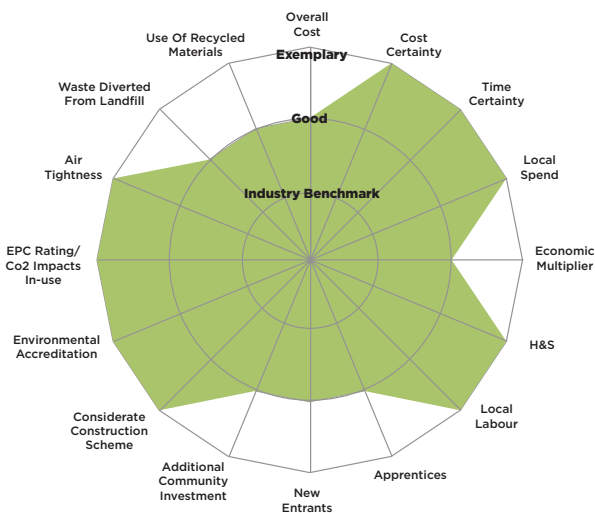




## Railway Training Centre of Excellence, Nantgarw



**The New Training Centre of Excellence at Nantgarw forms part of a wider Estates Reconfiguration and Rationalisation strategy and will deliver a training centre for the railway industry to service the South East Wales region and the rail expansion and upgrading programme which represents a potential investment of £10b over the next 10 years**

The project will develop new training facilities to address the current and future needs of learners and improve the post 16 take up of educational and training opportunities, thereby improving the performance of the College and safeguarding its long term viability.

The work comprises the design and construction of the new facility within short timescales and a constrained budget.

The need for the facility to be operational by September 2015 led the Client to require early contractor involvement as part of an integrated project team to better manage risk and value.

The project is required to achieve BREEAM Excellent accreditation and falls under new Welsh part L requirements.

The key challenges in this project were:

- Delivering to short timescales
- Managing external funding condition
- Cost certainty
- Offering opportunities to enrich the curriculum at the college

### Project Duration

In terms of it's time-line, the project has a 4 month design phase, 6 month construction phase and handover is expected in September 2015.

## PROJECT DETAILS

<b>Client</b>	Coleg y Cymoedd
<b>Project Manager</b>	Mott MacDonald
<b>Architect</b>	Lawray Architects
<b>Structural Engineer</b>	Bingham Hall Partnership Ltd
<b>Contractor</b>	Interserve
<b>M&amp;E</b>	McCann Building Services
<b>Value</b>	£3,200,000
<b>Project size</b>	800m <sup>2</sup>
<b>Contract</b>	NEC Option A
<b>Procurement Strategy</b>	2 stage design and build with ECI

## KEY CONTACT

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**ADEILADU  
 ARBENIGRWYDD**  
 YNG NGHYMRU

**CONSTRUCTING  
 EXCELLENCE**  
 IN WALES



## What is an Exemplar project?

An Exemplar is defined as **'something worthy of being copied'**. The Exemplar programme has been developed to help identify the reasons why certain projects are successful in a standardised, quantifiable way, and to share with the industry what enabled these successes.

An Exemplar considers all aspects of sustainability, including economic, social and environmental. Projects must demonstrate that they have been innovative in one or more of these aspects in a way that exceeds normal industry practices, while achieving at least minimum standards in all other areas of the project.

This is to demonstrate that the scheme is well rounded and has not sacrificed one aspect to be successful in another, while also incorporating best practice measures that can advance the state of the industry. An Exemplar project therefore reflects the ideal industry goal of achieving a scheme's primary function aims in a sustainable way, at acceptable costs.

### Case studies are prepared at 3 Key Stages Post - Design / Post - Construction Post - Occupation

This ensures that lessons learnt can be demonstrated throughout the development of the project.

