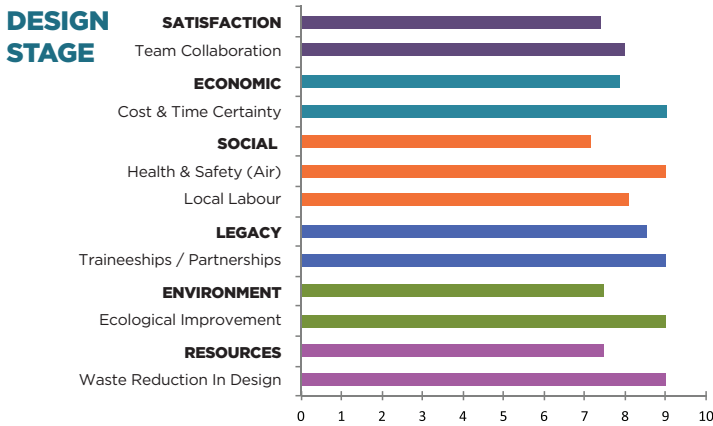




## UWTSD SA1, Swansea Waterfront



**SA1 Swansea Waterfront academic building and library will be located on the peninsular site end of Kings Road in Swansea. The development is part of a wider estates reconfiguration for the university. It will support the university's aim to inspire individuals and develop reflective graduates and practitioners who can make a difference in society in the forthcoming decades.**

The intention of UWTSD and the team is to establish purpose-built facilities for learning, teaching and applied research; as well as social, leisure and recreation space on a previously disused site adjacent to the Prince of Wales Dock. This first phase of work on the university site comprises of the design and construction of two new facility buildings and a library. The contractor, Kier Construction Western and Wales, have been procured under the SEWSCAP framework, utilising an initial pre-construction services appointment to develop the design and market test packages to achieve an agreed contract sum.

The scheme includes developing a new faculty of architecture, computing and engineering and a new campus library with the associated public realm works and Constructionarium and Access Hall in the Swansea Innovation Quarter SA1. Construction is planned to commence in autumn 2016 with occupation scheduled for September 2018.

### PROJECT DETAILS

<b>Client</b>	University Wales Trinity St David (UWTSD)
<b>Architect</b>	Stride Treglown
<b>Contractor</b>	Kier Construction Western and Wales
<b>Value</b>	Circa £30m
<b>Project size</b>	Academic Building (FLEXI and TECH) 10,109m <sup>2</sup> ; Library 2,705m <sup>2</sup> ; Access Hall 2443m <sup>2</sup>
<b>Contract</b>	NEC Lump Sum (option A)
<b>Duration</b>	Planning Jun 2016; Start on Site - Oct 2016; Hand Over - May 2018 for University start Sept 2018
<b>Procurement Strategy</b>	Mini Competition under SEWSCAP2 Framework



### KEY CONTACT

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## 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 this project Exemplar?

- Collaboration & awareness of risk: Kier offered an additional 6 weeks to the RIBA stage 3 brief and approval period to de-risk this phase and provide a better early understanding of affordability, therefore maintaining cost and time certainty
- Onsite training and engagement through Construction Wales Innovation Centre (CWIC). A unique CITB funded project for Wales that will respond to employer needs across the construction industry at all levels
- Maximising the value early contractor and services involvement during the pre-construction phase. This includes early engagement of the specialist supplier and a mini tender process for the M&E to enable early specialist input into the design, cost, programme and maintenance, thus de-risking one of the major work packages
- SAIR driving the improvement in safety culture and reduction in incidents through the measuring of 'Significant Accident Incident Rate' rather than traditional 'Accident Incident Rate'
- Addressing whole life cost issues to reduce future running costs, focusing on long term maintenance specific to the coastal environment and an integrated FM offer
- The use of level 2 BIM using BIMXtra to provide the equivalent of a level 2 COBie data drop for M&E and FFE
- Carbon monitoring and foot printing.

The above will be monitored through a comprehensive set of KPIs. These will be based upon the SEWSCAP Framework, CEW and site specific KPI's. These will be reported against at design stage, construction phase and post-occupancy stage through the Exemplar programme.

