ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No.
DATE RECEIVED 05 OCT 2011

Issue 1.1

Connect2 Shoreham Harbour Footbridge Replacement

Design and Access Statement

West Sussex County Council

September 2011

Contents

1. Introduction

1.1 Description of the proposal

1.2 Purpose of the design and access statement

1.3 The need for the development

1.4 Structure of the design and access statement

2. Design

2.1 The planning policy context

2.2 Overview of Technical issues

2.3 Options appraisal

2.4 Consultation

2.5 Proposed Use and Amount of Development

2.6 Layout

2.7 Scale

2.8 Appearance and Materials

2.9 Landscaping

2.10 Construction

3. Access

3.1 Introduction

3.2 Convenience of Access

3.3 Inclusive Access

1. Introduction

1.1 DESCRIPTION OF THE PROPOSAL

This Design and Access Statement supports an application for full planning permission for the replacement of Shoreham Harbour Footbridge. The replacement bridge shall span the River Adur in a north-south direction on a new alignment to the east of the existing bridge, connecting Coronation Green with a new landscaped area north of the Lower Beach Road car park. The new bridge will provide improved access between Shoreham Beach and Shoreham-by-Sea Town and will also complete a missing section of National Cycle Network Route 2 (NCN2).

1.2 PURPOSE OF THE DESIGN AND ACCESS STATEMENT

Government Circular 01/2006 Guidance on Changes to the Development Control System requires all applications for full planning permission which do not meet certain exemption criteria to be accompanied by a Design and Access Statement to explain and justify the content of the planning application.

This Design and Access Statement provides a summary of all relevant key information about the development including both design principles and issues relating to access. In addition, an overview of technical assessments undertaken and an examination of the development in relation to current planning policies are provided, indicating why full planning permission should be granted for the development.

Adur District Council's Guidance Note for applicants has been referred to in the preparation of this Design and Access Statement.

1.3 THE NEED FOR THE DEVELOPMENT

Due to major structural defects outlined in the feasibility Report (see Appendix B) and the instability of the bridge in extreme wind conditions a full reconstruction is required.

The demolition of the existing bridge does not form part of this planning application.

1.4 STRUCTURE OF THE DESIGN AND ACCESS STATEMENT

The Design and Access Statement is divided into two sections, as follows:

- Chapter 2: The Design Process;
- Chapter 3: Access.

2. Design

2.1 THE PLANNING POLICY CONTEXT

This application is being made under Town and Country Planning Act 1990 and associated legislation.

The project supports the aims of the West Sussex Local Transport Plan (LTP3) 2011- 2026, directly responding to the Short-term (2011-2016) initiatives for improving pedestrian facilities in Shoreham.

The proposed development meets the strategic principles for future development as outlined in the objectives of the Shoreham Renaissance (See Appendix C) as well as meeting many of the lower level aims relating to the footbridge and adjacent public realm.

The Worthing & Adur Sustainable Community Strategy (See Appendix D) is keen to promote both cycling and walking within the local area. The proposed development will improve facilities for both of these activities.

Conservation Area consent for demolition of the existing Shoreham Footbridge will be sought from Adur District Council shortly after this planning application has been submitted.

In order to minimise the disruption caused by two major schemes in quick succession at the same location as well as to ensure the new bridge and new flood defences are fully integrated, West Sussex County Council and the Environment Agency are working together. Approximately 50% (the western half) of Reach 4 (see Appendix O Flood Defence, Reach Location Plan) of the Shoreham West Bank Scheme (See Appendix O Flood Defence, Preferred Reach Options) will be delivered at the same time as the footbridge scheme by the footbridge contractor. The new footbridge will land approximately 1m higher than the existing highway at the height of the proposed floodwall. Lower Beach Road will be adjusted (raised) as necessary to accommodate both the new footbridge and the improved flood defences.

2.2 OVERVIEW OF TECHNICAL ISSUES

Key technical issues have been considered and, where appropriate, addressed to ensure that the re-construction of the Shoreham harbour Footbridge is acceptable on all grounds.

2.2.1 Air Quality

Air Quality has been assessed as a part of the Non Statutory Environmental Impact Assessment conducted by ADAS UK Ltd (See Appendix J, Section 8).

The conclusion of the AQA is that the proposed development will lead to a negligible increase in the levels of key pollutants (See Appendix J, Section 8, paragraph 8.10.11).

2.2.2 Archaeology

Pre-application discussions have been conducted between the WSCC Project Team and a WSCC archaeologist with regard to the proposed development.

Discussions suggest that due to the location of the proposed development and the largely marine nature of the site there is a negligible likelihood of any archaeology present on site. However analysis of cores taken from marine boreholes will be made available to the WSCC archaeologist.

Taking the above into account archaeology is deemed not applicable to the proposed development.

2.2.3 Biodiversity and Geodiversity

The biodiversity and Geodiversity of the proposed development have been assessed as part of the Non Statutory Environmental Impact Assessment conducted by ADAS UK Ltd (See Appendix J, Section 6).

The assessment has taken into account the relevant national and local regulatory and policy framework.