## What will make the project successful

- A clear strategy from the client
- Early supply chain engagement to better manage risk and value
- The establishment of an integrated delivery team prior to submission of a planning application, including the client for consistent and quick decision making to meet short timescales

## Notable Achievements

- The client has developed a clear procurement strategy to better manage risk and value and to deliver specific outcomes based on the early engagement of an integrated project team
- Performance of the team is being monitored through a comprehensive set of KPIs
- A comprehensive supply chain strategy will ensure that local supply chains are supported
- The centre will facilitate the development of skills in the rail sector which will support the future prosperity of local communities
- An Accident Incidence Ratio (AIR) of zero is being targeted
- A BREEAM Excellent rating is being targeted
- Whole life costs and reduced carbon impacts are being managed through a focus on high insulation values and renewable technology
- Reduction in material waste through design and product selection

## Economic Considerations

**The client has developed a clear procurement strategy to better manage risk and value and to deliver specific outcomes based on the early engagement of an integrated project team**

The client has shown clear leadership by shaping the procurement process to deliver specific outcomes.

The project is being progressed in a collaborative manner through an integrated team established from the earliest stage in the project's development. The SEWSCAP framework has been utilised to engage a main contractor and design team on a 2-stage design and build basis.

This, considered with an NEC Option A form of contract will give greater assurance to the client. The team was selected for its wealth of experience and expertise with educational projects and the ability to work efficiently and effectively to achieve the project milestones and objectives.

The client is actively involved in the development phase to minimise project risks to support the "lump sum" approach to provide better value for the whole team. Risk and value management processes are applied throughout the project development process with the entire team involved in managing changes and ensuring that certainty is maintained with regards to cost, time and quality.

Regular risk workshops were held with the client team. High risks were identified and targeted to be reduced. This involved extensive survey work as well as engagement with the supply chain to produce a detail design at an early stage. Early consultations with the Local Planning Authority also minimised risks and ensured speedy progress through the planning process.

End users and key stakeholders are involved throughout the project development process. This will ensure that the final product achieves their requirements and aspirations and also minimises risks in the latter stages of the project.

Good quality has been maintained as a result of close collaboration within the design team and end user engagement. This will ensure that the final product is fit for purpose and compliant with all relevant regulations. This has been achieved by regular, productive design team meetings and end user workshops as well as consultation with the supply chain to ensure build ability and program certainty.

### **Performance of the team is being monitored through a comprehensive set of KPIs**

KPI's set out in the SEWSCAP framework will be measured throughout the duration of the project.

Cost certainty, time certainty and local spend have been specifically targeted as they are all key deliverables for the client. Time is crucial as the facility needs to be open for September 2015, which is the critical opening date wof autumn term.

Through the procurement of the supply chain, the team are targeting opportunities to deliver maximum value for the Welsh pound and are strongly encouraging subcontractors to employ and train apprentices, previously unemployed people and other disadvantaged people on the scheme. These will be monitored at progress meetings with subcontractors.

An Accident Incident Ratio (AIR) of zero is the goal of the team and a Considerate Constructors score in excess of 36 has been targeted.

Environmentally, BREEAM Excellent under the 2014 scheme as well as an EPC rating of A+ and an air tightness rating of 3. The thermal model has been established on this basis and this performance is required to achieve the building regulations.

### **A comprehensive supply chain strategy will ensure that local supply chains are supported**

Significant emphasis is put on community benefits such as using local labour and companies to deliver the scheme. 85% of order values are to be placed with companies based in Wales.

The contractors established Regional Supply Chain has been developed over time to ensure members share values, maintain the highest standards in health and safety, environmental quality, supply chain management and ability/willingness to add value.

Primary Supply Chain Members are drawn from a strategic/preferred suppliers database and demonstrate collaborative working compatibilities, a proven record of supply chain management and an ability to manage value.

Registered suppliers are the general pool of companies who cover non-critical trades, but wish to be considered for any future opportunity that may arise. The sustainability policy mirrors Welsh Government directives, local SME's being encouraged to register if not already on the database. 'Meet the Buyer' events and Sell2Wales adverts ensure opportunities for review/introduction of new SME's.

Rigorous procedures within the team's externally accredited integrated business management system covering the specific placing of subcontract orders. Before appointment to the database, a pre-qualification questionnaire ensures subcontractors understand and meet requirements, including health and safety, environmental and quality issues. Support is provided by the main contractor. The completed questionnaire is evaluated against a scored marking system.

