



Bow Street Station

Bow Street Station in Ceredigion had been closed to trains since 1965. The £9m project to re-open it was 11 years in the planning and finally sees the station reconnected with the Cambrian Line between Aberystwyth and Shrewsbury, removing the need for local residents to travel to Aberystwyth or Borth for their nearest train station.

The project includes a 100m platform, an 8000m² 75-space car park, a new access road via a junction with the A487, bus shelter and passenger drop off / pick up area. Pedestrian and cycle access has been provided on the north side of the car park linking to the existing pedestrian and cycle network. A shared use footway / cycleway is provided between the existing residential area and the proposed car park that links to the station entrance. The scheme connects into the existing and proposed active travel routes into Bow Street, Llandre, Penrhyncoch and the nearby nearby Aber Innovation/ Aberystwyth University Plas Gogerddan Campus.

It is anticipated that the new station will generate 30,000 annual rail trips and take 466,000 vehicle miles off the road network every year, reducing carbon emissions by approximately 106 tonnes per annum and alleviating parking issues at Aberystwyth.

PROJECT DETAILS

Client: Welsh Government and Department for Transport

Agent: Transport for Wales

Contractor: Alun Griffiths Ltd.

Designer: WSP

Total Project Value: £9 Million

Project Size: 100m platform and 8700m² car park

Contract: NEC3 Target Cost Option C for Design, ECI and Main Construction Contract

Duration: 2018-21

NR Track Works: October 2018

Main Construction Contract: January 2020

Station Operation: February 2021



Funded by the Welsh Government and the Department for Transport, the new station was delivered by Transport for Wales, in partnership with Ceredigion County Council, Network Rail and Transport for Wales' key suppliers ChandlerKBS, Capita, WSP and Alun Griffiths Contractors Limited.

CONTACT

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What is an Exemplar project?

An 'Exemplar' is defined as 'something worthy of being imitated or copied' and this is exactly what we continue to seek to achieve with this programme.

Exemplars are intended to offer good practical examples of how to achieve Best Value Sustainable Construction solutions. An Exemplar considers all aspects of sustainability, including economic, social and environmental, demonstrating that the scheme is well rounded and has incorporated best practice and collaboration.

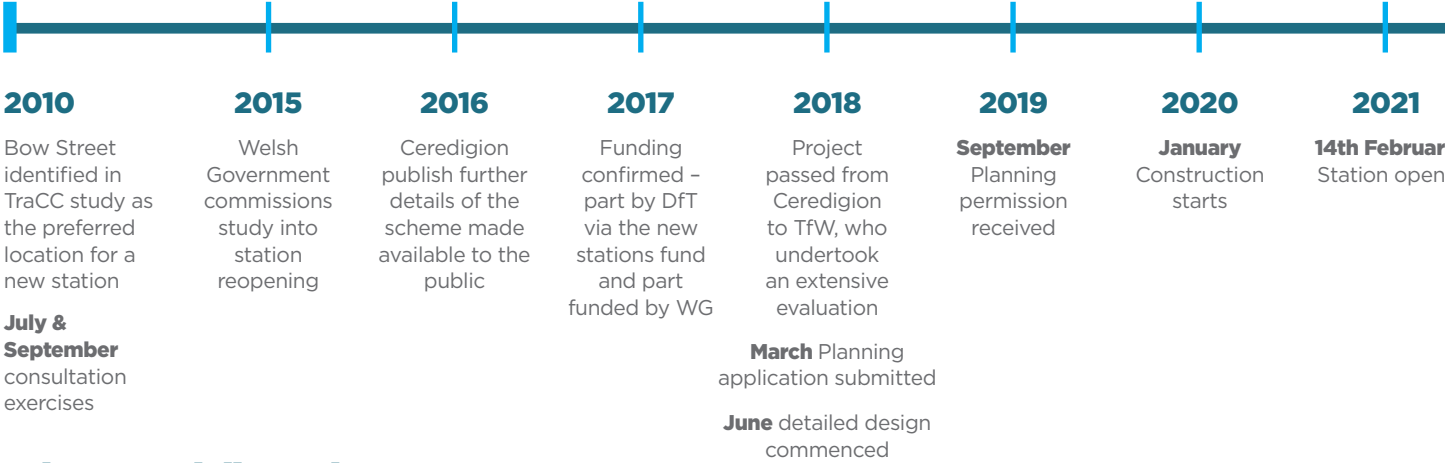
Our approach to Exemplar has been updated to reflect the Wellbeing of Future Generations Act and to provide greater

value as well as inviting a programme approach to the process. It is anticipated that embarking on the Exemplar process will, in itself, lead to higher value being obtained from a project.