## Notable Achievements

The team have dealt with many key issues facing the project and industry as a whole:

1. Maintaining cost and time certainty, early understanding of affordability and programme allowed input from the Princes Foundation Architect and the Design Commission for Wales
2. Reducing risks prior to construction; transparent approach with joint undertaking of survey work
3. Streamlining the procurement process to reduce cost, red tape and to engage more with the market place
4. Addressing whole-life cost issues to reduce future running costs, focusing on long term maintenance - specific to the coastal environment, legacy issues and an integrated FM proposal for Soft Landings and operation
5. Maximising the potential for community benefits by having a well structured education/skills focused community engagement plan in place, carefully aligned to the university's core objectives
6. Education initiatives programme developed for extent of project, provision of a position for an FM graduate to be employed from the design stage through construction with the opportunity for employment and the FM contractor/client following completion
7. Reducing the volume of waste generated and the percentage of material going to landfill.

## Environmental Considerations

As a university focused upon sustainability, the buildings will be designed and constructed in a visually pleasing and sustainable way; with green spaces being developed to create an inspiring social environment for students, staff and the wider community.

A principle of betterment to current standards is being pursued where the building is being designed to provide adaptability to future technologies and policies, through the provision of flexible plant and service distribution allocation, with the view to enabling minimal impact retrofits to be carried out.

Other betterment areas include:

- Reducing G values on glazing below standard 0.4 to 0.3
- Provision within the design of the curtain walling system for the future fixing of Brise Soleil
- Efficient lighting and systems have been used to help reduce the primary energy consumption over the target primary emission rate and carbon emissions, over 2014 regulations
- Inclusion of 600m<sup>2</sup> with space for 900m<sup>2</sup> of PV panels

The project is currently being managed through BREEAM 2014, with the use of Kier's 4 Projects (4P) system to attain Excellent. The 4P system enables all of the design team to access and provide information for regular design team meetings, regular design team collaboration and updates to the score via credit trackers.

Life cycle costing has been carried out in order to ensure that the most cost effective materials and specifications are used in order to reduce the whole life cost of the building. Durability measures will also be installed to ensure that the maintenance costs are reduced where possible.

A number of thermal comfort models have been undertaken by TB&A MEP to comply with Hea 4; and a report will be issued along with design drawings to show thermal zoning and controls in order to be provided with continual refinement of the envelope and natural vent system.

Enabling Zero Waste (EZW) targets and methods of measuring circular economy will be examined during the scheme

## Social Considerations

**Kier have been working closely with the client to ensure community benefits are aligned to the university's objectives.**

For instance, appointing apprentices to work on the scheme from local colleges, appointing university graduates into roles within Kier and integrating the project into university course modules for engineering and quantity surveying.



## Continuous improvement – Measurement:

**SEWSCAP2 framework KPIs will be measured throughout the duration of the project and reported on a quarterly basis. Sub-contract meetings will include feedback against the KPIs as part of their main agenda.**

Integration of the end user experience will be implemented into the design through presentations and workshops, including those of the building maintenance team through post-occupation feedback. Throughout the procurement, the project team are bringing opportunities with local spend – therefore delivering maximum value for the Welsh pound.

Education initiatives are also a project KPI and a programme of events was developed for targeting a minimum of one event per month for the duration of the scheme.

## SAIR Journey

**Following on from Kier's success at the 2016 CEW Awards in the Health and Safety category, the site continues to drive the SAIR initiative that Kier have been working on.**

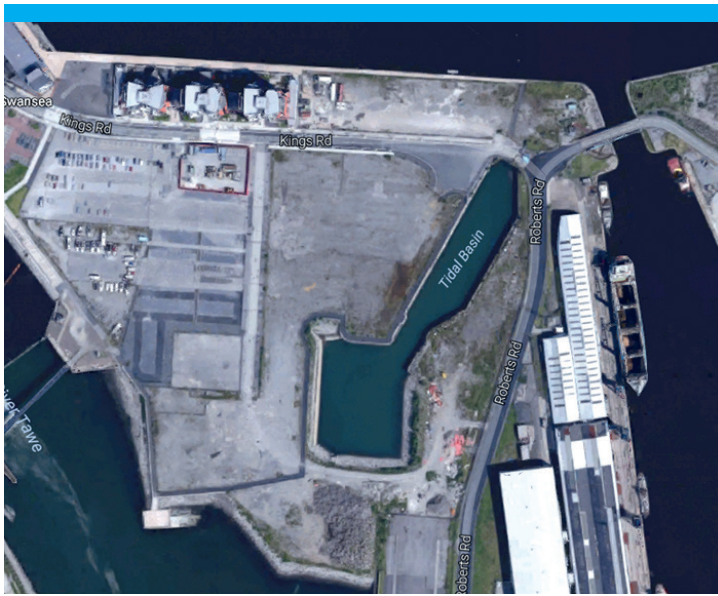
Driving the improvement in safety culture and reduction in incident through the measuring of Significant Accident Incidents Rate rather than traditional AIR.

