

Proposed residential self-build development at Ennor Farm Plot H3, St Mary's, Isles of Scilly

Public Consultation Technical Note

1.0 TECHNICAL SUMMARY

1.1. Introduction

1.1.1. The proposed development comprises the construction of 13 no. detached and semi-detached dwellings, two access roads off Old Town Lane, a courtyard car parking arrangement, an area of allotments and soft-landscaping. It is likely that the dwellings will be of traditional construction.

1.1.2. The following note summarises the key issues, impacts, assessment findings and mitigation associated with the technical assessments carried out in support of the proposed planning application.

1.2. The technical assessments undertaken comprise the following:

- Ecology
- Arboriculture (trees)
- Ground Conditions
- Flood Risk and Drainage Strategy
- Transport
- Utilities Infrastructure

1.3. Ecology

1.3.1. An ecological walkover assessment of the site was undertaken on 25th August 2020. The survey was carried out following the Phase 1 habitat survey method, which standardises the way habitats and characteristic vegetation are recorded (JNCC, 2010). Habitat types were subsequently mapped and both dominant and invasive vegetation species were recorded in the form of target notes. The extended Phase 1 habitat survey method also assesses habitats for their suitability and potential to support both protected species, species of conservation concern and invasive species, following the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

1.3.2. The site comprises an area of semi-improved modified neutral grassland with some areas of tall ruderal vegetation, bordered to the north, west and east by a dry stone wall interspersed with broad-leaved trees.

Internationally Designated Sites

1.3.3. There are three internationally designated sites within 10km of the site: The Isles of Scilly Potential SPA extends around the entirety of the islands shorelines, the closest point of which is approximately 280 m south of the site. The Isles of Scilly Complex SAC is located, at its nearest point, approximately 350m south-east of the site. Further afield, the potential SPA is designated for its breeding population of European shag and great black-backed gull and the Isles of Scilly

Ramsar and Isles of Scilly Special Protection Area (SPA) comprises a composite site covering many areas of several of the uninhabited islands surrounding the site. Given the distance from the site is not anticipated that there will be any impacts on these areas as a result of the proposed works.

Nationally Designated Sites

- 1.3.4. Lower Moors (St Mary's) Site of Special Scientific Interest (SSSI) is located approximately 6m to the north-west of the site and is designated for its habitats and wintering bird populations. Further afield, Peninnis Head (St Mary's) SSSI is located approximately 0.6km south-west of the site and is designated for its habitats and plant species and Higher Moors & Porth Hellick Pools (St. Mary's) SSSI is located approximately 0.7km north-east of the site and is designated for its open water habitats, breeding bird populations and plant species.
- 1.3.5. The site falls within two Natural England Impact Risk Zone (IRZ) for Lower Moors (St. Mary's) SSSI (Band B and Band C) located approximately 6m to the north-west east of the site. The advice states that the local planning authority may need to consult Natural England for a variety of proposals in this zone, including:
- rural residential development of 10 units or more;
 - any development which could produce dust or air pollution during its construction or operation;
 - any discharge of water or liquid waste to ground or surface water (excluding discharge to mains sewers); and,
 - any development needing its own water supply as being of potential risk to the integrity of the SSSI.
- 1.3.6. No impacts on any statutory designated sites are anticipated as a result of the proposals but there is potential for indirect impacts to occur to one non-statutory designation (the Important Plant Area (IPA) around the land at Carn Thomas, St Mary's Airport and Porth Hellick) during construction works. The implementation of best practice pollution prevention measures will be sufficient to minimise impacts to this site.
- 1.3.7. In terms of mitigation, all retained trees on and adjacent to the site will be protected from incidental damage and disturbance during construction in accordance with current standards (BS5837:2012). A Reasonable Avoidance Measures Method Statement (RAMMS) amphibians and hedgehogs will be required to ensure any amphibians and hedgehogs that may be present within the site are suitably protected during construction. A sensitive lighting design will be required to ensure there are no adverse impacts on nocturnal species using the site following completion of the development. A nesting bird check prior to construction works is required if clearance works are undertaken during the nesting bird season (March - August inclusive).
- 1.4. **Arboriculture**
- 1.4.1. There are no trees on or immediately adjacent to the site that are protected by a Tree Preservation Order (TPO). However, all trees are protected by the Isles of Scilly Conservation Designation.
- 1.4.2. A tree survey was undertaken in August 2020 in accordance with BS 5837 as part of an ecological field survey. 10 No. individual trees and 2 groups of trees were recorded within influencing distance of the application site. Tree cover is confined to the fringes, with the majority of the site

comprising a pastoral field. The majority of trees within both groups (G1 and G2) are young to middle aged and are predominantly elm species, with some holly within G2 at the north-western corner.

