

GUNSITE SEAWALL, JERSEY

ENVIRONMENTAL STATEMENT

SEPTEMBER 2015

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ENVIRONMENTAL STATEMENT

Transport and Technical Services, States of Jersey

Project no: 3512000H-HHE
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LIST OF ABBREVIATIONS

SoJ	States of Jersey
ES	Environmental Statement
TTS	Transport and Technical Services
EIS	Environmental Impact Statement
AOD	Above ordnance datum
LiDAR	Light Detection and Ranging
ICZM	Integrated Coastal Zone Management
IWMP	Integrated Water Management Plan
HGV	Heavy goods vehicle

1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 This Environmental Statement has been prepared by WSP | Parsons Brinckerhoff on behalf of the States of Jersey (SoJ), in respect of the proposed flood alleviation improvements to the seawall at Gunsite Café, Beaumont, Jersey.
- 1.1.2 States of Jersey (SoJ) have identified the need to alleviate flooding which occurs at the Beaumont junction and La Route de la Haule. This comes after storms in January and February 2014 repeated the damage done to St Aubins and La Rue de Haule in 2008.
- 1.1.3 The primary cause of the flooding in 2014 was the overtopping of the sea wall to the east of the Gunsite Slip. The wall was originally part of the WW2 German military defences built not to stop the sea, but as a defence against seaborne invasion. The wall is low and has a rounded top, which does not stop water overtopping during a storm at high spring tides.
- 1.1.4 Flooding at the Beaumont junction has caused damage to a number of residential and commercial properties. Furthermore there is no separate surface water drainage system in the area and any seawater reaching the Beaumont area must be pumped to the sewage treatment plant.

1.2 PURPOSE OF THIS REPORT

- 1.2.1 This Environmental Statement (ES) presents the findings from a desk based study and a site visit on 25th August 2015. It considers the environmental impact the proposed food alleviation scheme will have. Section 3 describes the sea wall site and the surrounding area. Section 4 describes the proposed flood alleviation scheme. Section 5 sets out the assessment of each of the topics relevant to the proposed scheme. Section 6 provides a summary and conclusion.

1.3 LEGISLATIVE FRAMEWORK

- 1.3.1 Article 13 (1) of the Planning and Building (Jersey) Law 2002 relates to the environmental impact of proposed development. It requires the submission of an Environmental Impact Statement (EIS) in conjunction with an application for planning permission under two circumstances as follows:
- for development that falls within a class of development prescribed for the purpose of this sub-paragraph; or
 - Where the Minister is satisfied that, if the proposed development were to be carried out, it would be likely to have a significant effect on the environment of Jersey or elsewhere.
- 1.3.2 Article 2 of the Planning and Building (Environmental Impact) (Jersey) Order 2006 provides that proposals for development specified within Column 1 of Schedule 1 to the Order (apart from those circumstances under which the qualifying criteria defined within Column 2 are not achieved) comprises 'prescribed development' for which an EIS will be required under the provisions of Article 13(a) of the Planning and Building (Jersey) Law 2002 referred to above.
- 1.3.3 The proposed works for the flood alleviation scheme do not fall within Column 1 of Schedule 1 to the Order, and are therefore not classed as 'prescribed development'. As such a full EIS is not required for this scheme.

2 SITE AND SURROUNDINGS

2.1 ST HELIER

- 2.1.1 The proposed works are located approximately 4.5 km from St Helier.
- 2.1.2 St Helier is one of the twelve parishes of Jersey, the largest of the Channel Islands in the English Channel. St. Helier has a population of about 33,500, approximately 34.2% of the total population of Jersey.
- 2.1.3 The Port of Jersey is located in St Helier with 98.6% of all goods entering Jersey via the port.
- 2.1.4 La Collette waste facility is located in St Helier, and the likely receptor of any waste materials resulting from the construction of the proposed scheme.
- 2.1.5 The A1 and A2 coastal roads link St Helier with St Aubin and provide the main commuter route linking Jersey Airport and St Helier.

2.2 ST AUBIN AND ST AUBIN'S BAY

- 2.2.1 St Aubin is at the western end of St Aubin's Bay, opposite St Helier to the east, and has the island's second largest harbour and town. The proposed scheme is located approximately 1.5km to the east of St Aubin.
- 2.2.2 St Aubin's Bay covers the central part of Jersey's south coast and has a long sweep of unbroken sandy beach from St Helier Harbour to St Aubin's Harbour.
- 2.2.3 Only the highest of tides cover all of the sand and at low tide the sea retreats approximately 300 metres to open up an expanse of beach.

2.3 BEAUMONT

- 2.3.1 Beaumont is located on the southern coastline of the parish of St Peter, Jersey and is approximately 4.5km from St Helier, and 1.5km from St Aubin.
- 2.3.2 Beaumont is located where the southern end of La Route de Beaumont (A12) and La Route de la Haule (A1) join.
- 2.3.3 The area comprises residential development and small to medium commercial units. There are numerous fields surrounding the urban development within the area which are separated by trees and hedgerows.
- 2.3.4 Beaumont leads onto the adjacent south facing beach via access points in the existing sea wall.
- 2.3.5 There are two watercourses (unnamed) that run south through the area under La Route de la Haule (A1) and drain into the sea.

