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Design Review Report

Swansea Tidal Lagoon

6th November 2013



Declarations of Interest

Panel members, observers and other relevant parties are required to declare **in advance** any interests they may have in relation to the Design Review Agenda items. Any such declarations are recorded here and in DCFW's central records.

Review Status

CONFIDENTIAL

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| Meeting date | Wednesday 6 th November 2013 |
| Issue date | 1 st Version: 22 nd November 2013 2 nd Version: 11 th December 2013 |
| Scheme location | Swansea Bay |
| Scheme description | Energy generating tidal lagoon |
| Scheme reference number | 17 (PINS02/13) |
| Planning status | Pre-DCO application |

Declarations of Interest

Andrew Linfoot is currently employing LDA as sub-consultants to Ch2MHill on a project on the south coast of England.

Carole-Anne Davies' husband was asked to tender for public art work on this scheme, but is not currently involved.

Consultations to Date

The project has been subject to wide public consultation of both formal and informal nature. Project consultation documentation has been mailed to almost 200,000 addresses and this has been supplemented with public meetings and events.

Informal consultation included issues and options during the period autumn 2011 to summer 2013. Statutory consultees and the wider public were included in the process.

In October 2012, Tidal Lagoon Swansea Bay Ltd (TLSB) submitted a Scoping Report to the Planning Inspectorate, which was also distributed to key stakeholders and local authorities. In November 2012, a formal scoping opinion was issued which established the scope for the Environmental Impact Assessment (EIA).

Formal consultation on the preferred option and Preliminary Environmental Information Report took place during the period 4th July to 5th August 2013 in accordance with advice in paragraph 52 of Guidance on the PINS NSIP pre-application process, DCLG, January 2013.

TLSB held an event on 17th October 2013 at which findings of the EIA were presented to statutory consultees, non-statutory consultees and the wider public. The presentation included potential impacts and proposed mitigation strategies, and highlighted the benefits of the project.

Formal application for Development Consent Order (DCO) to authorise the construction and operation of the Tidal Lagoon and associated works is planned for late January 2014. The formal submission in January will be accompanied by an Environmental Statement, which will present the full findings of the EIA including measures to reduce effects or provide benefits.

Correspondence with Design Commission for Wales (DCFW) of 23rd May 2013, 21st July 2013 and 3rd September 2013 provides further background to the NSIP/PINS process through which this project is proceeding, and to three prior consultations with DCFW, focussing on the energy generation, coastal aspects and the landside ambitions, land ownership and associated design issues.

Key issues arising from earlier presentations to DCFW

The following summary gives the key points identified during the presentation on 12th August 2013:

- Matters of land ownership and interests require swift resolution given their critical impact on access and movement.
- Agreement with all parties on access points is critical along with the need to fix key elements in order to clarify items for the EIA and to assess mitigation.
- The Panel recognised the stage the project has reached and that this is a critical point in its progress, but with several important unknowns and uncertainties yet to be addressed in a short timescale.
- The Panel highlighted the need to make tangible progress on the land side design issues which are critical to the success of the wider ambitions of the project.
- The Panel would expect greater detail on the following aspects, at the next meeting:
 - Quality of public spaces arising from further design work and understanding of constraints;
 - Relationship of public realm to planned buildings and movement strategy;
 - Details of the western link, assuming agreement is achieved;
 - The nature of landscape treatment, walkways/boardwalks and the nature and quality of the experience at high and low tide;
 - Detailed information on access to the eastern landfall building;
 - Connections with the University Campus public realm and balance of student use ;
 - Details of design procurement;
 - Sections of lagoon enclosure and landward beach and park;
 - A clear understanding of what will be contained within the DCO and what will be excluded for later consideration.

The Proposals

The Severn Estuary holds the second highest tidal range in the world, with Swansea Bay benefitting from spring tides of up to 10m. The stated aim of the project is to harness this tidal resource for energy/power generation and capture regeneration and tourism benefits. The proposal offers a nominal rated capacity of 240MW with 120 year life, capable of 14 hours generation, daily. <http://www.tidallagoonswanseabay.com/>

Summary

There were several key points specifically identified by the Panel:

- The Panel is supportive of the tidal lagoon proposal in principle
- The Panel was disappointed to hear that the western link through the port would not be possible, but was pleased to see the team's proposals for a water shuttle which will provide an important link to the city centre.
- The sense of arrival will be very important, and the opportunities to provide a good visitor experience should be explored and addressed in detail. This includes the route from the McDonalds roundabout and arrival by water shuttle.
- A good travel plan will be crucial. The Panel would have liked to have seen more details about transport interchange and coordination, particularly at the western landfall.
- The Panel was encouraged to hear proposals for the cycle link from Baldwin's Bridge, which would provide a good connection to the University Campus.
- The team provided a convincing explanation for the location of the western landfall building. However, the Panel thought the surroundings required more design work to integrate and link the arrival points, lagoon wall paths and the building. The public realm surrounding the building needs better explanation.
- The Panel was encouraged by progress on the offshore building design. The brief for this building, which combines elements of the turbine operation and maintenance, is exciting. The Panel appreciated that the design was only at RIBA Stage 2 (formerly Stage C) and that further work on the proposal was needed. A more detailed plan of the area surrounding the building and the turbine platform is required to demonstrate the relationship between the building, landscape and turbine equipment. The Commission will reserve further comment on the lagoon buildings themselves until designs have progressed.
- The Panel is interested in the processes involved in producing the Environmental Statement, but does not intend to comment on the contents of the document
- The team's ongoing commitment to public art will be important.