Ecological impact assessment has been conducted following the guidance issued by the Institute of Ecology and Environmental Management (IEEM): Guidelines for Ecological Impact Assessment and the Design Manual for Roads and Bridges Volume 11.

A number of individual assessments have been used to inform the wider biodiversity and Geodiversity assessment;

- Extended Phase 1 and protected species assessment
- Desk study for previous records or protected and notable species
- Fish desk study

Statutory consultees including EA, RSPB, Port, MMO, NE, ADC and WSCC Ecologists have been consulted prior to submission of this planning application.

Spanning the tidal river Adur, the site of the proposed development comprises an uncommon and nationally important assemblage of habitats and their dependent species. These include the Saltmarsh and intertidal mudflats that are UK Biodiversity Action Plan (BAP) priority habitats. Some species are nationally important due to the uncommon nature of the habitat in Britain, regionally and at a local level. At the same time the site supports more common and widespread species, which are both specifically protected and local BAP species.

The surveys have revealed habitats on and surrounding the site, directly associated with the River Adur, to be generally of high ecological value.

The predicted effects to the receptor habitats and species have been assessed to range from minor adverse to neutral/negligible without any mitigation actions being implemented (See Appendix J, Section 6, table 6.9).

The proposed development is not expected to impact on any designated sites and as such no mitigation actions are proposed to them.

In general, mitigation actions associated with the proposed development will ensure that areas damaged during the construction phase will be re-instated with Saltmarsh plants to ensure no net loss of habitat.

The Saltmarsh to the east of the existing footbridge will be planted to re-establish the vegetation to deter further damage than has already been recorded due to human activity.

Areas previously unvegetated or shaded out due to the existing bridge will be planted, to expand the area of Saltmarsh habitat, in accordance with BAP targets and objectives.

No significant residual negative effects are predicted to occur as a result of the proposed development.

2.2.4 Daylight and Sunlight

The height of the proposed development is of a similar scale to the existing footbridge it replaces.

At the northern end the proposed development adjoins the public open space between Coronation Green and Dolphin Hard. The nearest adjoining property or building is Sussex Yacht Club, which is a single storey structure with no west facing windows. Thus the proposed development will not affect the current levels of daylight or sunlight.

The southern end of the proposed development will be moved east away from properties that adjoin the current footbridge. Therefore the proposed development will not detrimentally affect the light levels received by any adjoining properties or buildings at its southern end.

The associated flood defence works and raising of Lower Beach Road may impact upon the beer garden at the Waterside Inn.

2.2.5 Environmental Impact

A screening opinion provided by WSCC in May 2010 (See Appendix S – Screening Opinion) determines that whilst the proposed development falls under Schedule 2 (10f) of the regulations, an Environmental Impact Assessment (EIA) is not considered to be a statutory requirement. Consent for the proposed development is also required from the Marine Management Organisation (MMO), which has therefore been consulted separately regarding the need for an EIA. The MMO also responded that in its opinion, an EIA was not a statutory requirement (See Appendix S – Screening Opinion).

Nevertheless, a non-statutory EIA has been completed in accordance with the guidance provided in the Highways Agency's Design Manual for Roads and Bridges Volume 11 Section 2 Part 2.2: Non-Statutory Environmental Impact Assessment (2008) (Ref 2)

A Scoping Report (See Appendix T – Scoping Report) and a Non Statutory Environmental Statement (see Appendix J) have been completed.

2.2.6 Flood Risk

A Flood Risk Assessment has been conducted by ADAS UK Ltd (see Appendix K Flood Risk Assessment).

The site of the proposed development lies within Flood Zone 3, a high-risk flood zone with a 1 in 100 or greater annual probability of flooding from rivers or 1 in 200 or greater from the sea.

The Flood Risk Assessment states that the proposed development passes the 'exception test' for essential infrastructure in Flood Zone 3. The proposed development is not considered to be at risk of flooding, has fewer piers than the current bridge, has soffit levels no lower than those of the current bridge and will not feature a solid abutment at the southern end. The Flood Risk Assessment also finds that the proposed development will not lead to increased risk of flooding elsewhere in the local area.

2.2.7 Heritage

The Cultural Heritage of the proposed development has been assessed as a part of the Non Statutory Environmental Impact Assessment conducted by ADAS UK Ltd (See Appendix J, Section 5). The methodology for completing the assessment has given consideration to the national and local regulatory and policy framework and the guidelines described in the Design Manual for Roads and Bridges.

The existing footbridge is not a listed building. The closest scheduled monument is the Marpins with a further 32 listed buildings within a 500m radius.

Informal pre application discussions have taken place with the Adur District Council Planning Policy Manager. Consensus is that the proposed development will not have a direct impact on any Scheduled Monuments, Heritage Environmental Records or Listed Buildings.

2.2.8 Hydrology

The Hydrology and Hydrogeology of the proposed development has been assessed as part of the Non Statutory Environmental Impact Assessment conducted by ADAS UK Ltd (See Appendix J, Section 9).

In addition, JBA Consulting has carried out a Hydromorphological Assessment (see Appendix L – Initial Hydro morphological Assessment).

