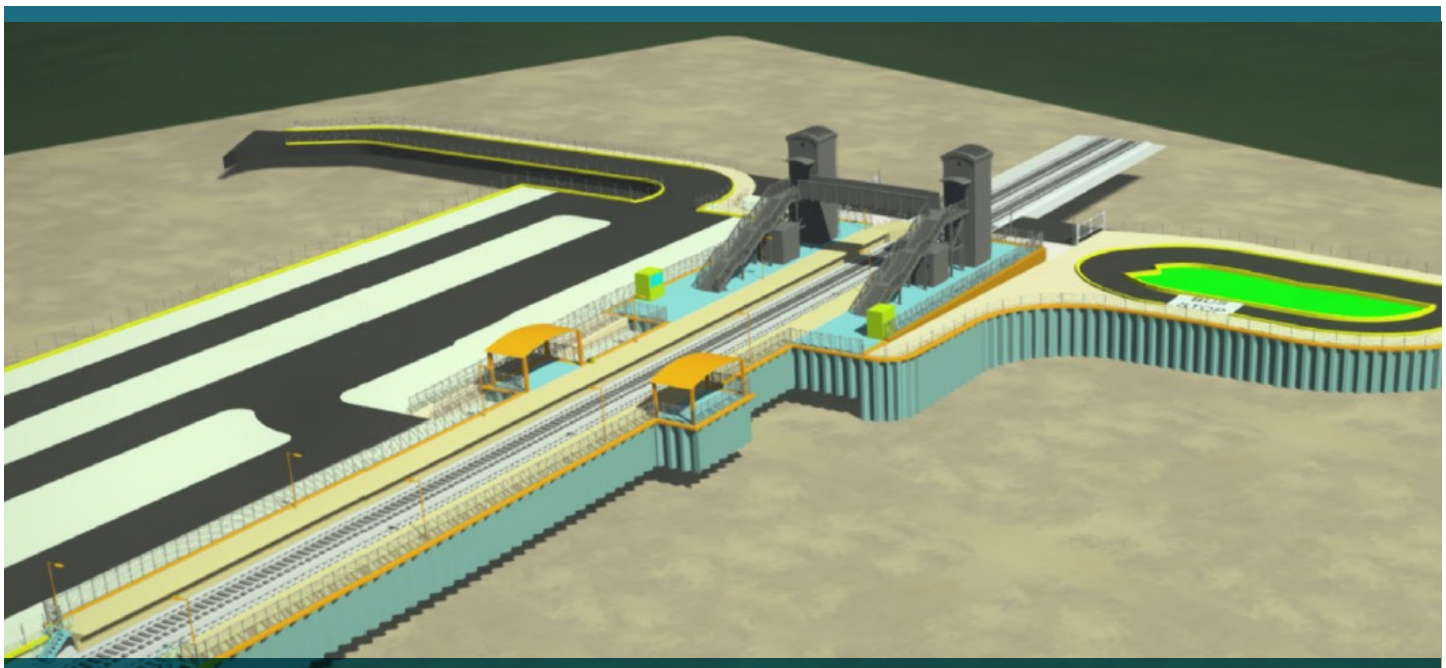
CASE STUDY
OPTION SELECTION

ADEILADU ARBENIGRWYDD YNG NGHYMRU | CONSTRUCTING EXCELLENCE IN WALES

exemplar



Deeside Parkway Station

Deeside Industrial Park is a large employment area in north-east Wales. The industrial park is located approximately 10km to the north-west of Chester, and 22 km north of Wrexham. The area generally is served by good highway links with the A558 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 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.

To improve public transport links in the area, North Wales Metro and Transport for Wales (TfW) are 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 have committed to provide 2tph by 2022 in each direction with aspirations of up to 4tph in each direction within the long-term strategy

PROJECT DETAILS

Client: Transport for Wales
Principal Designer: Arcadis
Ground Investigation: AECOM
Total Project Value: £20 Million

TRAFNIDIAETH CYMRU TRANSPORT FOR WALES

Department for Transport

Cyngor Sir y Fflint Flintshire County Council

AECOM

ARCADIS

NetworkRail

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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.

Option selection overview

Two separate locations were selected as possible locations for the new railway station, and these options were considered as part of an Options Appraisal Study. An earlier Network Rail study in 2009 had identified a preferred location for a new station; this was reviewed by TfW in 2018 and, following the identification of major problems, a follow up Stage A Feasibility Study was undertaken by Arcadis on behalf of TfW.

The output of Stage A was that Location 1 and Location 2 were the potential sites for further review due to their proximity to existing road and cycle/pedestrian access and the potential to provide an underbridge or overbridge to serve both sides of the industrial park through an integrated bus link.

