

**NEATH PORT TALBOT LOCAL DEVELOPMENT PLAN EXAMINATION
Hearing Sessions**

Baglan Bay

Briefing Note on Geomorphological Study (Examination Document ED031)

Submitted on behalf of **St. Modwen Developments Limited (SMDL)**
by **Savills (Reference: 0042)** with the support of **Atkins**

April 2015

Background

1. One of SMDL's key concerns with the LDP is the proposed EN1 (Undeveloped Coast) designation along the western edge of the Baglan Bay site. Our submissions to the Examination had referred to the absence of any evidence for the designation which relied on (in short) the claimed need to allow the dune system to migrate in land as part of a process of managed realignment. At the economy session (session 10 and 11, Matter 6) of the examination, the Council referred to a report which it said would support the designation¹.
2. The report was called the Crymlyn Burrows and Baglan Burrows Geomorphological Assessment and was issued in February 2104 by Kenneth Pye Associates. SMDL was given the opportunity to comment on the Assessment and this note provides those comments. It has been prepared with the assistance of Atkins (SMDLs technical and environmental adviser).

Main Points

3. A number of points are made in the Assessment (from its written sections and the key images it includes). These can be summarised as follows:
 - a) The Assessment does assess the dune systems that run along the western margin of Baglan Bay, but its focus is on the ecological and recreational management of this dune systems.
 - b) It does not measure the erosion of the dune system.
 - c) As a geomorphological study it does, however, provide a record of why the dunes take the form they do today. This is a useful overview of the change (and the processes behind this change) that has taken place in the area.
 - d) Page 12 of the Assessment which falls under the heading "Conclusions and recommendations for dune restoration" (and especially the second, third fourth and fifth paragraphs) contains the most helpful information. This includes references to:
 - i) the complexity of the Baglan Burrows
 - ii) the need for management and intervention there (and the identification of two specific areas where this can or needs to take place
 - iii) a slow rate of erosion within the dune system

¹ The EN1 designation has no connection to the provisions to be made for lapwings on the site or any other form of mitigation. This is being dealt with through the development management process and both the Council's and SMDLs responsibilities are clear (see the end of this note).

- iv) localised problems of sand incursion into the industrial area behind the dunes
- v) The need to control unauthorised access by motorbikes
- vi) The scope or potential for additional restoration

4. Page 12 of the report is attached as **appendix 1** to this note.

Analysis and Commentary

- 5. The six points above (i – vi), provide a useful basis to examine the implications of the Assessment for the EN1 designation.
- 6. Matters i and ii (dune composition and the need for management) raise two points. The first comes from the areas that the study recommends should be the focus of intervention. Two areas are identified and these are shown on pages 60 and 61 (page 60 is attached as **appendix 2** at the end of this report).
- 7. Area A is not of concern. Part of Area B sits alongside part of Baglan Bay. However:
 - a) Most of it lies alongside the ragworm/bait farm or the area to the south (beyond or outside the Baglan Bay area)
 - b) The small part that does lie alongside Baglan Bay is west of the previously developed area (it includes the dunes not the cleared petrochemicals complex)
 - c) It is much smaller and has no relationship to the extent of the EN1 area proposed in the LDP
- 8. The second point (on i and ii) comes from the measures proposed in these areas. The report describes these as:

“selective and environmentally sensitive control works to limit sand invasion into the industrial area behind,

and

to prevent further development of a shallow embayment in the shoreline where recreational pressure is most intense”.
- 9. This is not a proposal to allow the dunes to creep significantly backwards into the Baglan Bay area which is the premise behind EN1. It is a proposal for positive management in a specific area (rather than the realignment of the dunes over tens of years in an undefined way).
- 10. Turning to point iii, the Assessment confirms that erosion in this area is slow. The photographs on pages 48 – 49 show no significant change in dune location or extent opposite the Baglan Bay site or the adjacent Aberavon developed front. This is important as it is the only evidence of (low, slow or no) erosion before the Examination. Again, it provides no support for the width or extent of the EN1 designation proposed in the LDP. It also reinforces statements in the Shoreline Management Plan (the SMP) about the absence of risk associated with coastal erosion in this location.

11. Point iv is important as evidence of sand blow at the bait farm was referred to (as a reason behind the EN1 zone) at the Economy session. It is also the main reason for the Morphology assessment coming before the Examination.
12. It is clear from the report that this is occurring only where there is a gap in the dunes which has been forced (or man-made) to allow access for motocross bikes and vehicles. The sand is simply blowing back through the gap in the frontal dunes and this is shown (and written) on page 73 of the report (see **appendix 3** to this note). It is this gap (and any gaps like it) that the intervention described in the report and summarised above is designed to tackle. This also takes care of point v above.
13. With respect to point vi, the report does identify the scope for wider improvement. However, this is presented as an optional, not essential, measure and does not indicate the extent or width of area proposed in EN1. It is again important to remember that EN1 is designated in association with coastal realignment not environmental enhancement (which is the main focus of these wider measures).