The main surface water body relevant to the site is the River Adur, which flows east to west through the proposed development. At the location of the proposed development the River Adur is tidal, discharging into the English Channel through the mouth of Shoreham Harbour.

Environment Agency aquifer designation maps show the chalk underlying the site to be a principal aquifer. Extraction from this aquifer is used as the public drinking water supply. The closest known extraction borehole is approximately 2km north north west of the proposed development.

The significance of impacts to the hydrology and hydrogeology have been assessed using guidance from the Department of Transports 'Guidance on the Methodology for Multi Modal Studies (GOMMMS)', the Design Manual for Roads and Bridges Volume 11 and guidance from the Environment agency for assessing impacts on the water environment.

The majority of predicted impacts are assessed to be minor adverse or of negligible significance. Even so, a number of mitigation measures are proposed to further reduce the impacts and protect the water environment;

- Use of 225-150mm stone for temporary causeways to increase permeability to tidal flows,
- Use of floating pontoons to reduce encroaching of causeway on tidal flow, thereby reducing the extent of changes in flow,
- Use of pollution prevention and control measures and construction best practice.

Considering the projects relatively short duration, small size, the hydrological and hydro geological sensitivity of the site and the proposed use of effective mitigation measures, pollution prevention and control measures and construction best practices, the environmental impacts are expected to be negligible.

The hydro-morhpological assessment concludes that there will be negligible effects from either removal of the existing footbridge or construction of the new one and that these will be local to individual piers. There will be no negative impact to the SSSI or RSPB bird reserve following the works.

2.2.9 Land Contamination

A Phase 1 Environmental Risk Assessment carried out by Amey in 2009 (see Appendix M) assessed the site of the proposed development for risks relating to the presence of landfill and waste. Historic landfill sites were identified 254m west of the site at Ropetackle Road and 363m west of the site at the Adur Recreation Ground however the proposed development will not affect nor be affected by either of these historic landfills.

The site of the proposed development is not located on contaminated land. Any waste generated by the proposed development will be handled in accordance with the Site Waste Management Plan.

2.2.10 Landscape and Visual Impact

A full assessment of landscape and visual effects of the proposed development was scoped out of the Environmental Statement (See Appendix T - Scoping report). However, the local community communicated its concerns with regard to the potential impact that the proposed development may have on the views of St. Mary de Haura Church, particularly from Shoreham Beach. Accordingly a study of the visual impact of the proposed development on the conservation area has been conducted as a part of the assessment of cultural heritage.

The study notes that the Conservation Area Character Appraisal describes the negative impact of the current footbridge as follows *"Although the location of the 'entrance' is considered aesthetically of good quality due to its location on the river, the existing footbridge itself is considered to have a poor physical appearance in a visually prominent location."*

The study acknowledges that the proposed development will change the nature of some views of the Conservation Area, most notable being the views of St. Mary de Haura church and the River Adur.

Having considered the key views and assessed the impacts upon them from the proposed development the study finds that the appearance and condition of the existing footbridge has a detrimental effect on the character of the area and that the proposed development will contribute in a positive way to the conservation Area and to the town as whole.

2.2.11 LIGHTING

The lighting for the footway of the proposed development will be mounted in the handrail at a height of 1.2m from the footway surface. This will minimise any structures above the height of the top rail such as lighting columns causing less impact on the conservation area. The lighting will be energy efficient, designed to Class S2/CE4, which will receive a minimum maintained level of 10 lux and a maximum of 15 lux. The lighting will be designed to light the footway and avoid significant light pollution.
A lighting solution will be chosen that is vandal and theft resistant but allows practical access for maintenance. A specialist lighting engineer will be employed to design the scheme for the proposed development.
Navigation lights will be installed in accordance with the requirements of the Port Authority and Trinity House. Typically two lights will be installed either side of the proposed development, vertically disposed 2m apart. The lower light will be 2m above high water. To the southern side of the channel red lights will be installed, to the northern side, green. The lighting will be solar powered and not reliant on street lighting circuits.

2.2.12 Mineral Safeguarding

The proposed development comprises the replacement of an existing highway structure with a new highway structure at the same location. As such the proposed development does not increase the level of risk to mineral safeguarding.
Taking the above into account mineral safeguarding is deemed not applicable to the proposed development.

2.2.13 Noise

Noise pollution has been assessed as a part of the Non Statutory Environmental Impact Assessment conducted by ADAS UK Ltd (See Appendix J, Section 7).

Since the proposed development is in effect a like-for-like replacement of an existing structure, the Scoping Study determined that there would be limited noise impacts once the proposed development was operational.

Considering the busy urban setting of the proposed development the Scoping

Study also determined that the construction of the new bridge and demolition of the existing footbridge would lead to relatively low levels of noise. However certain activities such as piling may lead to more elevated short duration emissions.

A background noise survey has been undertaken by Noise & Vibration Consultants Ltd to establish the existing noise climate. Adur District Council Environmental Health has been consulted and appropriate restrictions will be agreed during the works.