2.4 SITE

- 2.4.1 The site (Figure 2.1) currently consists of residential dwellings and associated gardens and a small SoJ owned car park with approximately a 25 vehicle capacity. There is further on-street parking on the Gunsite Slip Way.

- 2.4.2 The site includes both a public footpath with access onto the beach, and a designated cyclepath.
- 2.4.3 The site is within 50 metres of the sea at high tide.

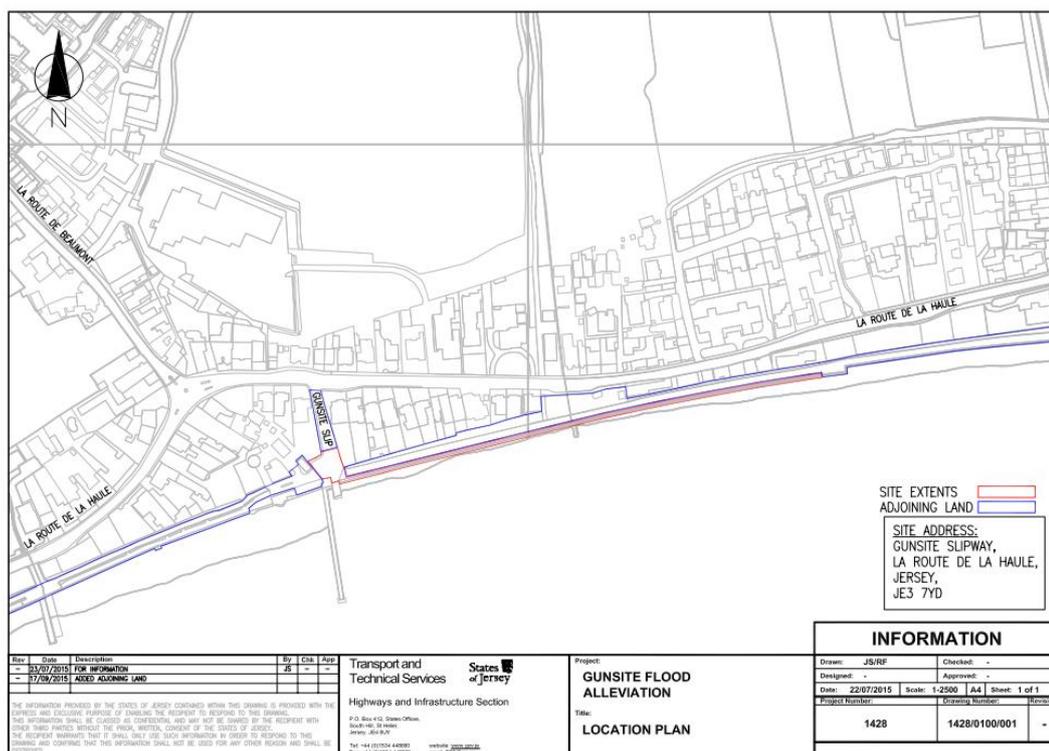


Figure 2-1 Site Location Plan

- 2.4.4 Beaumont Tower is a fortification tower originally built to defend St Aubin's Bay, and is situated directly adjacent (east) to the site.
- 2.4.5 There are also a number of commercial units within close proximity of the site including the Gunsite Café, Anna Trigg Bridal Shop, The Goose Pub, Beaumont Car Sales, and STS Graphics.
- 2.4.6 The seawall itself was built as a coastal Pansemauern (anti-tank wall) during the German Occupation and is now over 60 years old. The wall was originally constructed for military defence, not as a flood prevention measure, and is in need of repair due to tidal attrition.



Figure 2-2 Photograph showing current condition of seawall

3 DESCRIPTION OF THE SCHEME

3.1 FLOOD ALLEVIATION SCHEME

DESIGN

- 3.1.1 The cause of flooding at the Beaumont junction is sea water overtopping the sea wall between the Perquage car park and the Gunsite slip. When a southerly storm coincides with a high tide, waves overtop the sea wall east of the Gunsite slip. The sea wall in this area is relatively low and has no wave return recurve. Flood water then drains along the promenade, or La Route de la Haule, to the low point at the Beaumont junction.
- 3.1.2 The length of wall to be raised is from the Gunsite Café slipway heading east for 330m which will take the new wall beyond Le Perquage Car Park to the first part of the sea wall with a higher construction.
- 3.1.3 The wall will be raised and reshaped to deflect the waves back into the sea thereby reducing the frequency of overtopping onto the promenade. This is commonly called a recurve wall although the shape of the wall on this occasion has been designed to match the existing shape found adjacent to the Gunsite slip. This is a common shape of sea wall found around the Island and is similar to modern sea wall construction. The cross section diagram (Figure 4.1 below) shows the proposed changes to the profile of the wall. The existing promenade and wall is at a higher level to the west of the Gunsite slip, and there are drainage gullies that help clear water further to the east of the proposed works.

