

Tata Stores, Visitor and Training Centre

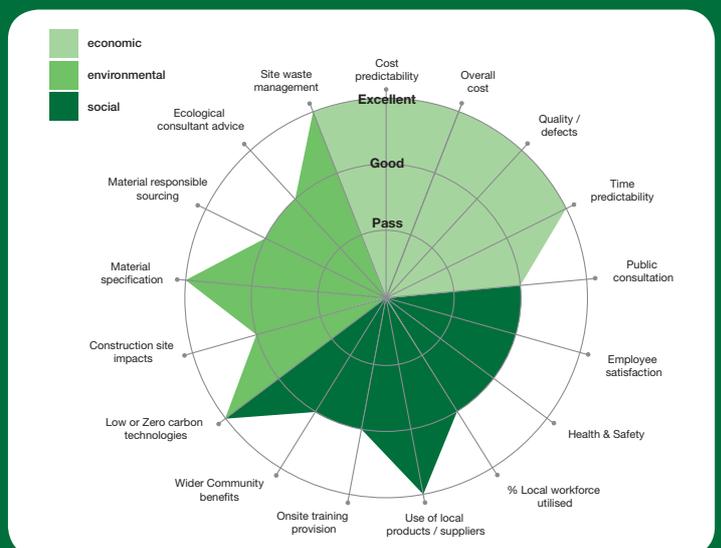


Tata Steel are demonstrating their commitment to steel making in South Wales by developing a high quality 21st century Stores Facility, an Apprentice Training Centre and a new Visitor and Heritage Centre at their plant in Port Talbot.

The construction of the new Port Talbot Distribution Road requires a new site access for the Steelworks site and the demolition of the existing stores building. This has provided an opportunity to redesign the site entrance to improve the overall image of the steelworks and provide new facilities.

The scheme is already demonstrating how strong leadership from Tata combined with an integrated delivery team working together from an early stage can deliver high-quality and aesthetically-pleasing facilities to a tight timescale and budget, while gaining significant social and environmental benefits.

The works were tendered as a single package to save time and allow for standardisation and economies across the projects. Tata procured the works under an early Design and Build arrangement, using a bespoke Tata form of contract, with the successful team being responsible for taking the concept through design development, planning, construction and commissioning. A key driver for the client has been the desire for the new facilities to make a positive statement to the local community, so while the delivery team submitted a competitive bid, the quality of the team and its ability to produce a visually attractive design was also vital to the client.



project details

client:	Tata Steel
architect:	Powell Dobson Architects
structural engineer:	Jacobs
building services:	McCanns
contractor:	Dawnus
value:	£12.2 million
project size:	Stores 10,275m ² , visitor centre 415m ² , training centre 2,550m ²
procurement strategy:	Early delivery team input
contract strategy:	Design and Build

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 factors. 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 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

- An engaged, 'hands on' client – Tata Steel has shown considerable commitment to the project and given clear direction to the supply chain
- Early establishment of an integrated team – a whole team approach has been created to take the client's concept through planning, design development and construction
- Focus on whole life costs rather than lowest initial price – this applies to standardised components as well as the use of technology to harness energy from the steel plant to operate the buildings
- Team commitment to continuous improvement – packaging three projects into one has provided continuity of workload, an incentive to innovate and a desire to learn from other projects

notable achievements

- Remaining on budget and time will be critical, so actions have been taken up front that will streamline the construction process
- Planning approval was granted in the minimum statutory timescale permitted through the team's collaborative effort
- A 3 month period from delivery team appointment (at Pre-planning stage) to start of construction
- Quality in delivery is being closely monitored to ensure high standards are achieved with the build
- BREEAM Excellent and Outstanding ratings are anticipated at nominal cost uplift
- Use of on-site energy sources will offset the new buildings' CO₂ emissions by 100%
- Lifecycle impact of materials was considered from the outset, with a view to extending lifespans, minimising maintenance requirements and incorporating recycled materials
- Incorporation of Tata Steel products into the design - steelwork, cladding and metal decking
- Site-generated waste has been forecast and planned for. It is anticipated there will be zero waste to landfill
- The project aims to create local employment opportunities and support local suppliers
- Tata intends to allow the local community use of the new facilities

economic considerations

Remaining on budget and time will be critical, so actions have been taken up front that will streamline the construction process

A degree of standardisation has been applied across the three buildings (eg cladding systems, glazing, floors, detailing, colour schemes), leading to improved certainty on costs and a simplified procurement process. This, together with the continuity provided by the presence of a single delivery team on all three schemes, has enabled the anticipated handover date to be brought forward.

The cost of products and materials for the stores building was agreed with suppliers at the outset. However, partly due to the continuity of work, suppliers have been willing to maintain the same costs for the training and visitor centres.

The team has considered how to minimise whole life costs. For example, use of high-quality cladding products that enhance appearance and require no additional finishes will reduce maintenance requirements over the life of the building.