Case studies are normally prepared at 3 Key Stages; Design stage, Construction phase and Post-occupation, but we have recently added a Pre-design phase to our programme.

Addressing these phases ensures that lessons learnt can be demonstrated throughout the development of a project.

Project History



What was delivered

- A single platform approximately 100m in length (operational length) and 3.5m in width
- A 75-space car park, with an additional 4 motorcycle spaces, 4 persons with reduced mobility (PRM) spaces and 3 bays for future EV charging facilities.
- A passenger waiting shelter on the platform with perch type seating.
- Uncovered, on-platform seating.
- An Information point and real-time passenger information
- A ticket vending machine.
- Close Circuit Television for the platform and car park
- New fencing around the perimeter of the platform
- LED Lighting on the platform and car park
- A two-way help-point system
- Refuge areas for wheelchair & disabled users
- Covered cycle shelter.
- Improvements to the existing A4159 junction with the A487(T)
- Pedestrian access
- Bus drop-off and pick-up point, with waiting shelter and timetable information
- Defibrillator
- DIA compliant for people with protected characteristics
- Flood attenuation area

What will make this Project Exemplar?

- Delivered on time and within budget under challenging circumstances such as Covid-19, demonstrating the benefits an integrated and collaborative team can accomplish.
- Approximately 15 new trees have been re-planted to every 1 previously identified and over 700m² of plantation including grassland and wildflower has been laid throughout the platform, demonstrating a high quality of environmental initiative.
- Two flood attenuation tanks were installed to collect and slowly discharge the water into the ground via the attenuation area where a flap valve has also been installed to prevent the site being at risk from surcharging of drains in a flood event.
- A fuel oil interceptor has been installed to capture any contaminants throughout the station to further protect the safety of the public.
- TfW branding and colour scheme has been developed and implemented.
- A standardised, adapting and transparent approach to community engagement.
- Adaptability to fluid government guidance regarding global pandemic (Covid-19) and Brexit.
- Bow Street was the test case for the installation of a defibrillator in a heated cabinet powered off the shelter lighting supply. This method is soon to be rolled out to stations across Wales following the successful trial on Bow Street.
- Almost 5000m³ of infested material was treated and handed back for re-use as fill, avoiding some 400 HGV loads of material to landfill and a similar requirement for replacement fill brought to site.

Collaborative Working

Collaboration was key to the project from an early stage. When Natural Resources Wales (NRW) expressed concerns about the potential for flooding in the car park and impacting neighbouring properties, even though timescales were tight for a redesign, the project team collaborated to successfully submit a revised plan to Ceredigion County Council in August 2019 that addressed NRW's concerns.

The revised design included the installation of two attenuation tanks with a combined volume of 561m³. This system attenuated storm flows from the car park and platform discharge via flow control chambers to a drainage soakaway ditch.

Two oil interceptors were also installed to separate any contaminants and ensure they are not discharged into the local ground water. The highway junction changed from a roundabout to a staggered T junction.

Despite the associated tight timescales and wider engagement involved, the project team successfully managed this issue and redesigned the station approach as well as the groundwater management of the station.

Early engagement with both Network Rail and Alun Griffiths enabled the Track and Platform civils construction to take place whilst the redesign of the highway junction and car park was being completed.

This collaborative arrangement was imperative to the successful delivery within the funding timescales and, despite the impact of COVID19 and consequent changed working practices, the station opened to the public two weeks ahead of schedule.

Community Engagement

Regular meetings were put in place with the key stakeholders in the early days of the project. It was a pivotal moment as the design of the station was about to change. A roundabout was a sought-after feature of the station by local stakeholders, and the team had to explain why, due to the need to accommodate the attenuation tanks, this solution was no longer viable.