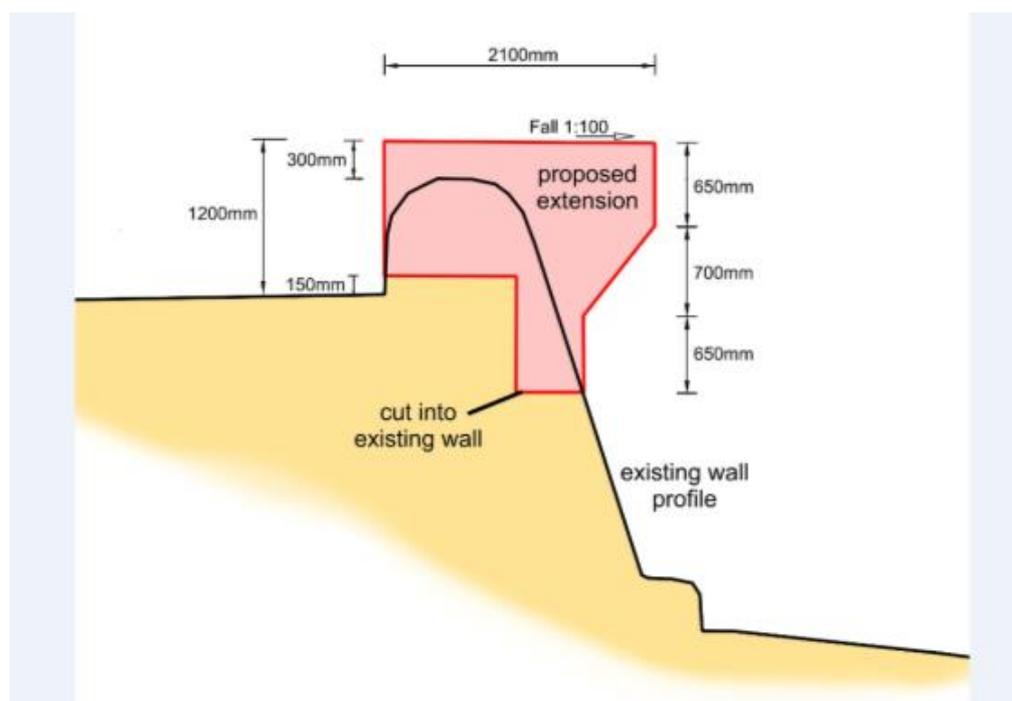


Figure 3-1 Proposed Cross Section

- 3.1.4 It is proposed to raise the existing sea wall height by 0.3m. Given today's sea level it is calculated that this will reduce overtopping by 70% compared to the existing situation. If a 0.3m rise in sea

level occurred in 2064 overtopping volumes would be broadly similar to that experienced today with the existing wall profile.

- 3.1.5 Currently, when storm conditions indicate that overtopping is likely, sandbags are placed across the access road to the Gunsite to prevent, or at least control, flood water. As part of the proposed flood alleviation scheme, a permanent flood gate will be constructed that will remain open until it is needed, and can be closed within minutes when an orange weather warning is issued by the Met Office. The gate and the wall will be designed to hold back water as with the current temporary sandbag arrangement.