In keeping with the Control of Pollution Act 1974 and the Adur District Council Noise

Policy, Best Practice Means (BPM) will be employed to manage noise impact. These are based on British Standard BS 5228 Code of Practice for noise Control on Construction and open Sites. These measures will be captured in the Section 61 consent and may include, but not be limited to;

- Restriction of working hours,
- Employing quiet working methods,
- Controlling noise at source,
- Undertaking noise monitoring to ensure that noise levels are at acceptable levels.

Particular attention will be made to controlling noise generated through the piling process, including use of non-metallic dolly and/or an acoustic shroud

2.2.14 Parking Provision & Transport Issues

A Road Safety Audit has been completed (See Appendix V).

2.2.15 Services and Utilities

The proposed development is a highway structure for use by pedestrians and cyclists.

The proposed development will not result in any changes to or replacement of an existing system or the creation of a new system. It will not generate any form of trade waste or effluent, nor require connections to foul or storm water sewers. In addition the proposed development does not require gas or water supplies.

Drainage of water from the footway of the proposed development will be via weep holes in the bridge deck for which Land Drainage consent will be sought from the Environment Agency together with any other works over the river.

Electrical supply for lighting of the bridge deck will continue to be taken from private street lighting feeds at either end of the proposed structure.

Taking the above into account services and utilities are deemed not applicable to the proposed development.

2.2.15 Sustainability, Renewable Energy and Climate Change

The design of the new bridge embraces efficient and appropriate use of construction materials to ensure durability and minimise long term maintenance liability.

Navigation lights will be solar powered and not reliant on street lighting circuits whilst deck lighting will use energy efficient units and incorporate daylight controls so that they will be turned off during the day.

The key impact of climate change relating to the proposed development relates to increased flood risk (see section 4.6).

The proposed development is essential to facilitate the sustainable transport between Shoreham Beach and Shoreham-by Sea Town.

2.2.16 Tree Survey

There are only a small number of trees close to or within the boundary of the proposed development.

To the north of the proposed development are a small group of trees adjacent to the public highway (A259). These trees will be installed as a part of the East Street development scheme and will have been planted in tree pits specifically designed for the East Street scheme. These trees will not be affected by the development and will be retained. No protection measures are deemed appropriate.

Within the southern boundary of the proposed development adjacent to Lower Beach Road stands a pair of Hawthorn. These trees will be removed as a part of the highway works associated with accommodating the Environment Agency Adur Tidal Walls scheme within the proposed development. As such no protection measures are deemed appropriate.

WSCC Environment & Heritage Team has been contacted informally prior to submission of this application with regard to these trees and has expressed no concerns with regard to their removal.

There are no hedgerows within or close to the proposed development.

2.2.17 Waste Management

A Site Waste Management Plan has been produced in accordance with the Site Waste Management Plans Regulations 2008 (See Appendix W – Site Waste management Plan).

2.3 OPTIONS APPRAISAL

As part of the design process an options feasibility assessment was undertaken by the design team to identify potential options for the replacement footbridge. A number of options were considered at the initial structures options stage in March 2011. Two options were then considered in the design development stage in May 2011; namely a twin steel girder approach deck with a swing opening section or a steel box beam approach deck with swing opening section option.

Conclusively, the swing span option was considered to be preferential – most favourably in line with the objectives of the 'Shoreham Renaissance' and 'Waves Ahead' strategies. It is anticipated that the

new bridge shall enthuse the revitalisation of the area, whilst also providing a modern and safe solution.

2.4 CONSULTATION

Statutory consultees, the General Public and the Planning Authority have been consulted as required by the West Sussex Statement of Community Involvement. Pre-application discussions have taken place as recommended by Appendix E: Summary of methods and techniques for consulting on planning applications.

Pre-application community involvement has utilised the following methods;

- Discussions by developers with the County Council
- Discussions by developers with the community
- Public exhibitions/displays by developers

In addition to those methods described by the West Sussex Statement of Community Involvement the community of Shoreham has had significant involvement at scheme inception. The proposed development is one of 79 Connect2 schemes in the UK. The Connect2 project is sponsored by cycling charity Sustrans and part funded by a £50m grant from the Big Lottery Fund (BLF). The BLF grant of £770,000 for Shoreham Footbridge was secured following community involvement through the Peoples Millions public vote.

Consultees have expressed their general approval of the proposed bridge design and comments have been used to refine specific aspects of the development proposal.

2.5 PROPOSED USE AND AMOUNT OF DEVELOPMENT

The proposed development for a replacement footbridge is intended for use by pedestrians and cyclists. The bridge will form part of a continuous pedestrian/ cycle path connecting the settlements of Shoreham Beach and Shoreham-by-Sea Town. In addition the footbridge shall reconnect a link forming part of the National Cycle Network (NCN2).

2.6 LAYOUT

The General Arrangement Drawing (Appendix N) shows the overall layout of the proposed development. The 'Bridge Alignment' consultation poster (Appendix G) illustrates the realignment.

