever extends from the east landing to make the link. The east end connection required local removal of the SDR parapet, which involved close liaison with the asset managers for the SDR, Vinci, to formulate an acceptable solution for breaking through the parapet. In this location the footway was locally regraded and a road restraint barrier

installed. At the foot of the ramp the steel deck is connected to a 5.5m long concrete ramp section and a 13m long section of raised embankment ground improvement works. The ramp ties into an improved footpath that wraps underneath the SDR Bridge's east approach viaduct to link into the Lysaght Village housing estate.

The project works involved:

- Site establishment, logistics and welfare
- Vegetation clearance with an ecological watching brief
- Set up of pollution prevention measures (including Hi Tex Sediment barrier and filter and secondary back up barrier)
- Earthworks comprising cut and fill exercise
- Piled foundations and associated substructure work
- Steel column installation and ground regrading
- Steel ramp construction
- Drainage / ducts installation
- Construction of onsite footpath
- Demobilisation



Outcome

As the site is located in a SSSI, our in-house Environmental Manager produced a full Construction Environmental Management Plan (CEMP) to identify the risks and mitigations for this scheme. These were successfully managed through close liaison with NRW and a watching brief from an independent ecologist to ensure that they were happy with our methodology



and execution. Effective programming was employed to alleviate prohibitive timescales resulting from the presence of otters and nesting birds. Careful planning and timing of the works was also critical due to the tidal location of the site surroundings. We successfully employed change management, reprogramming works in agreement with the client to mitigate changes due to the on-site conditions and successfully deliver the scheme to the agreed programme.

Further environmental benefits were achieved by minimising muck away through a Centregreat developed site reprofiling solution. In addition, the client specified lightweight aggregate to mitigate future ground settlement. The client identified supplier was in Doncaster, however, through our extensive supply chain network, Centregreat were able to locally source the same product, achieving a considerable saving on site associated travel and associated Carbon emissions.

The location posed further challenges through high volumes of ground water and the difficult ground conditions that were experienced. To mitigate this, we worked with both the geotechnical designers and the piling contractor to develop the pile design from the initial outline into an achievable solution for successful CFA pile installation. This involved reassessment of the original design and a collaborative effort to mitigate the ground conditions with development of a workable solution. In addition, this close working relationship allowed for the rapid reactive development of a ground support system to avoid disturbance to the neighbouring SDR support structure, which was achieved to the satisfaction of the SDR Safety Agent. Temporary works designs for piling and crane mats were completed by the Centregreat Temporary Works Coordinator and externally verified to the client's satisfaction.

One of the key barriers to delivery of this scheme that we overcame was the incredibly restricted access which had to be negotiated by large items of plant; the available access was through a residential estate and up a cycleway to get to the works location. This was safely managed through clearly fenced, signed and defined segregation of pedestrian and site traffic areas, with marshalling of

vehicle movements and a manned access point for the site. Timed deliveries also minimised site traffic movements through the estate, reducing disruption and maximising safety for residents. A good relationship was maintained with local residents, including an initial letter drop supported by face-to-face visits in anticipation of the night works.

Further to this, the sectional lifts were completed in a single night shift thanks to the collaborative effort between Centregreat Limited and Centregreat Engineering. Working together from the project outset, our in-house teams closely coordinated through all aspects of the civils, fabrication and supply of the structure with exact precision. This facilitated successful and defect free installation, minimising disruption on the client's road network.



Client Satisfaction

The site underwent periodic internal and external audits, undertaken by our H&S and Environmental Managers, as well as the client's representative, Capita.



Comments from Stuart Christer and Michelle Clarke, Associate Director and Principal Consultant - Construction Health, Safety & Wellbeing for Capita, included:

*"The report contains minimal observations; this is a positive and highlights the **efforts undertaken by the site team to ensure a safe and compliant site.**"*

"Site set up, security and segregation measures are in place with protection of the public considered having security measures in place for anyone straying onto the site out of hours."

Client: Newport City Council
Value: £0.6M
Delivery Period: Jan 2021 – Jul 2021