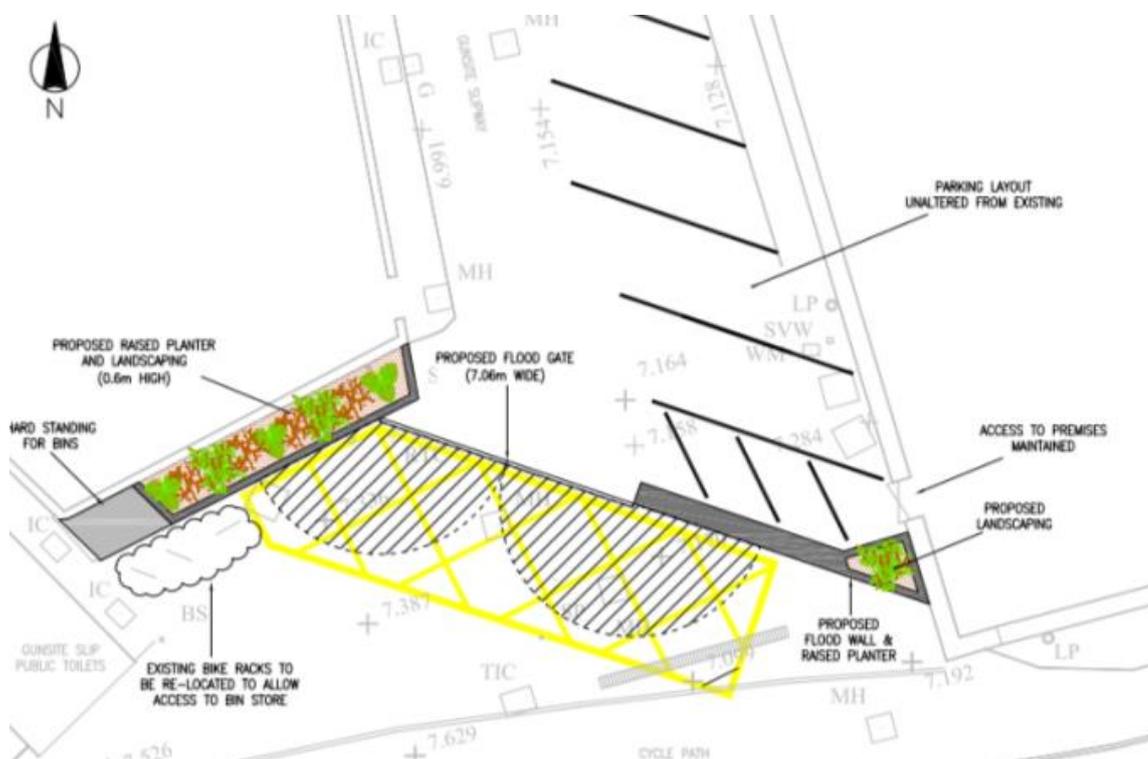


Figure 3-2 Proposed Floodgate

- 3.1.6 An allowance has been made in the design of the proposed wall to allow it to be raised a further 0.3m in the future should it be required (to 9.0m AOD). This will be achieved by providing threaded reinforcement bars which can be connected to at a future date. The threaded bars would be protected by wax and a plastic sleeve and cast into the concrete wall. In the future the bars could be uncovered (by diamond drill coring) extended and the wall raised an additional 0.3m.

CONSTRUCTION

- 3.1.7 It is intended to remove the top section of the wall and part of the face. One option is to remove the concrete drilling holes at 0.5m sections and use an expanding grout to break the existing concrete free. Hydro demolition of the existing concrete was considered, but was discounted due to noise as well as being a potential hazard to members of the public. Other non-percussive removal techniques may be discussed with the contractor.
- 3.1.8 Stainless steel reinforcement bars will be anchored into the remaining wall. Stainless steel has been specified for its resistance to corrosion. It is expected that over the lifetime of the wall its initial higher cost will be offset by increased durability.

- 3.1.9 Formwork will be constructed to form the shape of the angular recurve. The new wall will be formed by pouring concrete in one 14m section at a time. This will need two ready-mix concrete truck loads.
- 3.1.10 It is intended to use a formliner in order to increase the durability of the new concrete surface. This has been used successfully on sections of the St Ouens Bay sea wall. It provides a smooth surface with increased hardness and density. It also increases the concrete's resistance to chloride and carbonation, further protecting the reinforcement.
- 3.1.11 The contractor will work on an approximately 30m section of wall at one time. This will allow the contractor to prepare one 14m section of wall to be removed

PROJECT NEED AND SITE SELECTION

- 3.1.12 A survey of the whole Beaumont area, together with the evidence from photographs (figured below) taken during the storms and floods, clearly shows that the ground slopes from the promenade down to the main road. Water overtopping the wall flows in vast quantities inland flooding the lowest point around the Beaumont junction.



Figure 3-3 Photograph showing overtopping of seawall



Figure 3-4 Photograph demonstrating flooding as a result of overtopping



Figure 3-5 Flooding at Beaumont Junction

- 3.1.13 SoJ commissioned a LiDAR survey which picked up the ground levels in the surrounding area (Figure 4.6 below).

