

## CASE STUDY

### SINGLE OPTION DEVELOPMENT



## Deeside Parkway Station

**Deeside Industrial Park (DIP) is a large employment area in north-east Wales. The industrial park is located approximately 10km to the north-west of Chester, and 22km north of Wrexham. The area generally is served by good highway links with the A548 and A494 located around the perimeter of the site.**

However, the local highway network around and within the Industrial Park is prone to congestion during peak/shift-change times. The nearest railway station is Hawarden Bridge, which is isolated and 2km (6km by road) from the main employment area within the industrial park.

This is of little attraction to workers due to the distance required to walk to their place of work, but who may potentially use rail services in preference to roads. The industrial park therefore currently has limited connectivity in terms of alternative means of access other than by road; single-occupancy car users is the primary method for commuting to DIP.

To improve public transport links in the area, North Wales Metro (NWM) and Transport for Wales (TfW) are working with key stakeholders; Department for Transport, Welsh Government, Liverpool City Region Combined Authority, Mersey-Dee Alliance, Network

## PROJECT DETAILS

**Client:** Transport for Wales

**Principal Designer:** Arcadis

**Ground Investigation:** AECOM

**Total Project Value:** £20 Million

Rail and Flintshire County Council in examining the option of a new station along the Wrexham Central and Bidston Line, which runs through Deeside Industrial Park.

It is intended that the station will serve as both a Park & Ride station and a local transport hub for commuters, with regular shuttle bus services around the industrial park provided by Flintshire County Council.

The Wrexham to Bidston Route is served by 1 train per hour (tph) in each direction but TfW Rail Limited (TfWRL) have committed to provide 2tph by December 2022 in each direction with aspirations of up to 4tph in each direction within the long-term strategy for Transport for Wales and MerseyRail.

## CONTACT

info@cewales.org.uk

### 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.

### What will be delivered

The site of the station is positioned to the North of DIP within the A548 ring road and located between Zone 3 and Zone 4; the option selection stage resulting in this location for the new station was the subject of an earlier Exemplar case study.

Journey time from either Wrexham or Bidston will be under 30 minutes. The daily train service is anticipated as being between 0700 to 2230 hrs. The station will be unstaffed, however CCTV security will be in operation on the platform and within the Car Park. In addition, passenger help points will be available on each platform 24 hours per day.

The station classification is defined as a DfT Category F Station (small, unstaffed station). The station consists of 2 parallel 100m long platforms suitable for TfW 3-car Class 230 rolling stock and also Merseyrail 4-car Class 777s.

A 180 space car park will be provided with 20 spaces compliant for Persons with Reduced Mobility (PRM) and 20 spaces with Electric Vehicle Charging. Access roads with bus stops are to be constructed each side of the station.

Step free access to each platform and a DDA compliant footbridge with lifts and stairs will connect the platforms, whilst the station facilities will include: waiting shelters on each platform and at each bus stop, ticket vending machines, covered cycle parking, CCTV coverage of the entire station, lighting, WiFi and customer help points.

### Collaborative working through this preliminary design stage

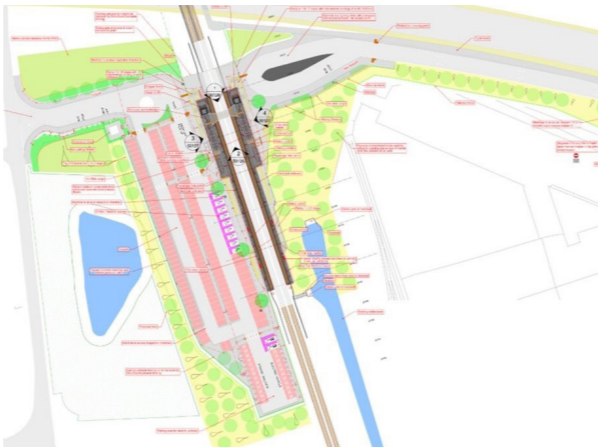
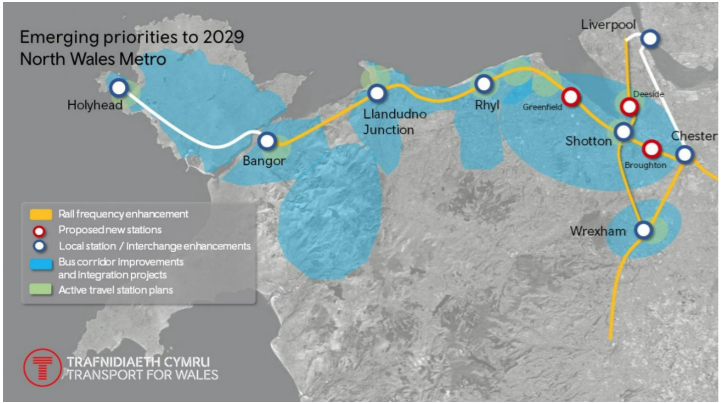
The design of the station has undergone significant refinement and detailing through a close collaborative working between Transport for Wales (TfW), Arcadis Consulting, Network Rail, and Ricardo.