During 2019, the team conducted a public drop in event, where key disability groups, in particular, were invited to come and review the proposals and plans for the new station and to hear their views. One comment was that they did not wish to have metal seating – a commitment which was delivered, along with tactile paving, Welsh braille, ramp access and disabled parking spaces. Throughout 2019, the consistent engagement with Ceredigion Council, Aberystwyth University, local community and elected representatives continued through regular meetings and collaborative discussions.

In January 2020, a virtual stakeholder event was held at the site where a project update was provided to key stakeholders alongside some early media coverage. This included a virtual tour of the site – an approach which hasn't been taken before.

Covid halted face to face discussion on Bow Street but all discussions continued online, where the team ensured that key stakeholders were invited to the monthly project updates and that more detailed updates were provided on separate calls.

With intrusive works, such as traffic management and the platform construction, letters were sent to the residents of Bow Street and the team created a specific email address for any questions or concerns. Additionally, full-page local advertising was placed in The Cambrian News and articles were published in the Welsh local paper, Y Tincer, explaining the progress made on the station and thanking residents in return. Delivery partner, Alun Griffiths ran a competition with the local school, Ysgol Rhydyppennau. All material and signage was produced bilingually.

Lessons Learned

- Throughout the project there have been a number of lessons learned that can be transferred into future projects, including;
- Ensure that all systems required for the project are in place before the project starts.
 - Include specific timescales for production of O&M information within the contractor's Works Information; need specific clauses stating when draft O&M information is to be provided
 - Introduce Staged Completion and Key Dates into the construction contract to increase efficiency of review period.
 - Improved understanding of BT/BT Open Reach/BT New Sites method of inclusion for setting up at a new site.
 - Inclusion of new connection requests for power order.

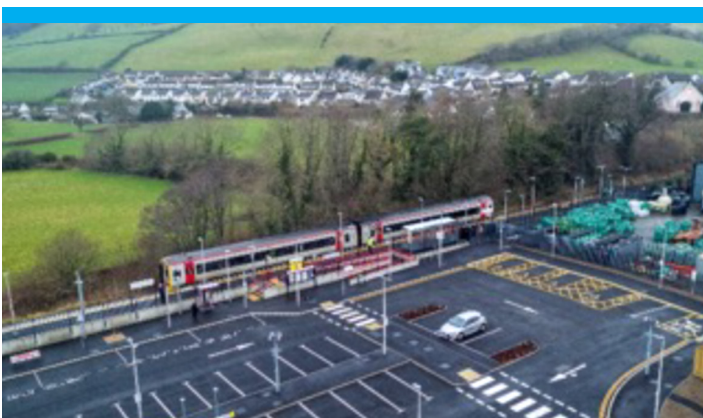


Japanese Knotweed Treatment

Almost 5000m³ of infested material was treated and handed back for re-use as fill, avoiding some 400 HGV loads of material to landfill and a similar requirement for replacement fill brought to site.

This gave savings in both time and cost within the project, but also this meant that the team could recycle and use a previously harmful material, turning it into a useful fill. The process was:

- The first stage of the process was to identify all areas of the knotweed.
- The second step was to completely remove the knotweed identified by digging 10 feet below the knotweed, ensuring that the roots had also been removed.
- Next was to compact and backfill the 13T excavator machine with the knotweed material safely, without contaminating other areas of the construction site.
- The material was then burned inside specialised containers. This rubble was then no longer invasive and could be re-used in areas of the site.