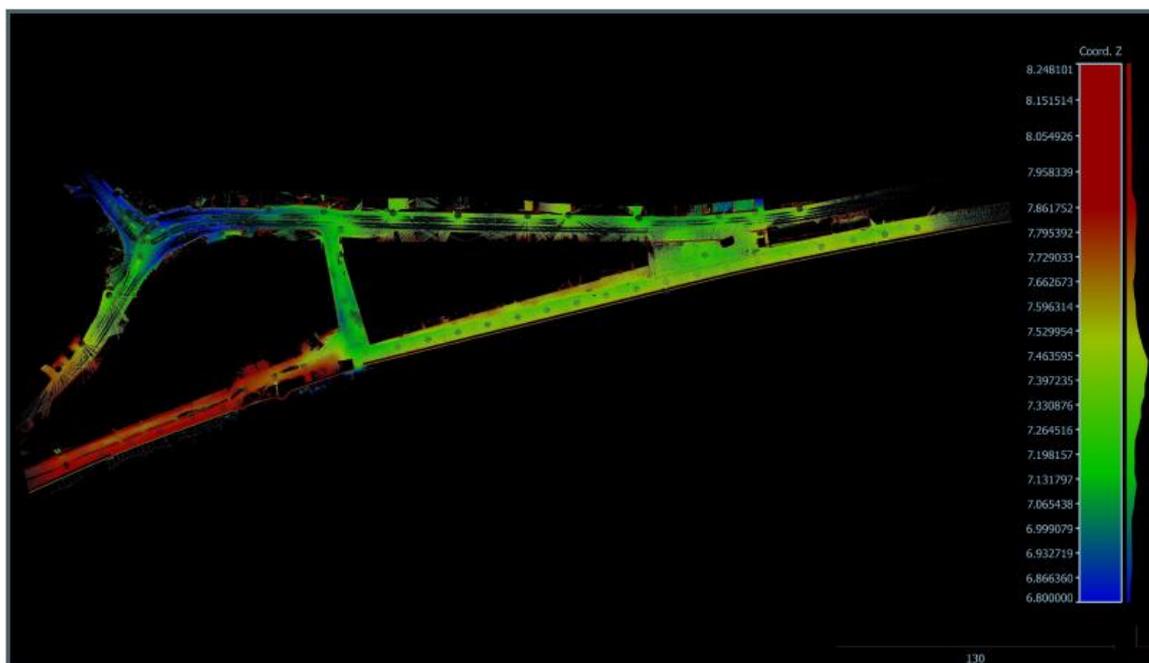


Figure 3-6 LiDAR Survey

- 3.1.14 Relatively high ground levels are shown in red and low areas in blue. It shows that the ground levels from the promenade fall back towards either the Gunsite access road, or La Route de la Haule. This leads any water overtopping the sea wall to flow to the low point at the Beaumont junction.
- 3.1.15 The relatively low sea wall height in this area and a lack of a wave return recurve leads to overtopping of the wall when storms coincide with high tides. As sea levels rise and if the

frequency and intensity of storm events increase it is likely that the flooding at Beaumont will become more frequent.

- 3.1.16 Furthermore, when waves are thrown over the wall during storms and strong winds they also contain debris and seaweed that very quickly block up existing drains and make the flooding situation much worse.

4 ENVIRONMENTAL CONDITIONS

4.1 ECOLOGY

Marine Habitat

- 4.1.1 The Bay of St Aubin contains valued marine ecosystems including offshore reefs and mud/sand flats that support a rich and varied ecology. Intertidal marine habitats are listed as a Key habitat under the Biodiversity Strategy for Jersey 2000 and therefore afforded special protection under Island legislation and policy. The Bay also supports important populations of over wintering migrants, particularly significant numbers of Brent geese, which reside within the bay between November and April.
- 4.1.2 Potential short-term impacts from the proposed demolition/construction works include the accidental release of pollutants/contaminants into the marine environment. This may result in nutrient enrichment and toxic effects to marine ecosystems and their associated organisms. In the absence of mitigation, this impact could result in an adverse effect of up to a low magnitude (IEEM categorisation), which would be significant at a Local level.
- 4.1.3 Over wintering bird species do not use the upper beach habitats, instead favouring lower intertidal mud habitats, consequently they are likely to be at least 80m away from the proposed working area at low tide. The anticipated impacts of works (noise/light/general disturbance) are considered to only minimally impact upon valued wading bird populations, therefore no significant effects are anticipated.
- 4.1.4 Overall due to the potential risk of the accidental release of pollutants into marine environment, the adverse effects of the proposed works (in the absence of mitigation) is considered to be of a low magnitude, significant at local level.

Sand Dune

- 4.1.5 Sand dunes are listed as key habitat under the Biodiversity Strategy for Jersey (2000), as they provide a valuable habitat for a wide range of protected species. The remnant of sand dune present within close proximity to the working area is considered to be in poor condition and fragmented from other habitats, however it is feasible that it may support low numbers of amphibians, reptiles or small mammals.
- 4.1.6 Potential impacts of the proposed works may result in the disturbance to or mortality of protected fauna, if site works were to overspill from the proposed working area. Due to the extent of the sand dune habitat and its isolation from other habitats, it is anticipated that it is likely to support only a small number of protected species. The predicted magnitude of an adverse event is low and is only considered in relevance to the context of the zone of influence of the proposals. As such the adverse effects are expected to be not significant.
- 4.1.7 The disturbance of small mammals, amphibians and reptiles, should they be present within the sand dune habitat, from the construction activities (noise, light and vibration) is considered likely to have an adverse effect at low magnitude and therefore is considered not significant.
- 4.1.8 The Ecological Assessment Report is at Appendix A.