This has enabled a suitable and sufficient design submission to Network Rail for the provision of an Approval in Principle (AiP) and the issuing of an Engineering Compliance Certificate (ECC) which are both significant and key documentation in the development of new railway infrastructure projects.

The Principal Designer, Arcadis Consulting, delivered a comprehensive package of designs that covered the roads, active travel compliant footpaths, footbridge architecture and steelwork, telecoms, electrical and power and other structural and geotechnical elements of the project.

These designs utilised key information about the site such as Environmental Appraisals and Assessments; Ground Investigation works and topographical surveys were undertaken by AECOM and PBH Surveys respectively.

The Highways elements covered the realignment of access roads to the east and west, with widened junctions and the addition of a combined active travel footpath route. The design also included Sustainable Urban Drainage Solutions for submission to the Sustainable Drainage Area Board (SAB).



### What will make this Project Exemplar?

#### Innovation

The structural and architectural design of the footbridge was a complex matter as this project was the first nationwide to secure AiP for Network Rail’s next generation footbridge ‘The Beacon’, with many aspects therefore needing to be resolved, such as pre-fabrication/transport of materials (in particular main steel span), constructability of the components

and the detailing of joints and fixings. In addition, the structural package included a significant 1.5m x 2m box culvert to divert an existing watercourse and as support to the car park and western platform, whilst a significant length of sheet piling is proposed as the retaining structure for the Eastern platform.

#### Environmental considerations

During Geotechnical Investigations, samples were taken and subsequently tested to evaluate the extent of material which could be re-used on site, significantly reducing the environmental impact of the project.

It is anticipated that **10,000cu.m of waste material** will be reused on site, saving the transport and disposal of not only **16,000 tonnes to landfill (equivalent to 700 lorry loads)** but also removing the necessity of importing 10,000cu.m. of virgin aggregate, avoiding significant quarrying, processing and the same 700 lorry loads for transport.

Based on the preliminary **arboricultural survey** undertaken on the site, no vegetation surveyed was considered to be Category A (trees of high quality), only one of six individual trees, four of nineteen groups of trees, and one of two hedgerows surveyed were considered to be Category B (trees of moderate quality). All remaining vegetation surveyed was considered to be Category C (trees of low quality).

The proposed development is committed to enhance biodiversity within and adjacent to the site.

During the design a range of environmental and sustainable issues were considered and are important factors in why this project is an Exemplar.

TfW have committed to using renewable energy sources to power the facilities and to aid this, local renewable energy (or micro) production could be added to the scheme; however this is dependent on land availability. Green initiatives will be considered within the detailed design stage of the project.

The scheme could potentially benefit from additional funding for renewable energy and could be used as a trial or exemplar. TfWRL are developing renewable energy waiting shelters, however these are not currently approved for use. TfWRL/NR and TfW are to decide on renewable energy methods in line with the Station Toolkit.

These initiatives follow on from the various environmental and sustainability issues considered at the option selection stage, namely:

- Assessment of Habitat Loss
- Net gain to the environment
- Reduction of embedded carbon
- Bulk purchasing of materials at programme level

## Stakeholder Engagement

**Arcadis and TfW have carried out engagement with the lineside neighbours and engaged with the wider businesses on DIP.**

TfW has appointed a Stakeholder Manager with responsibility to ensure local businesses are informed about the station proposals, how the station will integrate with the final leg of the employees' commute to work, with the Flintshire County Council-operated Shuttle bus provision and with Active Travel provision connecting all Zones of DIP, including the newly and ongoing development 'Airfields'.

The National Cycle Route 568 is in close proximity to the proposed station and connects through DIP Zones 1,2,3,4 and Airfields with direct access integrated into the station.



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## Lessons Learned

Lessons learned are being documented across each TfW project at each stage whether that be Feasibility, Option Selection, Single Option development, Detailed Design or Construction (including Entry into Service).

This enables an increase in effectiveness and efficiencies to build upon the project teams' experiences and to gather information and good practices to disseminate to other project teams.

**A good example of this is how the experiences captured on the construction of the Bow Street station, another CE Wales Exemplar, are now being used to inform several other rail projects.**

Deeside Parkway Station has been used to capture lessons learned of the single option development stage, which will also now be used to inform future projects.



## 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. This project, as part of the wider North Wales Metro programme, will greatly encourage further usage of public transport. Furthermore, the project is being developed in a manner consistent with the aims of the Act.

CEWales was 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 were trialled for schools with the intention of rolling it out in future 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 second year the three projects are:**

- **Deeside Parkway** Single option development
- **Caerphilly Interchange** Option selection stage
- **St Clears Station** Option selection stage