

TOWN AND COUNTRY PLANNING SCOTLAND ACT 1997

TOWN AND COUNTRY PLANNING (INQUIRIES PROCEDURES) (SCOTLAND)  
RULES 1997 AS AMENDED



**OUTLINE PLANNING PERMISSION FOR GOLF COURSE AND RESORT  
DEVELOPMENT ON LAND AT MENIE HOUSE, BALMEDIE, ABERDEEN**

**SUMMARY PRECOGNITION OF**

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Evidence on behalf of Scottish Natural Heritage

**(DPEA REFERENCE CIN/ABS/001)**

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1. My name is Dr. Jim Hansom. I am a Reader in the Department of Geographical and Earth Sciences at the University of Glasgow. My research includes coastal change, erosion and management in response to changes in sediment supply, sea level and storm activity.

2. My precognition outlines:

- (A) The geomorphological interests of Foveran Links SSSI (which includes the northern part of Menie Links);
- (B) The importance of the geomorphological interests at Menie Links compared with the remainder of Foveran Links SSSI, Northeast Scotland and the broader sand dune resource of Great Britain;
- (C) The impact of the proposed development on the designated geomorphological interests of Menie Links within Foveran Links SSSI;
- (D) The geomorphological interests of the areas outwith the SSSI, which are pertinent to the proposed development;
- (E) Coastal processes within Aberdeen Bay and their link to the designated geomorphological interests at Menie Links and the proposed golf course development at Menie Links;
- (F) Overall assessment of the proposed development on the geomorphology of Menie Links.

**(A) The geomorphological interests of Foveran Links SSSI (which includes the northern part of Menie Links)**

3. The Foveran Links SSSI covers Foveran Links Drums links which extend south of Foveran Links to the Sandend Burn, and Menie Links to the south of the Sandend Burn. The northern end of Menie Links has two main areas of bare sand: the extensive bare sand area of the Menie sand sheet in the south and the much smaller bare sand area between the higher Sandend Burn dunes in the north. Southward of the SSSI boundary lies the southern part of Menie Links and Pettens Links which abuts with Balmedie Links at its southern boundary.

4. The area covered by the Foveran Links SSSI dune system represents an exceptional site for coastal dune geomorphology on account of its remarkable assemblage of wind-blown landforms, some of which are natural and of an extent that is unparalleled in Great Britain (the natural sand sheet and inundated dunes at Menie), while others are more representative of the dune coastline of northeast Scotland (the Sandend Burn high dunes and the human modified sand sheet at Foveran). The natural features at the Menie sand sheet contain an unrivalled suite of geomorphological features and deposits that are of considerable national scientific interest.
  
5. The dune processes at Menie have formed a spectrum of dune features ranging from a highly dynamic bare sand sheet and associated vegetated dune features, to relatively more stable vegetated inter-dune hollows (dune slacks). The main sand sheet is highly mobile with large areas of wind-blown bare sand moving during windy conditions. The lack of vegetation on the sand sheet surface indicates a vigorous wind-dominated environment that is (and has been throughout the period of its documented history) hostile to the establishment of vegetation. The sand sheet at Menie constantly self-adjusts to changes in sand supply. Sand eroded in the south is transported northward over the sand sheet surface and deposited in the north. As the sand sheet migrates to bury the dunes in the north it also systematically re-exposes previously sand-covered surfaces in the south. Deflation of these surfaces continues until a more resistant subsurface is reached and is re-colonised by vegetation. This process has resulted in a well-documented movement of the entire sand sheet in a northward direction. Dynamism underpins the designation for geomorphological processes and forms a wide range of sand dune habitats that depend upon the geomorphological functioning of the site is supported. Measurement of the sand sheet margins show northward movement of the Menie sand sheet of between 14m/yr and 5m/yr since 1949, with the bare sand area ranging from 15ha in 1949 to 11.4ha in 2006. Within a Great Britain context this dune movement has created a distinctive and unique set of landforms whose progressive northerly movement has left behind a series of ecological stepping-stones through time.

6. The landforms at Menie are interrelated with beach conditions within Aberdeen Bay because the sand sheet is fed by wind erosion of sand from two main sources, upwind blow-outs at the coastal edge and the flanks of pre-existing dunes that are inundated by the advancing sand sheet. Blow-outs (linear deflation hollows produced by wind erosion of sand) often cut into the dune ridges closest to the beach so the condition of the beach-dune interface is critical to this supply source. The position and width of these blow-outs has fluctuated so that in some years they are low and wide, with little vegetation growth to impede sand transit inland and when the blow-outs are narrow, sand movement becomes temporarily impeded by vegetation. This causes alternating phases of instability and enhanced dynamism to pass throughout the sand sheet. It is very likely that the widths of the blow-out gaps behind the beach and the extent and vigour of the sand sheet at Menie, are related to variations in sand supply on the beach at Menie and thus the overall sand supply within Aberdeen Bay. The northward movement of the sand sheet is such that the position of the *northern* margin in 1949 barely overlapped the 2006 position of the *southern* margin and the active blow outs that fed sand inland has also moved northward and narrowed, with the previous blow-outs to the south becoming stabilised. This instability at Menie precedes the period of popular car ownership and associated recreation pressure, with photographic evidence in 1945 showing the sand sheet to be at a maximum at the same time as the blow-out to the beach was at its widest.
  