With improvements in behavioural approaches over recent years, this has (thankfully) seen reductions in accident rates. Significant Accident Incident Rate (SAIR) is calculated in the same way as the AIR but includes the total of incidents recorded against the criteria below.

- RIDDOR injury accidents on our premises
- RIDDOR dangerous occurrences
- RIDDOR injury to members of the public
- >1 day injuries
- Asbestos related incidents
- Fire
- Service damage
- High potential or near miss incidents

The use of this metric should assist in driving down further the incidence of accidents on site and the information gathered used to influence the safety culture of staff and workforce on our sites'.





## Legacy & Impact

Kier have a 'corporate responsibility employment skills plan' which outlines how to exceed all community benefits and employment and training targets, through timely pre-start engagement with local organisations. They are able to support locally employed individuals into sustainable employment across the scheme.

The local community will be involved in the project throughout various community liaison meetings, site tours, school visits and regular newsletters.

### Key community benefits include:

- 1300 person weeks
- 25 jobs for NEETS
- 10 trainee/apprentice weeks per £1m
- FM graduate initiative
- 2 undergraduate employment offers
- 500 hours of construction training and education – providing access to the site and training facility for schools

## Economic Considerations

**Led by the client, the project is being progressed in a collaborative fashion, with the establishment of an integrated team from an early stage in the project's development.**

The SEWSCAP2 framework has been used to engage a main contractor and design team on a 2-stage design and build basis. The NEC contract form (Option A: Lump Sum) is favoured for greater certainty for the client. The client remains involved in the development phase to reduce project risks and therefore make a lump sum approach more suitable and better value for the whole team. The provision of a 'not to exceed' offer based on 50% cost certainty at the end of RIBA stage 3 demonstrates this collaborative approach.

End users and academic stakeholders are involved throughout the project development process to ensure that the final product reflects their needs. Particular attention given to specialist areas such as: tech – engineering; library; IT and architectural faculty areas.

### Process & Supply Chain Control

With a regional office in South Wales, Kier utilise local subcontractors to deliver work packages throughout the project. A 'Meet the Buyer' event has already been held and advertised on Sell2Wales for local subcontractors to access opportunities on the project with a key focus on attendance by local suppliers. The Wales business operates a supply chain management system covering 44 key trades. Each of these has to be compliant with 'Safety Schemes in Procurement'. Performance is tracked monthly and on completion with comments fed back into the system.

Training and assistance is provided to subcontractors to attain such accreditation where required. Based upon the above best practice, Kier were able to have an early mini-tender process. This was carried out to allow the appointment of an M&E subcontractor, Whiteheads, to provide ESI in the design and asset selection, maximising the value of Early Contractor Involvement (ECI) during the pre-construction phase. The project team developed a 'not to exceed offer' including services, providing an upper limit on the project cost and thereby giving the client certainty.

## Design Considerations

The project has engaged closely and worked in a collaborative manner with the local planners, Design Commission for Wales (DCFW) and the Prince's Foundation for Building Communities (PFBC). This approach has helped to inform the detailed and technical design, ensuring the project delivers an architectural vision appropriate to the distinctiveness of the local area.

Early collaboration between Stride Treglown Architects, the Prince's Foundation architectural advisors and ESHA Architects, ensured a seamless approach to defining and executing the interpretation of the design code, achieving planning permission earlier in the year.

### Considerations Improving the Process

Lessons learnt have been captured via workshops and experiences from previous projects. They include:

1. Provision of a building that gives a flexible solution
2. How risk and value are being managed to give greater certainty - transparent approach
3. How energy efficiency, carbon impacts and whole life costs can be better managed i.e. not necessarily through BREEAM
4. How the development of an integrated project team from a very early stage supports the achievement of high levels of community benefits
5. How construction waste can be managed out of the project
6. Feedback from FM team i.e. lessons learnt from other projects. Particularly bad experiences with: Single ply roofing / High level window maintenance; Building management systems/General M&E maintenance; Building overheating
7. Although not Design related, implementation of all encompassing drugs and alcohol testing procedure carried out during site inductions, based on experience currently being gained on other projects.

**Driving a FM integrated solution:** Kier's involvement in the design process providing input into design decisions and informing asset selection with the option of a 5 year FM contract post completion.

An Education Initiatives programme has been developed for extent of project, provision of a position for an FM

graduate to be employed from the design stage through construction with the opportunity for employment with the FM contractor/client following completion.

BIM presentations have been given to staff and students to brief them on understanding and long term legacy Facilities Management.