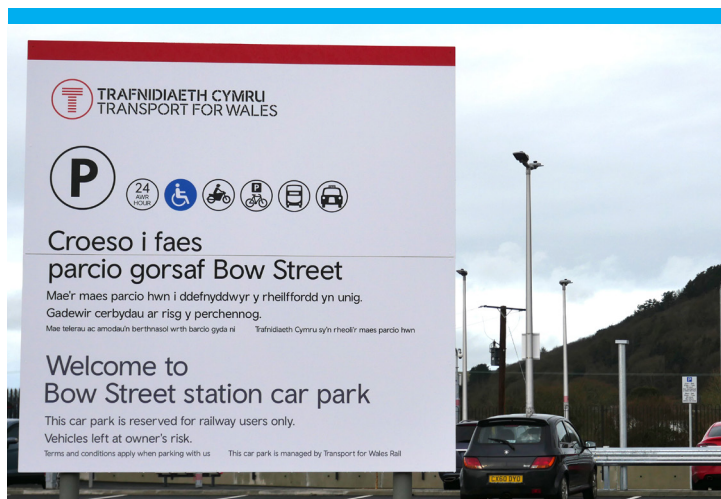


Value Engineering

- Use of PCC units for access ramp as opposed to onsite pour which had an impact on reducing noise, dust and on-site H&S risk during construction
- Use of low energy LEDs had a positive impact on reducing electricity and maintenance costs on the station
- Vibro-piles were used for the foundations, to reduce time. The installation of each pile took approximately 3-8 minutes, with the aim of 10 Vibro-piles per hour
- Car Park shelter specification changed to contrast with the Platform shelter
- CCTV specification in car park was amended.

Environmental Considerations

- Drainage improvements were made within the local area to decrease the likelihood and severity of flooding
- The development of the station encourages use of active travel; the public are encouraged to make use of the free car park, walk path or cycle shelters to access the train station
- Due to the Bow Street Station being created, the opportunity was taken to turn a redundant brownfield site into a community resource that presents a wide range of benefits.
- 5000m³ of infested material was treated and handed back for re-use as fill.
- Extensive tree planting was undertaken together with other biodiversity initiatives



Use of Local Resources

Where possible, the project used Welsh resources. This included:

- An investment of over £1.3million in Welsh businesses and suppliers.
- Over £700,000 invested in small and medium size enterprises.
- A Welsh-based Contractor employed
- All N6 material was sourced from a local quarry located within 20 miles of the site.

- Items such as Fencing, Lampposts and Shelters were all sourced within Wales.
- Other items such as PCC units, Signage and the Defibrillator were all sourced within the UK.

The Welsh Government's Economic Footprinting Tool was used to calculate economic benefits, with a Welsh Local Multiplier of £1.91 achieved for every £1 project spent. This means the construction contract was worth almost £16m to the Welsh economy.

Health and Safety

The Construction Phase of the project took place under the constraints and restrictions of the COVID-19 pandemic during 2020. Work at the site commenced 13 January, just six weeks before the first case of COVID-19 was confirmed in Wales.

As the pandemic gained a foothold through February and March, work practices at the site followed official guidance to lessen the chance of transmission, including transportation to and from site, and included social distancing and additional cleaning.

Digital communications were heavily adopted to enable liaison and planning to continue, and online shared-spaces were used for document control. While the lockdown was relaxed in May, working practices continued according to instructions to adhere to social distancing.

- These practices together with methods such as consistent temperature checks and Covid questionnaires being issued to all site members, as well as a proactive approach to minimise unnecessary contact meant that zero cases of Coronavirus were experienced on site.
- A surprise visit by HSE occurred in 2020 of which positive feedback was received on how the site was being managed throughout Covid-19.

Well-Being of Future Generations Act

The Well-being of Future Generations Act provides the ambition, permission and legal obligation to improve our social, cultural, environmental and economic well-being.

The Act requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change. With the introduction of the new interchange, further opportunities have been introduced for the community, such as connectivity/access to neighbouring communities and to encourage further usage of public transport. Furthermore, the project has been developed in a manner consistent with the aims of the Act.

CEWales has been commissioned by the FG Commissioner, in conjunction with CLAW, to develop a Project Directory framework which guides clients through the various phases of project delivery in relation to the requirements of the Act. Pilot projects are being trialled for schools with the intention of rolling it out to all buildings and civils projects. The Act will increase in prominence within our Exemplar process going forward.

TfW Exemplar Programme

CEWales has set up an Exemplar programme with TfW. Three projects, at varying stages of development, are identified for inclusion in the programme each year.

In this first year the three projects are:

- | | |
|-------------------------|--------------------------|
| • Bow Street Station | Construction phase |
| • Taffs Well overbridge | Option development stage |
| • Deeside Parkway | Option selection stage |

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