As with the existing structure the northern end of the footbridge will be sited between Coronation Green and Dolphin Hard. The wider footprint of the new bridge will require that a 3m strip of Dolphin Hard will require stopping up. The steps down to Coronation Green immediately west of the bridge and the ramp to Sussex Yacht Club to the east of the bridge will be reinstated. Following consultation with Sussex Yacht Club the ramp will be improved by removing the steps up to the door and creating a continuous ramp that will allow wheelchair and mobility vehicle access. The ramp down onto Dolphin Hard will also be reinstated as necessary. With the exception of the small strip of Dolphin Hard stopped up to accommodate the new footbridge access will be maintained to the Hard to at least the current standard.

The location and alignment of the northern end of the footbridge provide an optimal route onto the shopping area of East Street using the recently relocated Toucan crossing across the A259.

As described in section 2.2 the southern end of the footbridge has been realigned to the east to allow for the new footbridge and flood defences to integrate. The footbridge will provide access onto Lower Beach Road adjacent to the public car park. As shown in the General Arrangement Drawing and expanded upon in paragraph 3.5 the public car park and Lower Beach Road will be rearranged to accommodate both the flood defences and the footbridge. Lower Beach Road will be re-graded by raising it approximately 1 metre to match the top of the new flood defence wall along the river frontage from a point where the bridge lands to a point adjacent to the Waterside Inn. Lower Beach Road will be ramped back down to the west of the new bridge in order to maintain access to the adjacent properties at the current grade.

In order to ensure the flood defence scheme and bridge integrate fully, as well as to reduce the disruption caused by delivering both schemes, the new sheet piled flood defence wall will be installed during the bridge works from a point close to the current footbridge eastwards to a point adjacent to Lower Beach Road where it turns toward Ferry Road (See Appendix O).

The abutment immediately adjacent to Coronation Green will be a sheet piled abutment. The bridge will launch from this at an angle across the river toward Lower Beach Road.

The proposed design features a structure comprising 7 piers and 8 spans of roughly even spacing. Pier 4 (the middle pier) will provide the axis for a swinging section. The reduced number of piers, when compared to the current footbridge, will minimise the effect on the intertidal mudflats, salt marsh, SSSI and RSPB Adur Reserve. The reduced number of piers will also lighten the appearance of the bridge. The southern landing area has been designed to remove the need for a causeway, as is currently the case. This will allow for Saltmarsh to be reinstated in this location. During the works the contactor will require use of the car park as a site compound (Appendix P).

2.7 SCALE

The scale of the new bridge will be comparable to the existing footbridge.

As shown on the General Arrangement drawing (Appendix N) the new bridge will be 213 metres in length between the abutments. The southern abutment will have a finished footway level of 4.85m above Ordinance Survey datum following the raising of Lower Beach Road. This compares to the current finished footway level of 3.91m. The finished footway level where the northern abutment joins the A259 is 5.52m above Ordinance Survey datum. At the highest point over the navigation channel the finished footway level is 7.86m above Ordinance Survey datum. The glass balustrade will be 1.6m high. The top of the mast supporting the rigid stay of the swing section will be approximately 8m above finished footway level at the point at which it is located on the bridge.

The deck will be 4.8m wide (4m between the handrails) on the approaches to the swing span. The deck will be 6.1m wide at the swing span to allow greater room for traffic either side of the stays and mast.

2.8 BRIDGE APPEARANCE AND MATERIALS

The appearance of the proposed development is illustrated on the submitted photomontage and sketches. The aim has been to provide an elegant, visually discrete and contemporary structure that compliments the open harbour setting.



Figure 1 – Photomontage of proposed Shoreham Harbour Footbridge viewed from Lower Beach Road.

2.8.1 Approach Spans

The approach spans are composite in construction with painted steel constant depth beams and a flat concrete deck. The support piers will be constructed in fair faced concrete and robustly detailed with a circular sectioned stem and tapered oval shaped heads. There will be 3 equal spans either side of the main opening section.

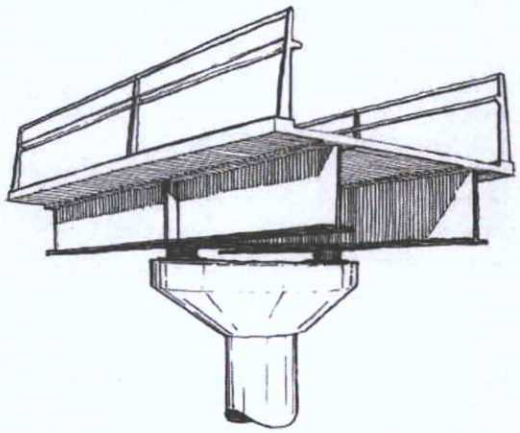


Figure 2 – Sketch illustrating approach span deck and pier support.

2.8.2 Opening Section

The opening section is the focus of the overall composition and is symmetrically organised around the axis formed by the central mast and spindle. It is entirely steel in construction and boat shaped in plan to form a gathering place and allow sufficient room to accommodate the seating, stay connections and mast.

The operating machinery is located below deck level and is housed in a circular shroud which is a flush with the 4m diameter main support.