- A holistic design approach and solution to the site, which incorporates engineering and public realm, will be important in creating a desirable destination.

Discussions and Panel Response in Full

A presentation by the team was followed by discussion of the key design issues.

Presentation

Alex Herbert of Tidal Lagoon Swansea Bay plc (TLSB) gave an introduction and update on recent progress. The programme has changed since the previous Design Review, with the intended submission of the DCO application postponed until late January 2014 to allow certain chapters of the draft ES to be reviewed by particular stakeholders and authorities prior to submission. He confirmed that everything presented in this review will form part of the DCO application.

Alister Kratt, LDA, explained progress on land ownership, access and transport matters. Despite positive discussions with ABP, the team had not been able to secure land access to the west, through the port. Instead, a water shuttle is proposed, which would provide the important link with the city centre. Travel Plan Frameworks form the basis of ongoing development, and strategies are being developed alongside consultation with Highways Department. The roads within the SA1 development are not yet adopted, but are intended to be, and it may be possible for the lagoon access road to link to SA1 in the future.

There is an aspiration to improve pedestrian and cycle access to the coast, and there may be opportunities to improve the route of the Wales Coastal Path. The team are also looking at the possibility of integration with the Coed Darcy travel plan.

Main vehicle access is proposed from the park-and-ride (McDonalds) junction on Fabian Way, avoiding the Baldwin Bridge which would compound existing problems with heavy traffic to the port. This 23m wide route will have separated vehicle, cycle/pedestrian and port traffic lanes with a central swale to collect and filter rainwater before draining it into the port. A cycle route from Baldwin Bridge is proposed to provide an important link to the University campus. The car parking strategy has been scaled to the profile of events intended. A gate system has been devised to control access to various parts of the scheme at night and/or during bad weather.

A visual impact exercise has been carried out which considers long-range views from 2-3Km away. This study has informed the scale of proposed buildings, the lighting design (by Michael Grubb) and materials of the sea wall.

Alister explained progress on the masterplan. The scheme is considered as a marine park with different character areas, and the design team are now focusing on key areas and aspects of public realm. The various parts of the scheme have been considered at high and low tide conditions.

Paul Newman, architect for the off-shore building, gave a presentation of the concepts and design of the building so far. Designs have reached RIBA Stage 2 (formerly Stage C), and therefore still require further work. The building, inspired by an oyster shell, is

designed to respond to and provide shelter from the harsh, exposed environment. It aims to be self-sustaining, not requiring connection to the grid and employs passive environmental design strategies. Concrete is proposed for the building shell which will use local blast-furnace slag to improve its environmental credentials. The form will allow concrete casting moulds to be re-used. Two levels of the building will be sunk into the platform. The lighting design is informed by the natural rhythms of the moon and tides. Alister Kratt described the design for the landscape around the building, which is tiered to provide access to the water, and includes artificial rock pool habitats.

Alister also explained progress on the western landfall building which forms a 'gateway' visitor centre. This building, designed by Faulkner Brown, must accommodate a wide variety of activities requiring differently scaled spaces. Therefore, it is conceived as a simple, well-tailored extruded building which can be divided up along its length. Passive environmental design will be incorporated where possible.

At the eastern landfall, a SSSI visitor information point is now proposed rather than a building.

A section through the western wall was shown to demonstrate the scale of routes for vehicles and pedestrians. The western wall will be punctuated with 'pearls' of interest along the route, including art installations. The lighting strategy is still being developed.

Discussions

The Panel expressed its particular disappointment at the loss of the western access through the Dock. This physical link to the city centre would have been ideal, and would form an important part of the previously stated aspirations to support wider regeneration.

The Panel wondered whether the loss of this link therefore undermined the original principles of the Tidal Lagoon, and whether the western landfall building and facilities were now in the right place given the change in access arrangements.

The Panel commended the proposal for a water shuttle service which would accommodate pedestrians and cycles, however there are reservations about its viability and no details of the western jetty or access to it were provided.

The team explained that the western link did not play a significant role in locating the western landfall activities or the lagoon itself. The western landfall building is located for operation of boating facilities where there would be permanent water which would not work elsewhere in the lagoon.

Although pedestrian access from the city is now compromised due to the extended length of the route, bus and water shuttle connections to the city are proposed, and it was always expected that a large number of visitors would arrive by car. Also, the University may expand in the direction of the city in the future, making the proposed route less isolated.

The Panel asked whether the approach to the buildings and treatment of the landscape had changed to make it more of a destination following the loss of the western land link. The team explained that their approach had changed slightly.