4.2 WATER ENVIRONMENT

- 4.2.1 Jersey operates an Integrated Coastal Zone Management (ICZM) Strategy which seeks to secure better management and informed decision-making on coastal issues so that coastal and marine resources are managed sustainably.
- 4.2.2 The proposed scheme falls within a Shoreline Zone, which recognises the areas significant resource and asset to the surrounding built-up area.
- 4.2.3 The seashore in Jersey is subjected to dramatic change every 6 hours due to the Island's unique position within the Bay of St Malo. During spring tides the tide can rise and fall in excess of 40 feet.
- 4.2.4 In 2013, the Department of the Environment commissioned Atkins Ltd to undertake an Integrated Water Management Plan (IWMP), so that the States of Jersey can better plan and manage the Island's water resources and the important ecosystems which rely on it. The second part of this Plan is due to be delivered in 2015.
- 4.2.5 The site falls within the La Haule and St Peter's Valley Water Management Area, which is classified as 'Moderate' which indicates that the relevant biological quality elements are moderately changed from natural conditions.
- 4.2.6 A Water Framework Directive based system of coastal monitoring and classification has been developed for the Southern Coastline of the Island (including St Aubin's Bay) which assigns a class for a range of individual elements.
- 4.2.7 Individual assessments show the Southern Coastline coastal water is achieving High status for dissolved oxygen, phytoplankton and seagrass. Good status is being achieved for total inorganic nitrogen and macroinvertebrates. The seaweed assessment indicates Moderate status, and it is understood that the failure to achieve Good can be attributed to the ecology data (opportunistic and macroalgae assessments). This is predominantly the growth of *Ulva*, indicating the potential impact of inflowing nutrients from land based sources.
- 4.2.8 The proposed scheme is unlikely to have an impact on the water environment, or beach erosion.
- 4.2.9 The scheme is designed to benefit the local area with a reduction in overtopping and resulting flooding on the land side of the sea wall.

4.3 LANDSCAPE AND VISUAL

- 4.3.1 St Aubin's Bay covers the central part of Jersey's south coast and has a long sweep of unbroken sandy beach from St Helier Harbour to St Aubin's Harbour. Only the highest of tides cover all of the sand and at low tide the sea retreats approximately 300 metres to open up an expanse of beach.
- 4.3.2 Raising the seawall will reduce the view over the wall for pedestrians and property owners backing onto the promenade although it will still be possible to see over the wall from the promenade. However, the height of the wall is calculated to reduce 70% of the overtopping water compared to the existing situation and reduce the chances of flying stones and debris and therefore the visual impact must be weighed against the benefits of flood alleviation and the economic cost of flooding.
- 4.3.3 An increase of 0.3m to the sea wall is the optimal height to achieve reduced flooding from overtopping by waves, with as minimal as possible visual impact for adjacent residents, and users of the foot and cycle paths. The impact will therefore be not significant.

4.3.4

Figure 4.1, 2 and 3 show the impact of promenade users following implementation of the scheme.