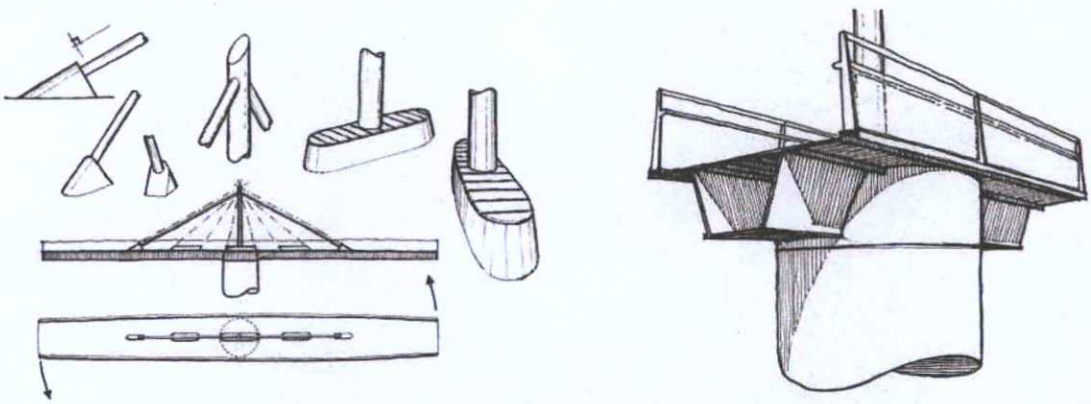


Figure 3 – Sketches illustrating the opening span and turntable support detail. The illustrated seating will not be included following the public consultation.

2.8.3 Parapets

The proposed bridge parapets have been designed to meet Sustrans requirements. They are intended to be lightweight in appearance with a stainless steel top rail at 1600mm above deck level and a stainless steel handrail at 1200mm above deck level. Parapet infil panels will be clear toughend glass and the parapet posts will be stainless steel. This arrangement has the advantage of providing shelter from high winds whilst maintaining maximum views off the bridge.

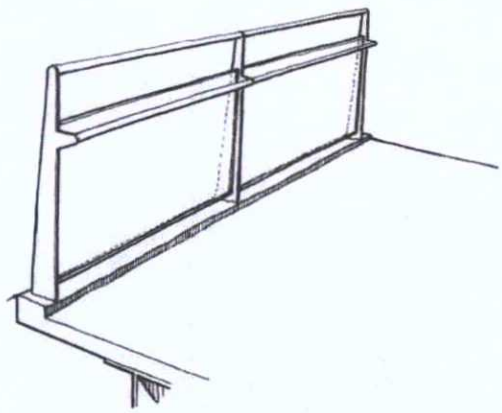


Figure 4 – Sketch illustrating the laminated glass parapet.

2.8.4 Lighting

Statutory lighting for the deck is provided by low energy LED lighting units incorporated in the handrail. Light will be focused and masked to minimise any overspill onto the water and saltmarsh.

Daylight controls will be incorporated into the system to ensure that lighting will switch off during the day.

2.8.5 Materials, Finishes and Chromatics

Our design philosophy is to have all materials naturally finished and left self-coloured preferring to articulate surfaces to create interplay of light and shade. Items requiring protection such as the steel deck beams, tower and hangers will be coated or sheathed in systems of a light neutral tone (precise colour to be determined later).

Large flat surfaces of concrete will be broken up with vertical recessed features to reduce their visual expanse, control adverse weathering and deter graffiti vandalism.

2.9 LANDSCAPING

2.9.1 Objectives

The landing points for the proposed new bridge on the north and south side of the River Adur create opportunities for improving the immediate surroundings and for looking at the wider context of the bridge and its location.

Specific objectives of the designs are:

- Improving connections between the bridge and it's surroundings
- Using the new bridge as a catalyst for improving pedestrian and cycling priority in the immediate vicinity of the bridge
- Improving the legibility of the public realm around the bridge by using a coordinated approach to materials, street furniture, street design and lighting on both sides of the River Adur.
- Planting native shoreline plants to link the scheme with its natural surroundings and enhance local character

2.9.2 Design

<u>Bridge landing adjacent to Shoreham High Street – Northside of the Adur</u>

The Landing on the northside of the Adur is slightly altered from the existing bridge position being set back further from the roadside. This allows an enlarged space to be achieved as an intermediate area next to the existing pavement between the toucan crossing to East Street and the stairway access to

Coronation Green. The proposals are designed to follow on from the newly constructed East Street pedestrian scheme