An Option Appraisal Study formed the basis of the selection stage for review under the Exemplar programme. The study analysed and reviewed station options for consideration for both Location 1 and Location 2. At an Options Selection workshop with Transport for Wales, Welsh Government, Network Rail, Flintshire County Council and Arcadis, an analysis and review session for the four viable options was undertaken.

Three of these options were sub-options of the Location 1 emanating from the Stage A feasibility study with the fourth being at Location 2. As a result of the detailed review, Option 1A was selected by the stakeholders as being the option to take forward to the next stage of single option development.

Station Requirements

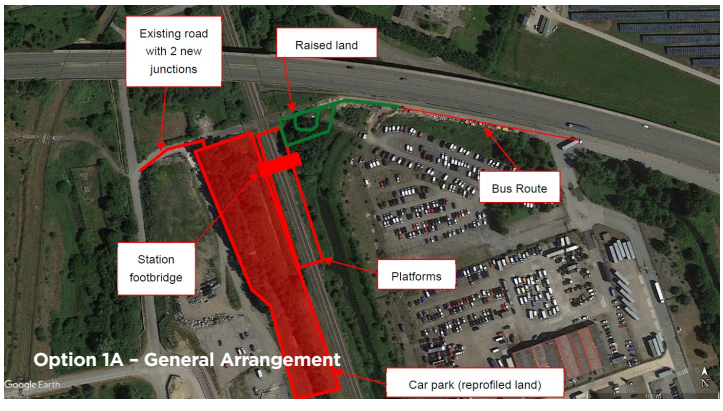
The station classification had been defined within the TfW remit to be a Category F Station (small unstaffed station). The outline specification within the TfW remit for this station (and associated station infrastructure) identified the following as a minimum:

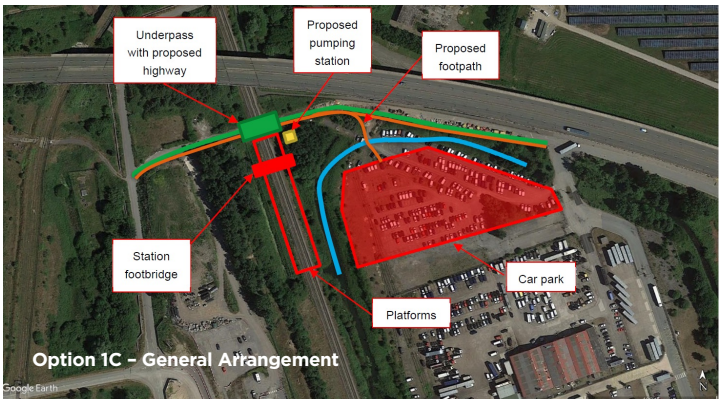
- 2no. x 100m platforms to accommodate 4no. 23m rolling stock
- Platforms to be a minimum of 3m width
- Waiting shelters on each platform
- Persons with Reduced Mobility (PRM) compliant ramped access to all platforms
- A PRM compliant footbridge
- CCTV system for the entire station
- 2no. Customer Help points
- Covered cycle shelter
- 200 parking spaces (approximately)

The daily train service is anticipated as being from 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.

Although not part of the initial review, it was noted that National Cycle Route 568 is close to the proposed station locations and access will be easily integrated into the station.

From a strategic point of view, the selected option is to include integration with the existing pedestrian and cycle routes, with direct access being provided to and from the station footprint.





What will make this Project Exemplar?

The Option selection process

This option selection stage of the Deeside Parkway Station is an Exemplar project due to the open and thorough way the options have been addressed given the wide range of constraints, consultation with stakeholders and the appreciation of the wider regional social gains. The Options appraisal assessed the options against several economic, social, and environmental criteria.

While the Network Rail GRIP Process and TfW Plan of Works for delivering projects is a well-structured and defined methodology, it is the combined rail and wider sustainability criteria that now need to be balanced for such projects in Wales. This project demonstrates that balance in an effective manner.

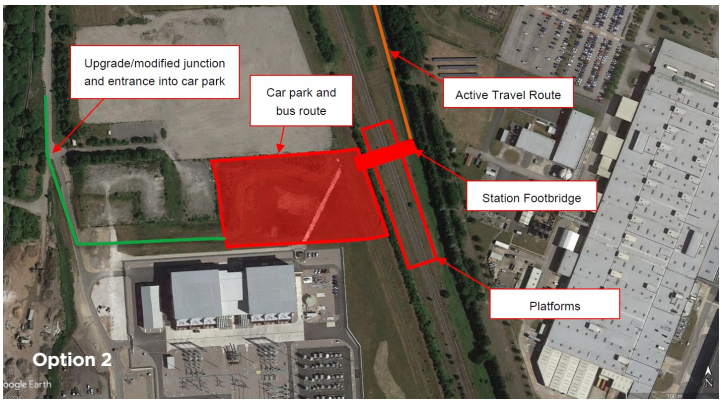
To determine the Scheme Option Selection, each option was reviewed setting out advantages, disadvantages and costs and a SWOT analysis was undertaken at the option selection workshop. Stakeholder comments and feedback were an important element in the location selection.