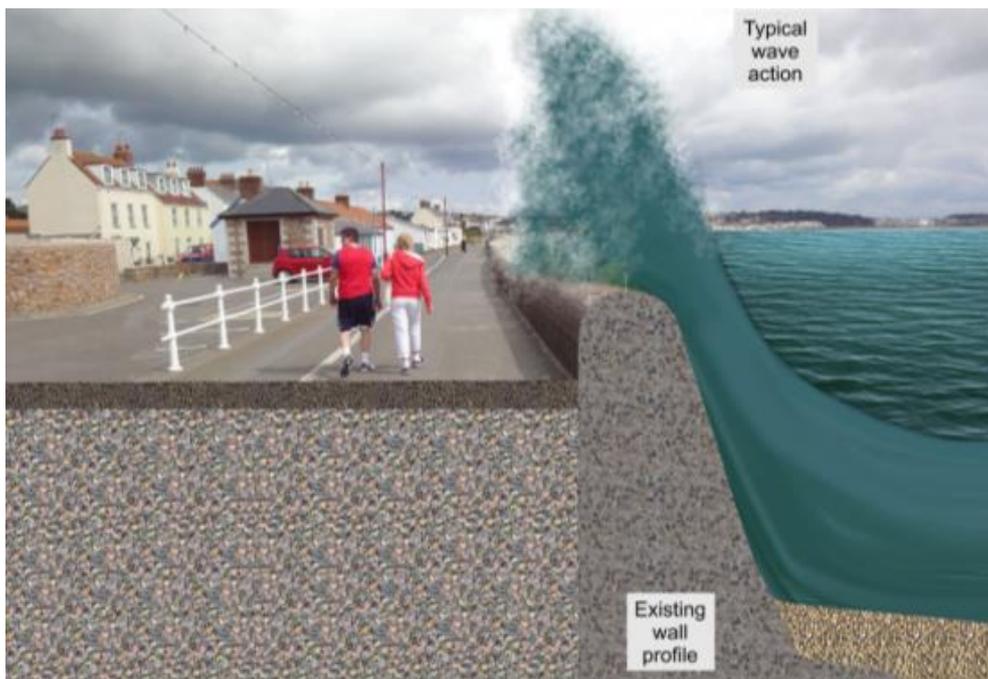


Figure 4.1 Existing Wave Action

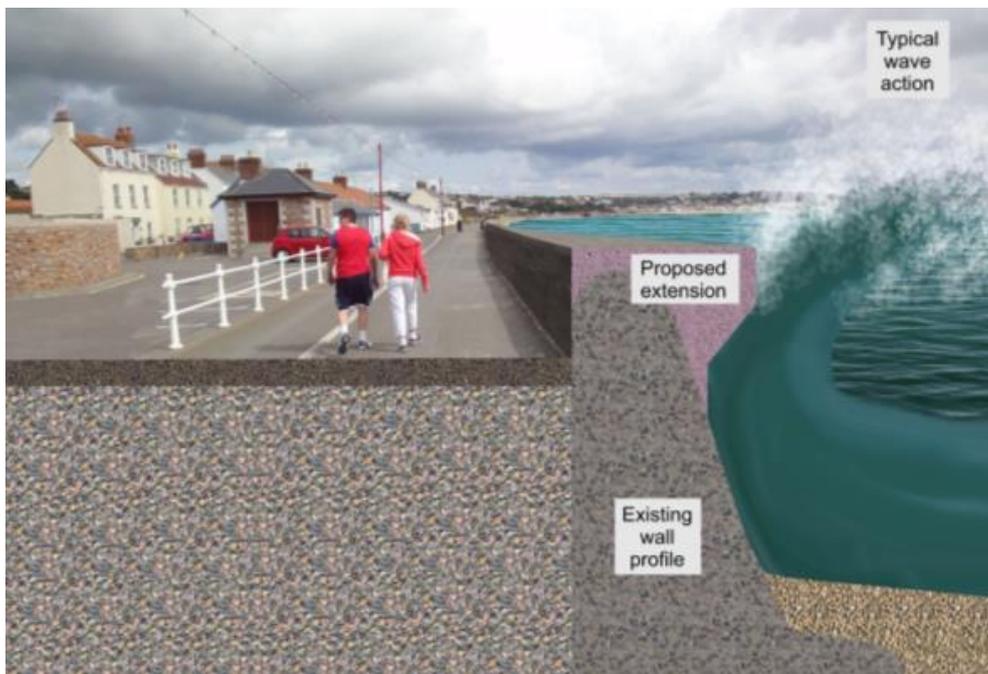


Figure 4.2 Proposed Wave Action

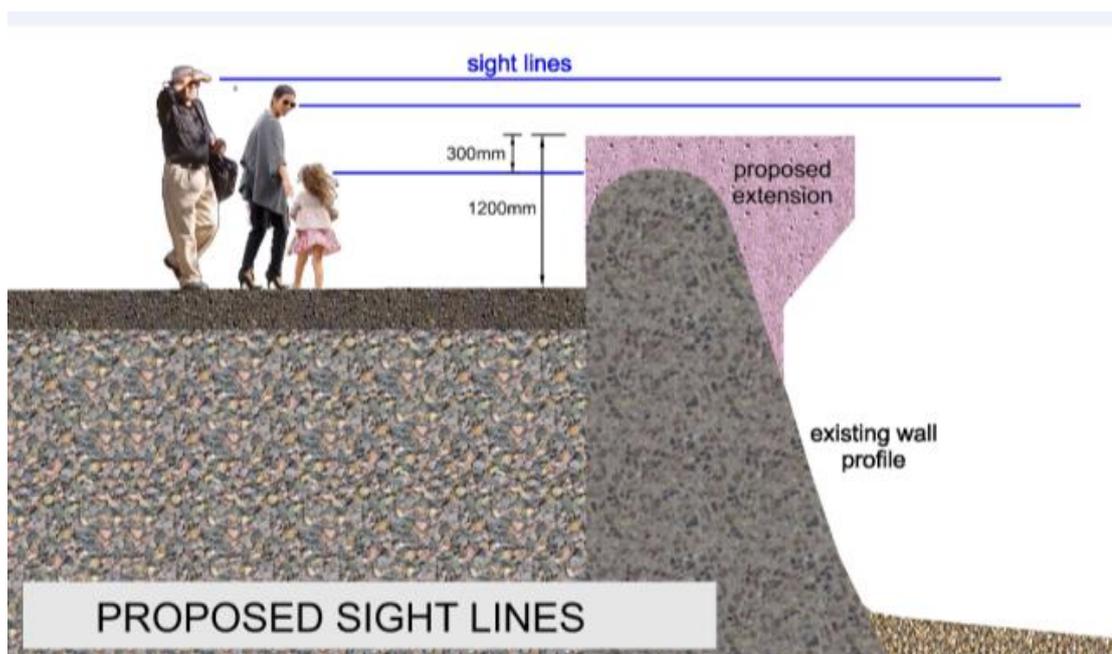


Figure 4.3 Propose Sight Lines

- 4.3.5 Whilst not part of this application, the wall will be designed to be raised another 0.3m at a later date when sea level rise and storm frequency increases in the future.