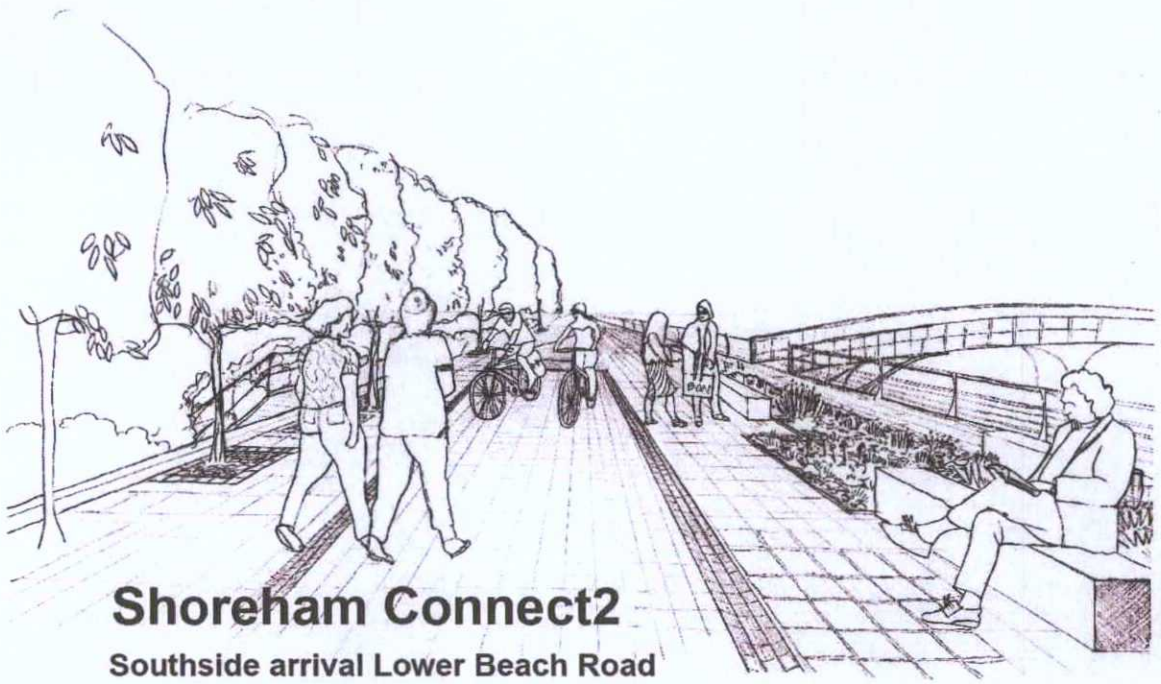
This space is designed to:

- Provide a viewing area over the River Adur and Coronation Green
- To provide a collecting space adjacent to the pavement to allow pedestrians and cyclists to pause, wait for others, dismount if necessary and choose a new route.
- Link the proposed bridge with its surroundings by using street furniture and surfacing which ties in with those used in Coronation Green and the East Street pedestrian scheme.
- Provide wide steps down to Coronation Green which can double up as informal seating
- Improve existing (poor) links between the existing bridge, Coronation Green and the High Street by widening the entrances and providing an integrated design approach.

Bridge Landing on Lower Beach Road, Southside of the River Adur

The landing on the south side of the River Adur is affected by the proposed Environment Agency (EA) Adur Flood prevention scheme. The EA proposals have been accommodated in these proposals for Lower Beach Road.

Currently a wide expanse of hard surfacing, Lower Beach Road is an exposed area that is adjacent to the River. It does not have a strong sense of place or local character. The existing adjacent car park is dominant in local views from Lower Beach Road.



The design for the new landing point of the proposed bridge and the changes brought about by the proposed EA flood prevention scheme seek to overcome these issues and create a new public space which relates to the River Adur, the proposed bridge and the town beyond as well as creating a sense of arrival to Shoreham Beach as a destination.

The area is largely urban but also has high ecological value reflected in the national designation of the River Adur as a Site of Special Scientific Interest and Shoreham Beach as a local Nature Reserve and Site of Importance for Nature Conservation.

This space is designed to:

- Create a new public open space that faces onto the River Adur and enhances the views to the north bank and Shoreham Town.
- Allow for residential traffic within a shared space street design where cars do not have automatic priority. The space is shared with pedestrians, cyclists, vehicles and other users.
- Reflect the northern landing area through the use of similar materials, street furniture and detailed design.
- Include locally native planting to reflect the seaside/shoreline location and celebrate the ecology of the area. Planting in shingle beds will link the river to the public space - many of the plants will be growing within the tidal mudflats and shingle - e.g. yellow horned poppy, sea kale, sea holly, red valerian, English stonecrop.
- Include tree planting of species selected for salt tolerance and cold exposed conditions to provide shade and shelter, to screen views of the existing car park and provide structure to the new public space.

2.9.3 Materials

Materials will be selected to tie in with the existing materials used on the East Street scheme and on Coronation Green. The bridge design parapets and rails will also be taken into account in order that the proposals are fully integrated into the surrounding street environment.

Handrails, seating, litter bins, street lighting will be selected to match existing.

Surfacing materials will be concrete slab and block work (reconstituted granite) with granite sett trim, drainage channels and design details to accommodate directional and level changes. This will give a clean, modern seaside image to the spaces.

A local person bench, the motive of the Sustrans Connect2 nationwide project will be located within the Lower Beach Road scheme.

