

**REPLY BY THE PRESIDENT OF THE COMMITTEE *FOR THE*
ENVIRONMENT & INFRASTRUCTURE
TO QUESTIONS ASKED PURSUANT TO RULE 14 OF THE
RULES OF PROCEDURE BY DEPUTY NEIL INDER

REVISED ANSWER TO QUESTION 9**

Question 1

Is the power point presentation underpinned by a **full** report from Royal HaskoningDHV? And if so would the Committee release it for independent scrutiny?

Answer

The power point presentation used during two public presentations on 12th June 2017 is based on the report 'Guernsey Coastal Defences: Flood Risk Assessment Studies', Volumes I and II, March 2012, Royal HaskoningDHV which is on the States of Guernsey website. The estimated costs were reviewed and updated more recently to ensure they reflected local Guernsey rates for the proposals.

<https://www.gov.gg/coastalmanagement>

Question 2

How reliable are the presented profiles which appear to show a decline in beach levels over a period of 119 years?

Answer

The slide 'An historical perspective' shows L'Ancrese Bay coastline and the mean high and low water marks – note, not beach profiles - detailed on maps of 1898, 1938 (pre-WWII wall) and 2017. Royal HaskoningDHV has based the prediction of likely beach retreat on the historic mapping in addition to records of annual beach levels collected since 2000 (spring and autumn) combined with observations (photographs and aerial photography) to predict a possible position of mean high water in the absence of a wall.

Question 3

If the beach levels have been falling, where has the sand gone and is it not overly optimistic to expect sand supply from the current beach to the groyne area?

Answer

No, it is not optimistic. Beach level surveys taken annually in spring and autumn since 2000 provide an indication that the volume of sand within the bay has remained reasonably consistent during this 17 year period. Surveys show that there is localised loss of sediment during winter months from the eastern end of the bay. This loss during winter is due to the position of the wall in front of the high water mark and is a prime factor in the undermining of the wall here. During summer months with a general less aggressive wave action the sand levels re-accrete.

Question 4

Were any cores or other soundings taken to establish the depth and distribution of sand on the foreshore and the sand apron?

Answer

The works to date utilise archive information, including historic mapping, beach levels surveys undertaken since 2000, detailed site investigation (probe drilling) conducted during 1995, and various photographic records. Detailed site investigation work will be undertaken after approval for the managed realignment has been given. It is not sensible to do them in advance with the possibility of incurring unnecessary costs.

Question 5

What **hard** evidence is there that sand supply will take place from the current beach to the newly created beach?

Answer

The beach level surveys from the last 17 years demonstrate rejuvenation of the upper section of the beach is highly likely to occur. The position of the wall has generated conditions where the potential volume of deposits are unable to remain at the upper part of the beach. These deposits will migrate back up the beach in the absence of the wall. There is no hard evidence to suggest that this will not occur. It should also be noted that at the edge of the beach in the centre of L'Ancrese bay there is a 25m length of naturalised coastal bank/dune (on the former site of the central battery opposite Tower 7). This natural area is well covered in grass and dune vegetation and came through the 2014 storms with no damage.

Question 6

Is there **hard** evidence for the existence of an off-shore reservoir of sand that is about to move onshore?

Answer

Again, the beach level surveys from the last 17 years demonstrate rejuvenation of the upper section of the beach is highly likely to occur and the existence, or not, of an off-shore 'reservoir of sand' is not an issue here. It is the position of the wall which has generated conditions where the potential volume of deposits are unable to remain at the upper part of the beach. These deposits will migrate back up the beach in the absence of the wall. There is no hard evidence to suggest that this will not occur. It should also be noted that at the edge of the beach in the centre of L'Ancrese bay there is a 25m length of naturalised coastal bank/dune (on the former site of the central battery). This natural area is well covered in grass and dune vegetation and came through the 2014 storms with no damage

Question 7

What underlies the sand cloaking the beach apron and foreshore and is it competent to bear the weight of the groynes? Is the intention to dig down through the sand and find the Guernsey natural granite?

Answer

As previously stated, these site investigations will be undertaken subject to approval for the managed realignment. However, the design of the groynes is not dependent upon the existence of rock beneath.

Question 8

Is it intended that sand derived from the dunes would move seaward into the new beach area? If not, how would this be prevented without hard engineering solutions?

Answer

In the early stages of a realignment there would be movement of stone, sediment and sand after the wall was removed whilst the new beach developed a natural gently sloping level. At Port Soif the sea runs out to its full extent on the highest tides with no disturbance to the dune behind. The Port Soif dune was eroded due to public use so large boulder armouring was placed above the high water mark in the 1970s, followed by fences erected to trap sand which successfully stabilise the dune. These measures have worked well and similar work could be undertaken at L'Ancrese if required.

Question 9

What will be the height of the groynes where they meet the retained sea wall?

Answer

The crest of the groynes, where they meet the retained sections of existing sea wall, will be approximately 2.5m lower than the top of the wall. The groynes are designed to have a crest height, on the seaward side of the wall, of +4.5m AOD (above ordinance datum*). The height of the wall along its length is approximately +7m AOD.

