2nd Addendum to Rothera Site Investigation - IEE

1. Description of Activity:

In anticipation of rock removal associated with the future proposed wharf construction at Rothera Research Station, there is a requirement to relocate a ground-based radio beacon known as the Doppler Orbitography & Radiopositioning Integrated by Satellite unit (DORIS). Full details of which are included and assessed in the Rothera Site Investigation IEE (2017).

To support this relocation it has now been identified that a small building for housing the electronics associated with this beacon is required to be built.

The proposed building is known as a Glasdon GRP hut, see Figure 1, which is made out of heavy duty plastic. To provide a flat, stable foundation on which to site the hut, a concrete base will have to be constructed. The base is anticipated to be to 1.4 m x 1.4 m x 0.4 m as the actual hut is 1.16 m x 1.16 m^2. The hut has to be located within 15 metres of the DORIS beacon.

Figure 1. Glasdon GRP Hut – small green unit adjacent to mast structure

2. Location:

The proposed location for the new hut is on rock outcrops to the north east of Rothera Wharf within the existing footprint of the Rothera station area. This is adjacent to where the DORIS is to be located to (as outlined in the Rothera Site Investigation IEE (2017). The proposed location is shown in Figure 2.

3. Personnel:

The BAS Facilities team will undertake the concreting works and installation of the hut during the 2017/2018 summer season under the supervision of Joe Boulton the BAS Rothera Facilities Manager.

4. Programme/Schedule

It will take a day to cast the concrete pad for the hut, after which it will be left for approximately 3 weeks to cure and set. After which the hut will be installed. All works are anticipated to be complete by the end of February 2018.