2.10 CONSTRUCTION

2.10.1 Introduction & Programme

The new footbridge will be partly constructed from marine platforms (i.e. pontoons and barges) and partly from temporary stone causeways extending from the north and south banks of the estuary. During the construction period the existing bridge will remain open, with the exception of short periods when overhead lifting with necessitate safety closures. During these times alternative arrangement (e.g. mini bus) will be made. To construct the northern abutment on the same line as the existing, the northern end of the old bridge will need to be locally demolished at an early stage. To maintain access a temporary link span will be provided.

The footbridge will be constructed over a period of 14 months commencing January 2012, followed by the demolition of the existing bridge. In broad terms the programme will be:

- Jan to Feb 2012 — Mobilisation and temporary causeways
- March to June 2012 — Piling, piers and abutments
- July to Sept 2012 — Deck beams and slabs
- Sept & Oct 2012 — Swing span and M&E
- Nov to Feb 2013 — Railings, lighting, surfacing, commissioning
- March 2013 — Open bridge
- March to May 2013 — Demolish existing bridge

2.10.2 Site Compound, Traffic Management and Vehicles Routes to Site

The site compound will be established in the Lower Beach Road public car park, and will comprise of cabins and storage area within a secure fenced location. Power, data and water supply connections will be made via statutory service providers. Vehicle and pedestrian access to the properties in Lower Beach Road will be maintained. The route to site will be via the A259, Beach Green and Riverside Road.

2.10.3 Temporary Causeways

Two temporary causeways from the north and south shores will be installed across the salt marshes to assist with the construction works. These will be 10m wide and constructed of free draining 150mm stone topped with compacted sub-base material to form the working platform. The north and south causeways will be approx 30m and 65m long respectively, and the surface level for both will be above mean high water level. On completion they will be completely removed.

2.10.4 Piling

Two types of piling will be used in the works; sheet piling at the end abutments and bored/driven piles for the 7no intermediate piers. The sheet piles will be driven with a track mounted high frequency hydraulic vibratory hammer producing approx 75dBA at 15m. The steel monopiles for the piers will be installed either by auger boring and vibrating the casings, or by pre-augering and driving the casings. A combination of land-based plant (from the causeways) and marine based plant from jack-leg barges will be used. Working hours will be 8.00am to 8.00pm as agreed with the local EHO. The barges may be moved only outside these hours to suit the tides.

2.10.5 Deck

The new deck comprises a reinforced concrete slab supported by steel plate girders spanning between the piers. The beams will be installed by crane working either from the causeway or from jack-leg barge. When the beams are being installed at the northern end short term closures of the existing footbridge may be required for safety when working overhead. The deck will be reinforced concrete, either pre-cast units with concrete infill/topping or cast insitu on temporary/permanent formwork. The insitu concrete will be delivered in ready mixed wagons and pumped into position.

2.10.6 Opening Span

The opening section of the new bridge comprises a 52m long balanced rigid-stayed all steel span rotating about a central pier. When open this will provide a 16m wide navigable channel. This span will be fabricated off-site in two 26m long sections, craned into position and then welded to form a single unit.

2.10.7 Finishes & Commissioning

Temporary edge barriers will be fitted to the deck during construction. These will allow finishing work (e.g. surfacing, joints, M&E) to proceed safely. As works conclude the temporary barriers will be progressively replaced by the permanent glass parapets.

2.10.8 Demolition of Existing Bridge

The existing bridge will not be demolished until the new bridge has been completed and opened. Prior to demolition the bridge will be decommissioned by removing the retractable opening span and lighting, and the southern causeway will be re-aligned nearer to bridge. The demolition will involve a combination of cutting, breaking and lifting. The main spans will be craned out after the ends have been released by munching and saw cutting. The piers will then be broken down to below estuary bed level. Both land based and marine based plant will be used. Protective timber mats will be used as required, and all arisings removed from site.

3. Access

3.1 INTRODUCTION

This section shall consider the convenience of the proposed development and inclusive access including considerations of access for everyone on equal terms regardless of age, disability, ethnicity or social grouping in line with the Commission for Architecture and the Built Environment (CABE) guidance.

3.2 CONVENIENCE OF ACCESS

The Shoreham Harbour Footbridge project shall connect to the existing footpaths located north and south of the bridge providing convenience through direct links to the existing footpath and cycle network of Shoreham beach and Shoreham-by-Sea Town.

3.3 INCLUSIVE ACCESS

The replacement bridge has been designed to Sustrans standards and a clear deck width of 4m is proposed allowing for both pedestrian and cyclist movement. Parapets have been set at 1.6m to meet Sustrans safety standards and ensure maximum visibility when using the bridge.

Current guidance for a bridge of the type proposed is not to segregate pedestrians and cyclists. The bridge deck will therefore not incorporate marking to segregate use. A 4m wide deck is considered perfectly adequate to ensure the safety of all users.

The design does not include any restrictions or barriers to discourage inappropriate use (for instance motorcycles) as current best practice recommends that the impact of such barriers upon legitimate users (cyclists, pushchairs and wheelchairs) be weighed against the potential for inappropriate use. In the case of the proposed Shoreham Harbour Footbridge it is felt that the impact of the type of barriers needed to effectively prevent inappropriate use will exclude legitimate users from the bridge and will act as barrier to connectivity.