## **Social Considerations**

### **The centre will facilitate the development of skills in the rail sector which will support the future prosperity of local communities**

Currently there is no specific railway training centre of this calibre within the Welsh region. The centre will facilitate the training and up-skilling for the current and future generation of railway sector workers as well as those currently working in the sector that may not be qualified and are seeking to gain qualifications. In addition there are a number of transferrable skills such as building works trades and electrical trades which can be migrated across into the railway environment and this training facility will help achieve this.

During construction, the team will invite staff and students from the college who are studying construction related courses to visit the site on a regular basis and give them regular tours and presentations on the modern building process.

### **An Accident Incidence Ratio (AIR) of Zero is being targeted**

All site employees attend health and safety training courses to ensure that current legislation and best practice is followed. Depending on their management level mandatory courses for both staff and subcontractors include CITB Health and Safety Awareness training, CITB Site Supervisors Safety Training Scheme and the CITB Site Management Safety Training Scheme. Technical safety modules are provided as top up training for those with specific responsibilities such as COSHH Co-Ordinator, Fire Co-Ordinator, Temporary Works Co-Ordinator etc. Annual safety update training sessions covering developments in legislation, industry best practice and company systems and processes are also provided.

The main contractor provides a dedicated Safety/Sustainability Advisor to advise and guide site staff and supply chain of any changes to health and safety policies and best practice as well as advising on training courses and HSE guidelines, e.g. recent 'mask' face fit testing.





## Environmental Considerations

### A BREEAM Excellent rating is being targeted

The scheme is being assessed under BREEAM 2014 with a target of excellent. This will be delivered using the BREEAM guidelines for environmental assessment as well as complying with part L2a of the 2014 Welsh building regulations. The BREEAM delivery is being managed very carefully throughout the process by the Design Manager in conjunction with an external specialist BREEAM consultancy. At project inception, a workshop was held with all stakeholders (designers, contractor and client) to establish credit that could be targeted and achieved as well as informing the designers of the parameters in which they are designing. Regular updates to the BREEAM process was communicated, as well as advice on achieving the design stage credits early in the process.

A Design Manager (DM) is tasked with steering the BREEAM process and brings considerable experience and understanding of BREEAM acquired from previous projects. Part of the DM's remit is to assess how design changes affect the credits targeted and advise if they are compromised. The DM liaises closely with the site team and advises the site team what credits have been targeted and what is required in order to reach the criteria for the credits. The DM attends relevant supply chain letting meetings (particularly M&E) and will communicate the commitments and evidence required in order to achieve the post construction score.

### Whole life costs and reduced carbon impacts are being managed through a focus on high insulation values and renewable technology

The design team and client committed to provide a building that will deliver significantly enhanced U values than required under the new Part L2a section of Welsh Building Regulations. U values for the roof and walls are 0.18, the floor will be 0.22 and the triple glazed windows have a U value of 1.3. An air leakage value of 3 m<sup>3</sup>/m<sup>2</sup>h is targeted, through careful detailing, product selection and close control of workmanship on site.

The primary reasons for the enhanced U values are to reduce heating costs for the building as well as benefitting the environment with a smaller carbon footprint. The use of high spec triple glazed windows also contributes to the overall thermal model ensuring that the building has very low energy costs. Whilst this equates to an increase in material costs for walls and glazing systems it ensures that the potential requirement for a CHP unit can be discounted, thus delivering an overall saving in capital costs as well as whole life costs. Air quality is being controlled by an integrated natural ventilation system that can be either automatic or end user operated.

The roof and structure have been designed to accommodate a photovoltaic array comprised of 50 solar panels. The array will feed into the national grid, generating income for the College and offsetting running costs for the building.

### Reduction in material waste through design and product selection

The generation of excessive waste is being minimised via standardisation in the sizes of certain elements through the design process. These include wall and roof design to avoid off-cuts in insulation panels and plasterboard sheets. Product knowledge and engagement with the client's facilities management team to establish preferred suppliers is helping to reduce wastage and avoid lower quality products and materials.

Working closely as a team, lifecycle costs are being reduced and low maintenance materials are being specified to ensure reductions in client FM resources. The design team targeted higher U-values and a lower air test value than regulatory requirements to negate the requirement for a CHP unit. A natural ventilation strategy was also targeted to reduce carbon impacts.

Workshops were established between the site team and the design team to ensure that site findings and potential improvements in the process or product selection can be found and used on future projects.