Additionally the policy letter includes two options for greater protection of the kiosk which would alter the crest height of the eastern structure, the western groyne would remain as described above (options below labelled as in the Policy Letter):

- option (b) would have the crest height of the eastern groyne on the seaward side at +6m AOD and an additional revetment protecting the kiosk with a crest height of +7m AOD (the height of the existing wall);
- option (c) would have the crest height of the eastern groyne on the seaward side at the eastern most end at +4.5m AOD, reducing to +4m AOD at the western end of the eastern groyne. The crest height of the additional revetment behind the wall protecting the kiosk would be at +6.0m AOD.'

* AOD = The height above mean sea level and is used as the official basis for height calculation on British maps.

Question 10

Have cores extending below current beach levels been extracted from the current sand dunes to demonstrate the quality of the sandy sediment that could transfer from the dunes into the new beach area?

Answer

No. As previously stated, detailed site investigations will be undertaken subject to approval for the managed realignment.

Question 11

Have cores been taken in the area immediately behind the sea wall, where construction work on the anti-tank wall may have disturbed and contaminated the dune sand?

Answer

No. As previously stated, detailed site investigations will be undertaken subject to approval for the managed realignment.

Question 12

How many of the four factors listed, namely the quality, availability, stability and retention of the new sand deposits, are **confidently assured** by the new scheme?

Answer

The primary deposits forming the new beach will be the existing sand reserves from the lower beach levels which are unable at present to deposit in the upper regions of the beach due to the position of the existing wall. The recovery of this sand provides assurance of quality. The quantity of sand that will be recovered and at what rate cannot accurately be determined, though the historic evidence would suggest there is no reason why this would not take place. The proposed scheme incorporating the groyne structures provides assurance of stability and retention of the sand deposits. At the duneland edge of the new bay we can use experience gained from work at Vazon Richmond to stabilise and retain sand on the beach through the installation of fencing and Marram planting. This addressed a previously severe nuisance from windblown sand which affected the residents and road users.

Question 13

In a response to a letter writer in the Guernsey Press, Deputy Brehaut, refers to 'specialist engineers'. Who are the specialist engineers and what is their relationship with Royal HaskoningDHV?

Answer

Royal HaskoningDHV is an independent, international engineering and project management consultancy with 135 years of experience. In 2017 the company was ranked 8th in the NCE100 – the top 100 most inspirational civil engineering practices.

Corporate website: <https://www.royalhaskoningdhv.com/en-gb>

2016 Annual Report:

<https://publications.royalhaskoningdhv.com/magazine/annualreport2016/coverpage/>

Question 14

Can the Committee provide us with examples of similar projects where there the ‘specialist engineers’ can demonstrate a successful scheme as per the Committee’ preferred option?

Answer

Royal HaskoningDHV has a long and recognised track record in the implementation of flood alleviation schemes in coastal and river environments. The portfolio of coastal engineering projects and studies include structural and non-structural solutions (nature driven design), coastal protection, offshore land reclamation, beach nourishment by dredging, closure of estuaries or lagoons, breakwaters, ports, access channels and coastal waterfront development.

Three project examples are provided to demonstrate implementation of successful schemes using rock armour and managed realignment of the coastline.

Lowestoft Coastal Management, Suffolk, UK: <https://www.royalhaskoningdhv.com/en-gb/united-kingdom/news/uk-news/royal-haskoningdhv-helps-to-provide-coastal-protection-for-lowestoft-beach/1491>

Borth Coast Protection Scheme, Ceredigion, UK:

<https://www.royalhaskoningdhv.com/en-gb/united-kingdom/projects/borth-coastal-protection-scheme/859>

Littlehaven Sea Wall, Tyne and Wear, UK:

<https://www.royalhaskoningdhv.com/en-gb/united-kingdom/projects/littlehaven-promenade-and-sea-wall/1311>

Question 15

I assume that Royal HaskoningDHV are contracted either on an adhoc or retained basis. Where are Royal HaskoningDHV costs for the scheme to date and what are the predicted costs for the scheme to completion? Is it a one-off cost or a percentage of the value of the contract? And are there any costs post completion such as monitoring for a period of years that the Committee are committing?

Answer

Royal HaskoningDHV are appointed under the SoG Standard Agreement for Consultancy Services – providing for staged delivery of the consultancy works

Initially Stages 1-2 (Site Visit/Delivery Plan and Site and Condition Survey: £15k – January 2016) and now Stage 3 Detailed design and specification, visualisations,

construction phase plan (£48k – April 2017) with additional options including elements of works supervision etc.

Post completion monitoring would be by Property Services and Land Management Services, with possible further technical input from Royal HaskoningDHV.

Question 16

What is the extent of the Royal HaskoningDHV contract with the States of Guernsey? When did it start? How are they retained? How long is the contract when will it be retendered?

Answer

There is no fee paid to consultants in order to retain them, any work is done based upon availability and tender.

Date of Receipt of the Question: 4 September 2017

Date of Reply: 8 August 2017