7. The scientific interest of the smaller sand area of the high Sandend Dunes at the northern part of Menie Links is linked to the proximity of the Sandend Burn which restricts northward movement of substantial amounts of sand. The burn limits the northward dune progression and may contribute to their growth, since the dunes may build higher *in situ* if sand evacuation is restricted. Scientifically interesting in its own right, this smaller and self-contained section of the SSSI may be operating as a semi-closed sediment system.

**(B) The importance of the geomorphological interests at Menie Links compared with the remainder of Foveran Links SSSI, Northeast Scotland and the broader sand dune resource of Great Britain**

8. The partly stabilised sand sheet in the extreme northern part of Foveran Links SSSI is of scientific interest for geomorphology since the dunes remain representative of the dune features of North East Scotland and although the sand sheet now has a much restricted and diminishing sediment supply it remains of interest precisely because of the dynamics of this change. It has also been affected by human interference.
9. Migrating sand sheets are rare on the coast of Great Britain and there are extremely few locations where large sand sheets migrate consistently along the coast. Of the bare sand areas in Great Britain, Scotland has 656ha, England 253ha and Wales 135ha. Of these the North East of Scotland hosts the largest areas of bare sand in Great Britain. However, the areal extent of this resource is of secondary importance to a scientific interest based on the extent and unmodified dynamism of the inter-related processes, landform and vegetation assemblage at Menie.

**(C) The impact of the proposed development on the designated geomorphological interests of Menie Links within Foveran Links SSSI**

13. The geomorphological interest is fundamentally based on the unfettered operation of the natural processes of wind blown sand erosion and deposition that result in landform dynamism and mobility of the sand sheet at Menie Links. As a result the proposal to stabilise most of the bare sand surfaces will serve to remove the key scientific interest. The proposal acknowledges that the impact on the geomorphology for all 18 holes will be at least “Minor Adverse” and will be “Major Adverse” for most of the proposed holes within the SSSI. Almost 11ha of a total of 14ha of bare mobile sand in the Menie part of the SSSI is proposed to be stabilised. If the bare sand contained within the Sandend Burn dunes is excluded from the development, and the total bare sand on the Menie sand sheet in 2006 amounts to 11.4ha, then about 100% of the sand sheet will be stabilised. This serves to remove the geomorphological interest of the site.

**(D) The geomorphological interests of the areas outwith the SSSI, which are pertinent to the proposed development**

10. Proposed holes 1-9 lie to the south of the Menie Links part of Foveran Links SSSI

and are of lesser scientific interest than the bare sand and active areas to the north. However, the proposed course design will mean that substantial amounts of cut and fill will be required across a large but spatially distributed area. In addition to this the green of hole 3 is sited in a low area where the Blairton Burn is actively eroding northward. Since the adjacent eroding dunes are affected by wave activity during stormy high tide conditions then intervention in the near future is likely to be required. Hole 4 is sited at the northern mobile edge of the Balmedie sand sheet, an area also subject to sand movement northward. This hole will be subject to sand inundation and thus will require stabilisation. It will be difficult for the developers to restrict the amount of sand moving onto the proposed course without also stabilising a substantial part of the northern part of the Balmedie sand sheet so this proposal also threatens the integrity of the bare sand area at Balmedie.

**(E) Coastal processes within Aberdeen Bay and their link to the designated geomorphological interests at Menie Links and the proposed golf course development at Menie Links**

23. The operation of coastal processes within Aberdeen Bay is relevant since the sand supply to the Menie sand sheet depends on the sand supply to the beach at Menie Links. The net sediment movement in Aberdeen Bay from south to north contributes to long-term erosion in the southern part of Aberdeen Bay and this increasingly extends northwards towards Menie with severe erosion of up to 4 m as far north as Black Dog Links and erosion noted north of Menie from 1883-1985. In spite of short term variations, it remains that there is a long term sediment deficit within Aberdeen Bay and the corollary is that propagation of erosion from south to north is highly likely to affect the beach at Menie in the future.

**(F) Conclusion: Overall assessment of the proposed development on the geomorphology of Menie Links**

24. The proposed development of the southern part of the Foveran SSSI requires the wholesale stabilisation of the bare sand dune surfaces and arrest of the dynamic processes that give rise to them. This includes the northern part of Menie Links including the Menie sand sheet. These processes and the resulting landforms are recognised as being of exceptional quality and extent, at a scale of development not

seen elsewhere in Great Britain. The proposed development will therefore result in the destruction of the geomorphological interest and substantially impact on the dune landforms both within and outwith the SSSI in terms of stabilisation and topographic smoothing. It falls far short of The Scottish Golf Environment Group's 'Principles of an Ecological Approach to Golf Course Development' which states:

*“The primary principle is to work with nature, rather than against it, to produce a viable and environmentally sustainable recreational resource. A golf course should fit into its surroundings and not be imposed on them”.*