Conclusions

14. Five main conclusions can be made from a review of the Geomorphology Report:
 - a) There has been no substantial recent change to the shape of the dunes. The only reference in the report to erosion is that it is occurring at a slow rate.
 - b) Recent changes to dune shape or condition at Baglan are a result of unauthorised recreation.
 - c) Any sand blow from the dunes (into the industrial area) is localised and connected to a gap that has been created for and by motorcyclists.
 - d) Intervention is proposed in a specific area to correct this (and prevent other gaps being formed).
 - e) This area is much smaller than the undeveloped coast designation (EN1) in the LDP and all of it is beyond that part of Baglan Bay that SMDL is concerned with.
15. There is therefore no connection between the Geomorphology report and the purpose or extent of Policy EN1 at Baglan Bay. The report supports our submissions that the EN1 designation should be adjusted to allow schemes to come forward across Baglan Bay over the life of the plan – even if (as we have suggested) those schemes include non permanent activities or are timed to allow wider consideration of the treatment of the western edge of Baglan Bay.

End Note: Lapwings

The Council has referred to EN1 (and its treatment of the western edge of Baglan Bay) also reflecting a requirement to provide habitat mitigation for lapwings. Both SMDL and the Council have responsibilities regarding temporary (on site) and permanent (off site) provision. These are being actively pursued and will be resolved through masterplanning and the development management system. However, the responsibilities (and lapwing provisions at Baglan Bay generally) have no relationship to EN1 and should not be relied on to support the designation proposed in the LDP.

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Appendix 1
Extract: Page 12 of Report

east direction due to littoral sediment drift, and (2) linear back-barrier marsh environments which have been created between and behind the spit recurves. Although there is some evidence of poorly developed parabolic and hummocky dune forms in the oldest dunes along and behind the coastal dune carriageway, parabolic forms have never been present within the defined SSSI. It is therefore considered inappropriate to create artificial mobile parabolic dunes forms in this area. Natural processes of frontal dune erosion and accretion should be allowed to operate unhindered. Further inland, dune management should focus on scrub and rank dune grassland control. Some further disturbance to the dune vegetation may occur when the new Swansea Bay Innovation Campus is completed and the area becomes subject to higher recreational visitor pressure. However, this could bring potential benefits by encouraging greater local sand mobility. Visitor pressure and its effects should be carefully monitored. The current policy of leaving strandline debris in situ should be continued to promote specialist invertebrate faunas and embryo dune development. The recommended long-term Shoreline Management Policy for this frontage is Managed Realignment (Halcrow, 2010).

The morphological features at Baglan Burrows are more complex, in large part due to the greater impact of human activities over many years. The system contains a range of dune types from shore-parallel embryo- and foredune ridges, hummocky dunes, and poorly developed parabolic dunes. There are also extensive gravel lags and sand hillocks which result from aeolian reworking of deposited sediment dredged from the Neath estuary.

In view of the above, there is a stronger case for further management intervention at Baglan Burrows than at Crymlyn Burrows. Two areas have been identified in this study as being suitable for further geomorphological engineering: (A) the north-western corner of the dune system near the east training wall (Figure 58), and (B) the frontal dune ridge and associated blowouts to the north and south of the Naval Social Club (Figure 59).

Within Area A there is the opportunity to encourage the development of one or more large parabolic dunes by continued strategic placement of dredged material from the Neath estuary; this could be a progressive process over the next 20 years. Within Area B there is a requirement for selective and environmentally sensitive control works to limit sand invasion into the industrial areas behind, and to prevent the further development of a shallow embayment in the shoreline where recreational pressure is most intense. The dunes at the northern end of Aberavon Sands and the southern end of Baglan Burrows have been experiencing slow erosion for many years. Past attempts to control the erosion and blowout enlargement have not been successful, and localised problems of sand incursion into industrial areas behind the main dune ridge remain. The short and longer-term preferred management policy for this coastal frontage is managed realignment, but it is recognised that intervention measures may be required to control local problems of visitor access, tidal flooding and sand incursion (Halcrow, 2010).

At the present time, unauthorised motorbike riding takes place on an extensive system of tracks within the Baglan dune system. While some degree of disturbance can be considered

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Appendix 2
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Figure 57. Proposed restoration and management works at Baglan Burrows, shown on aerial photograph flown in July 2013.

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Appendix 3
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Photograph A1.21. Gap in frontal dune ridge opposite bait farm ponds which provides access for motocross bikes and vehicles



Photograph A1.22. blown sand incursion into bait farm ponds from gap in frontal dunes