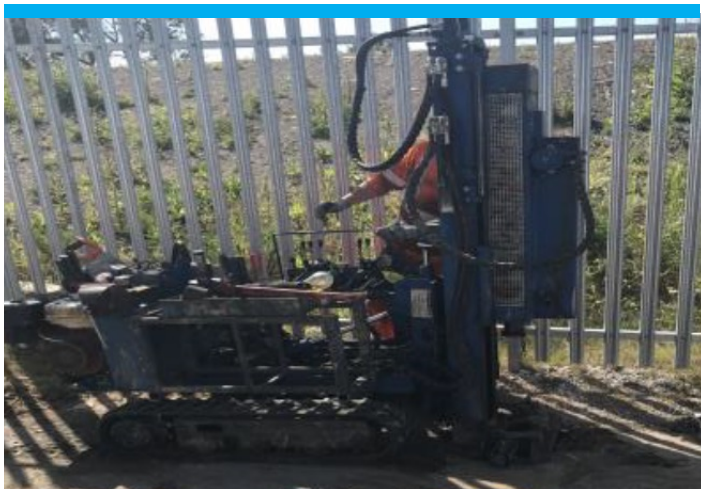
A series of categories were scored: capital cost, maintenance/whole life cost, buildability, land ownership, safety, environmental impact and sustainability, impact on existing assets, construction programme, connectivity to roads and active travel, employment area accessibility, whether the option was inclusive and accessible and, most importantly, against the WelTAG criteria.

Evaluation matrix

A comprehensive, weighted matrix was produced to come to a considered and auditable selection. The range and breadth of the categories ensured that the selection of the option for further development could be robustly explained as the overall process progresses through Single Option Development, Statutory Processes, Detailed Design, Construction and Entry into Service.

DEESIDE PARKWAY OPTIONS	OPTION REVIEW SCORING								
		Option 1A		Option 1C		Option 1E		Option 2	
Criteria	Weighting	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital Cost	13.00%	4	0.52	2	0.26	2	0.26	4	0.52
Maintenance/ Whole Life Cost	5.96%	4	0.24	2	0.12	3	0.18	4	0.24
Buildability	8.56%	4	0.34	2	0.17	3	0.26	4	0.34
Land Ownership Safety	5.50%	5	0.28	2	0.11	2	0.11	4	0.22
Safety	11.62%	4	0.46	2	0.23	3	0.35	3	0.35
Environmental Impact & Sustainability	3.52%	3	0.11	3	0.11	3	0.11	4	0.14
Impact on Existing / Other Assets	6.12%	4	0.24	3	0.18	3	0.18	2	0.12
Construction Programme	6.57%	4	0.26	2	0.13	2	0.13	4	0.26
Connectivity (roadsactive travel)	8.87%	4	0.35	4	0.35	4	0.35	3	0.27
Inclusive and Accessible Design	10.86%	4	0.43	2	0.22	3	0.33	4	0.43
Employment area accessibility	8.56%	4	0.34	4	0.34	4	0.34	4	0.34
WelTAG Criteria	10.86%	5	0.54	2	0.22	2	0.22	4	0.43
TOTAL	100.00%		4.13		2.44		2.81		3.67





Stakeholder Engagement

Stakeholder engagement is a key aspect of the study and stakeholders have been asked for their feedback on the proposals. A questionnaire was distributed to the businesses of the Deeside industrial estate in mid-2020 to gather opinions on the proposed Deeside Station.

Key Stakeholders engaged through the development of the project were:

- Welsh Government
- Network Rail
- Flintshire County Council
- Department for Transport
- TfW Rail Limited
- Other TfW departments

Lessons Learned

Lessons learned are being documented across each TfW project at each stage (Feasibility, Option Selection, Single Option development, Detailed Design, Construction and Entry into Service) to enable an increase in effectiveness and efficiencies to build upon the project team's experiences and to gather information and good practices to disseminate to other project teams.

Deeside Station has been used to capture lessons learned of the option selection stage.

Sustainability

During the appraisal a range of sustainability issues were considered, including the following:

- Assessment of habitat loss
- Net gain to the environment
- Reduction of embedded carbon
- Bulk purchasing of materials at a programme level

Renewable Energy

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, subject to land availability.

The scheme could potentially benefit for 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.

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 will encourage further usage of public transport. Furthermore, the project is being 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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