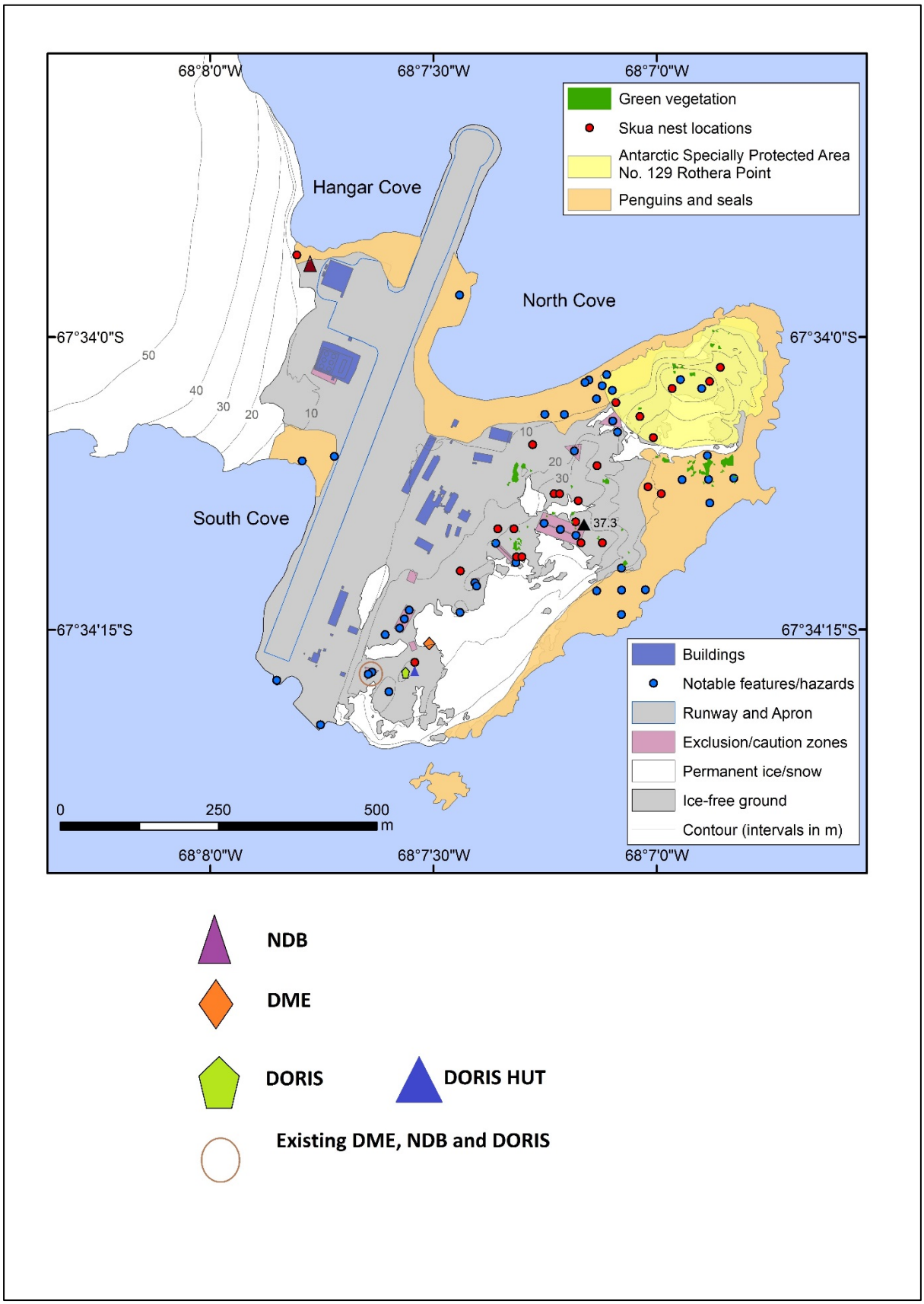

Figure 2. Proposed location of new DORIS hut

5. Baseline Conditions

A baseline report for the current environmental conditions at Rothera Point was included in Annex 1 of the Rothera Site Investigation IEE, Environmental Baseline Information for Rothera Point, Adelaide Island, Antarctica.

The following text is an extract from that report.

South polar skuas breed at Rothera Point and the population has been monitored annually since the 1988/89 season. The location of recorded nest sites over the past 18 years are shown in Figure 2, (UK Polar Data Centre, Rothera Point and Anchorage Skua data, 2017). Nest sites are often reused but may be inactive for a number of consecutive years. The skua nest closest to the proposed site for the new hut, was last used in 2015-16 but egg rearing was unsuccessful. The skua pair did not appear or lay eggs in 2016-17. However the 2015-16 and the 2016-17 seasons have been recorded as poor breeding years. There were no successfully reared chicks in 2015-16 and very few eggs laid and none hatching in 2016-17. It should be assumed therefore that any nest site identified on Figure 2 could become active in the future.

Recent monitoring undertaken in January 2018 has recorded that there are no skuas currently nesting at this site.

6. Alternatives

A number of alternative locations were considered when planning the relocation of the DORIS. The locations that have already been proposed (in the original IEE) have been discussed with relevant experts in order to ascertain the operational requirements and to ensure optimal use once relocated.

The Glasdon hut is required to be within 15 m of the DORIS beacon due to the electronics associated with operating the beacon.

7. Impact Identification & Mitigation

(i) Potential Impact: Potential disturbance of a skua nest.

Past monitoring has shown that skuas have previously nested in the vicinity of the proposed site for the Glasdon Hut. However none of the identified nest sites have been used in the past couple of seasons so the potential risk of impact is considered to be low. In addition recent monitoring reports that there are no skuas currently nesting in the area.

Mitigation:

- BAS staff will monitor the site as part of the annual skua monitoring programme at Rothera.
- Regular human activity in this area is likely to discourage the birds from nesting at these particular sites.
- BAS staff to report if a nest becomes established.

(ii) Potential Impact: Potential damage to soil organisms and vegetation due to high alkalinity of cementitious liquids and cement dust.

Mitigation: The BAS facilities teams are committed to the following procedures to minimise the possibility of cement dust polluting the locality, i.e. by:

- restricting the mixing of concrete to calm days with little or no wind;

- mixing all cement in one location (identified as the area adjacent to the STP);
- minimising the handling of open cement bags through good planning and housekeeping during construction;
- containing partially used or damaged bags of concrete in order to minimise the risk of accidental spills; and
- only transporting wet concrete mixes to plinth locations.

The IEE for the Rothera Site Investigation (Second Season) indicated that the impacts were likely to be no more than minor or transitory on the Antarctic environment, provided the recommended mitigation measures were carried out. This addendum does not alter the original conclusions to the IEE.