4.4 HERITAGE

- 4.4.1 The wall itself was built as a coastal Panzermauern (anti-tank wall) during the German Occupation and is now over 60 years old. As it was constructed for military defence and has no wave return recurve, and is need of repair.
- 4.4.2 Beaumont Tower, located approximately 65m from the proposed sea wall works, is an Anglo-Jersey military structure and was built circa 1780s. It is significant as an integral part of a group of surviving Conway towers in Jersey that not only illustrates the changing political and strategic military history of the Island in the late 18th and 19th century, but represents a turning point in the history of defence strategy across Europe, and global trends in the history of war. The Beaumont Tower is a 'Potentially Listed' building (historic site reference PE0177), meaning its status as a listed building is currently being assessed.
- 4.4.3 There is another 'Potentially Listed Building' located 50m from the sea wall which is a residential property named "Seaside" (historic reference LA0060) providing a good example of a mid-late C19 coastal cottage, retaining historic character.
- 4.4.4 Raising the seawall will involve partially cutting the current top off of the existing seawall, which is a part of the WWII defence works for the island, and casting a new shape to the wall. The existing wall currently requires significant repairs to the front and top. The raising of the wall will enable these repairs to be corrected at the same time, with repairs being matched as closely as possible to the existing concrete.
- 4.4.5 As the wall itself is not listed, there will be no direct impact on designated heritage assets. The impact on the setting of the two potentially listed properties will be limited and therefore negligible. The existing seawall will be photographed for the archives in order to keep a record of its original structure.

4.5 NOISE AND AIR QUALITY

- 4.5.1 There are a number of residential and commercial properties located in the immediate vicinity of the proposed sea wall works which may be temporarily affected by noise and dust resulting from construction activities. Noise was a consideration when choosing the method of construction as evidenced by hydro demolition being discounted.
- 4.5.2 Best practice, as outlined in the SoJ “Guidelines on noise control for Construction Sites” will be followed to minimise such impacts including limiting working hours to 08:00 to 18:00 Monday to Friday, 08:00 to 13:00 on Saturdays, and no working on Sundays or Bank Holidays without prior approval.
- 4.5.3 The main air quality issues in Jersey relate to emissions from motor vehicle traffic (NO₂, PM₁₀ and VOCs) and a number of potential localised traffic related pollution “hot spots” have been identified, including Beaumont (Section 9.25 of the Revised 2011 Island Plan). It is not anticipated that the proposed works will significantly contribute to a decrease in air quality, but best practice will be followed in managing dust during construction.

4.6 TRAFFIC

- 4.6.1 La Route de la Haule (A1) is a busy commuter route into St Helier, and will be the main route for construction traffic accessing the proposed site. The two main travel routes for construction traffic are likely to be between the site and La Collette Waste Disposal Facility (St Helier) for waste disposal, and between the site and the Port of Jersey (St Helier) for incoming materials and ready-mixed concrete from one of the quarries in the north of the Island.
- 4.6.2 According to the latest traffic survey data (La Route de la Haule, east of Beaumont-west of bus stop) collected by TTS between 16th-24th April 2015, on weekdays traffic heading east peaks at 08:00, and traffic heading west peaks at 19:00.
- 4.6.3 It is predicted that a maximum of 20 two-way movements per day of HGVs (including contractor vehicles) will enter and leave the site. Therefore, construction vehicles would represent an increase of 0.1% to traffic heading east, and 0.2% increase to traffic heading west on a daily basis.
- 4.6.4 To mitigate the impacts of additional traffic resulting from the construction of the proposed scheme, construction traffic will plan journeys to occur outside of the peak traffic periods identified above where practicable.
- 4.6.5 There is unlikely to be any further impacts post-construction to traffic as a result of the proposed development and therefore the effects will be negligible.

4.7 CONTAMINATED LAND

- 4.7.1 It is unlikely that contaminated land will be encountered by the proposed works, particularly as works will not involve any disturbance of the ground.

4.8 SOCIO-ECONOMICS

- 4.8.1 The promenade running alongside the sea wall provides a well-used leisure space, with a footpath and cycle path, attracting both local residents and tourists.
- 4.8.2 The Gunsite Café operates approximately 50m from the proposed sea wall works, with various other small and medium-sized businesses located along La Route de la Haule.

- 4.8.3 It is likely that works will result in the width of the promenade being temporarily reduced during construction. However, wherever possible the promenade will remain open to allow its continued use by cyclists and pedestrians. Ideally works will take place outside of the main tourist months to ensure minimal impact on the general public.
- 4.8.4 A local contractor will be employed, with ten people on site for six months, supervised by TTS providing employment opportunities. There will therefore be both beneficial and adverse effects resulting from the construction phase, which will be a neutral effect overall.

5 SUMMARY AND CONCLUSIONS

- 5.1.1 Raising the sea wall can greatly reduce the amount of overtopping water getting on to the promenade and draining to Beaumont. The height of the wall has been carefully considered to provide maximum protection against storms, balanced with maintaining visibility for local residents and people using the promenade. A wall height of 1.2m will be 0.3m higher than existing and still provide a clear view across the bay for most promenade users. Whilst not part of this application, the wall has also been designed so that it can be raised in the future by another 0.3m.
- 5.1.2 It is anticipated that there will be some temporary, short term, negligible adverse impacts resulting from the construction of the new sea wall, including noise, dust, traffic and restricted access. However, these impacts can each be mitigated through the use of standard best practice measures during the six-month construction phase.
- 5.1.3 The long term impacts resulting from raising the sea wall are mostly beneficial resulting in the reduction of flood events in the Beaumont area