The client has adopted a 2-stage 'change order' process to streamline decision-making and ensure there are no unnecessary hold-ups in delivery. Decisions made 'in principle' by the client will only be signed off once actual costs are confirmed. The aim is to allow the delivery team to manage potential changes relatively quickly, while ensuring the client has confidence in the process.

Planning approval was granted in the minimum statutory timescale permitted through the team's collaborative effort

This was achieved through close working relationships between the client and design team, open, early communication, and continued negotiation with the local authority planners and stakeholders during consultation. The support of the local authority was essential in gaining planning approval within 22 days.

Powell Dobson set up a team consisting of a director and two project architects to work on a robust planning application that reduced the number of pre-start conditions imposed by the local authority.

Quality in delivery is being closely monitored to ensure high standards are achieved with the build

The client is closely involved in quality management due to its experience with the steel products and systems used in the design and with large construction projects generally. For example, inspection plans are coordinated by a Tata project engineer who will check on aspects of the scheme as they are completed.

The delivery team welcomes this scrutiny, which supports its own quality assurance processes and will ultimately lead to a high-standard end product.

social considerations

The project aims to create local employment opportunities and support local suppliers

By encouraging the employment of people from within a 30-mile radius of the site, the project will help boost local employment and business opportunities as well as reducing transport miles and carbon emissions associated with transport.

The contractor intends to use this scheme to benchmark local employment, using the Value Wales measurement tool, to enable it to set targets on future projects. The project team also hopes that using local suppliers will promote reliability through the attraction of repeat business and improved delivery turnaround times.

The project team is liaising with the local authority as part of its 'work programme' to identify potential local employees. It is anticipated that new jobs will be created in the heritage centre, the stores and the training centre once the buildings are completed.

Tata intends to allow the local community use of the new facilities

The training centre will be used to teach young apprentices skills for the future and craft competency to Tata personnel, while also offering teaching and conference facilities that can be used by the local community. The existing training facilities are located far inside the main Tata site boundary, making public access impossible. However, the new building has been designed and located to allow and encourage community use without compromising site security, even outside core business hours.

The heritage and visitors centre will document the history of steelmaking in South Wales and act as an interesting archive for the benefit of the wider public. It will also provide a welcoming experience for business visitors to the site.

The development will also improve the immediate environment for nearby households, since it will create new green areas and planting adjacent to the site entrance where there would previously have been industrial railway sidings of limited ecological value.

environmental considerations

BREEAM Excellent and Outstanding ratings are anticipated at nominal cost uplift

The client initially requested Very Good BREEAM ratings across each of the buildings within the development. However, early BREEAM workshops and 'added value' discussions with the whole project team, including the BREEAM assessor, allowed further development of the building designs in respect of environmental features. The team realised that additional BREEAM credits could be targeted, meaning that Excellent and Outstanding ratings could be achieved at a relatively small cost uplift (anticipated at 1% for the stores, 2% for the training centre and 5% for the visitor centre). The chosen energy strategy (see below) should make a significant contribution to the BREEAM rating. Pre-assessment scores are 75.66% for the training centre, 85.63% for the stores and 91.42% for the visitor centre.

A number of Innovation Credits were also sought to boost the overall BREEAM score. The team appointed McCann & Partners, a BREEAM-accredited independent building services consultancy, at the earliest design stages to help ensure the highest feasible rating would be achieved.

Use of on-site energy sources will offset the new buildings' CO₂ emissions by 100%

The new scheme will utilise heat and power generated by the steelmaking process on the Tata site, which will offset primary energy usage. Steam from the blast furnace will be routed to the development and converted into low pressure hot water (LPHW) to provide hot water for the stores and training centre, while power will be generated by converting flared gas from the basic oxygen steelmaking (BOS) plant into electricity. This will generate 10MW extra capacity that will be fed into the electrical grid. Alongside this, the new buildings were designed to reduce energy demand in line with the requirements for a BREEAM Excellent rating.

Lifecycle impact of materials was considered from the outset, with a view to extending lifespans, minimising maintenance requirements and incorporating recycled materials

Tata's profiled panels, metal decking and steel stairs are extensively used across the scheme. Recycled glass worktops and splashbacks are utilised, along with tiles that can be sanded smooth when scratched to avoid the need for replacement. Exposed polished or power-floated concrete floors will be used throughout to eliminate the need for floor finishes that would have a high maintenance and lifecycle impact. The steelworks operates its own recycling facilities and crushes and processes concrete from other areas of the site for reuse as aggregate in new works. Any excess material will be used to raise the site levels as required and form a working piling platform in a single operation.

Site-generated waste has been forecast and planned for. It is anticipated there will be zero waste to landfill

The design team has taken steps to design out waste through careful detailing, maximising whole product use, offsite construction techniques and minimising the different types of products used. The team will work closely with the client to make best use of Tata's on-site materials recycling centre, and will encourage the reuse of offcuts and surplus materials across the site to avoid the generation of waste.

Dawnus has its own waste management company, Construction Recyclate Management, which is used to maximise recycling and store materials for reuse (exchange between projects). Waste streams will be segregated on site to facilitate future reuse.