The treatment and proposed nature of the land at the eastern landfall was now to be more natural and intended to be less busy with an information/interpretation shelter rather than a building. They still have an aspiration to link to the city, but now it is even more important that the travel options are promoted, especially sustainable travel. They

are also looking at linking with the University's green travel plan. The team confirmed that all of the cycle ways will be included in the DCO application.

The Panel asked for further explanation of the route between Fabian Way and the western landfall, which was described as a 23m wide corridor. The team explained that the strip of land was confirmed with ABP, but there were still ongoing negotiations. They are also exploring improvement of ABP's roads. The Panel advised looking at this important link in more detail, considering the visitor arrival experience as a whole from the point at which they leave Fabian Way right the way through to the western landfall buildings. This route is even more crucial now the western land link has been lost.

The team were asked how the EIA had informed the designs and what enhancement and mitigation techniques were being employed. They explained that the information presented for this review is in draft form, so mitigation measures had not been fully resolved, but everything presented is intended. With regards to coastal processes, which are the most complex issue, TLSB will be responsible for any extra dredging of the port that might be required above that which is already carried out by ABP. The University will have joint responsibility for the dunes area in front of the campus, and a commitment with Local Authorities and Natural Resources Wales is being developed. Chapters of the draft ES will be available online for review by 11th November 2013.

Some of the materials made available for the review demonstrated a difference of opinion between that of the team and the Local Authorities and other organisations. The Panel asked how the team were responding to such situations. The team explained that statements will be made taking account of all the points raised in the consultations. They will be providing further information on the development as it progresses, but they are confident with their research and modelling to date.

The Panel asked for further explanation of how the off-shore building relates to the landscape and the operational equipment and engineering structures surrounding it. They thought that this element of the design needed more work, and that a detailed plan of both the building and the turbine platform was needed to explore and explain these relationships in more detail.

The team explained that the building would house selected items of operational equipment as well as welfare facilities for staff. However, most of the engineering items will be outside the building. The only items which will be visible above the platform will be the sluice gates and a crane (possibly two cranes) which will run on rails above the turbines. The turbines themselves will be submerged, but may be marked by numbers or some form of artwork. The Panel was concerned that, if not carefully planned, the area around the building could be cluttered by the various equipment, access points and the proposed PV Panels. The Panel thought it would be a shame if the vision for the building was compromised by lack of attention to detail in this respect. The team explained that the use of concrete would help tie the building, equipment and landscape together. The building is designed to be robust but elegant, and the landscape will help to break down the edges of the heavy engineering. The decision to sink two levels of the building was made to give the building an appropriate scale so that it would act as a visual marker and not take up too much of the walkway/platform. The Panel suggested that, given the challenging environment, wind pressures around the building should be modelled.

The Panel would welcome an opportunity to review this building in more detail at a later date.

The Panel thought that the arrival experience at the western landfall needed more work to create a successful and welcoming destination. Legibility, position and orientation of spaces and the buildings, the network of paths and transport interchange all need to be better integrated in the design. In particular, the arrival sequences from the water shuttle and the link road would benefit from detailed exploration. It is approximately 75m from the water shuttle docking point to the western landfall building, so the link between them needs to be well planned. A way-finding strategy should also be considered. Detailed plans and 3D view drawings would help the team to explore and present this aspect of the scheme. The team explained that the western landfall building would be visible from the approach road and the water shuttle terminal, and that it would contain visitor arrival-orientation space. The Panel also expressed concern about the vertical walls to the boat pontoons which would create a large vertical drop at low tide. Treatment of these walls will be important as they contribute to views towards the arrival building.

Although the Commission is interested to ensure the processes involved in preparing the Environmental Statement have been properly adhered to, it does not intend to comment on the document itself.

The Panel asked about the content of the DCO submission, what TLSB were committed to building and the timescales involved. TLSB said they were committed to building everything presented and included in the DCO application, and that the approval cannot be varied once awarded. They confirmed that they had funds to pay for design of the buildings and part of the construction of them, and that they expected to get match-funding for the remainder of construction costs. There is no fixed date for completion of construction, but the following provisional timescales were given:

- January 2014: Submission of DCO application
- March 2015: Estimated decision date, construction starts on site immediately
- 2015-2017: Two year build programme for wall and energy generation
- End 2017: Power generation
- End 2018: Construction complete

The Panel suggested that any public art strategy should consider the experience of travelling across the wall, and should not forget the longer term life of the lagoon structure. It would be important to see a strategy for art over the long term including, for example, a photographic record project.

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A Welsh language copy of this report is available upon request.

Attendees

Agent/Client/Developer: Alex Herbert, Tidal Lagoon Power
Huw Gilmore, Tidal Lagoon Power

Architectural/Urban Designer: Alister Kratt, LDA Design
Paul Newman, Juice Architects

Planning Authority:

Design Review Panel:
Chair Alan Francis
Lead Panellist Andrew Linfoot
Ben Sibert
Amanda Spence, Design Advisor, DCFW

Observing: Carole-Anne Davies, DCFW