1.4.3. A reasonable worst case assessment of the requirement to prune or remove trees has been made on the basis of BS 5837, the proposed construction methods, and professional judgement. The works listed below and illustrated opposite form part of the proposed development, and would be permitted by the grant of planning consent:

- Removal of trees: T6, T7 and T8 along the road to facilitate access;
- Partial removal of group G1 equating to circa 58m² of canopy cover; and,
- Crown reduction of southern canopy of T2 by circa 2m.

1.4.4. Tree removal is necessitated by the construction of the proposed access road into the site off Old Town Lane (T6, T7 and G1) and by the construction of plots 3 and 4 (T8). The removal of 3 moderate quality (Category B) trees is the most significant arboricultural loss associated with this development and may cause a loss of amenity and some screening along the eastern site boundary. The loss of a section of low quality (Category C) tree group will also result in the loss of screening between the site and Old Town Lane.

1.4.5. The proposed development will necessitate the southern canopy of T2 to be reduced by approximately 2m to accommodate the partial covering of the adjacent parking spaces. This pruning is tolerable and will not cause deterioration of the trees' long term health or quality.

1.4.6. In terms of mitigation, a scheme of tree planting will be produced and implemented to offset adverse effects associated with the proposed development and tree loss.

1.5. **Ground Conditions**

1.5.1. The site is a greenfield 'undeveloped' site and historical mapping show the site has been used for agricultural grazing since 1890 with open land to the north, west and east and the village of Old Town to the south. A potential soakaway / cess pit in the south-east corner of the site represent potential minor sources of contamination and further afield, there are small fuel tanks (c.100m SW) a quarry (c.70m NE) and evidence of historic modifications to the Lower Moors wetland's drainage, which may include unrecorded infilled ground (c.50m NW).

1.5.2. A ground investigation was undertaken in December 2019 to characterise the soils and groundwater regime. Soil contamination has not been identified at the site when considering the proposed residential end use and remedial action is therefore not required. At the time of the investigation, groundwater analyses detected marginally elevated dissolved cadmium metal of a hitherto unknown source in relation to Environmental Quality Standards (EQS) for Freshwaters protective of ecosystems. However, the contamination was not confirmed above Drinking Water Standards that are protective for human consumption. As such, specific groundwater remediation is not considered necessary as part of this development.

1.5.3. Elevated ground gases such as methane and carbon dioxide are considered unlikely to be elevated due to the absence of organic sources but the site does fall within a high radon probability with over 30% of homes estimated at or above the action level. As such, full radon protective measures are considered necessary in the construction of new dwellings or extensions.

1.5.4. In terms of construction, the site is underlain by Head deposits to a depth of approximately 3.50m bgl, after which Granite bedrock is present. Geotechnical risks identified at the site comprise shallow groundwater, soft or loose ground to depths up to 2.0m, running sands and sloping ground. Furthermore, the site levels fall from 8.50m AOD in the south western corner, to 3.50m AOD on the north western edge of the site. This is a fall of 5m over a distance of 65m, giving a slope of 4.4°. Depending on the layout of the final scheme, a degree of re-levelling, earthworks or retaining walls may be required to accommodate this slope. Based upon the ground conditions encountered, the Head deposits will provide a bearing stratum of low bearing capacity for traditional pad or strip foundations. Based on the available preliminary ground investigation data, an allowable bearing capacity of 40kN/m² may be adopted for shallow foundations between 0.60m and 1.50m wide, placed at a minimum depth of 1.50m bgl.

1.6. **Flood Risk & Drainage**

Surface Water

1.6.1. The site is located within Flood Zone 1 following the modelling undertaken as part of the strategic flood risk assessment for the Isles of Scilly and shown on the Environment Agency coastal flooding mapping. The site is also at a low risk of flooding from surface water, but relatively high risk from tidal and from groundwater sources, which will constrain the site with the arrangement and levels of plots and green spaces. It is indicated there is a potential for groundwater flooding at the surface in lower lying areas, and groundwater flooding to property below ground level across the site. Groundwater was also encountered between 3.8m and 0.7m bgl during the trial pit excavations and this places a significant constraint on possible development on the site. To reduce the risk of groundwater flooding to a property, all plot finished floor levels must be kept above existing ground levels as well as above 5.0m AOD.

1.6.2. Sustainable Drainage Systems (SuDS) will be introduced for the proposed development to attenuate surface water flows to the required rainfall events. In addition, the SuDS will also improve water quality for the car parking areas and wetlands will provide amenity and biodiversity value in line with the recommendations within the NPPF. The surface water drainage strategy has been developed in accordance with the Surface Water disposals hierarchy under paragraph 80 of the PPG, surface water should be managed by:

- 1) Infiltration to the maximum extent that is practical – where it is safe and acceptable to do so
- 2) Discharge to watercourses
- 3) Discharge to surface water sewer, highway drain or another drainage system
- 4) Discharge to combined sewers (last resort)

1.6.3. All access roads with suitable gradients, courtyards and pedestrian footways within the site will be constructed as permeable pavement arrangements. Surface water runoff from the non-permeable Old Town Road and site access will also be channelled towards these permeable paved areas. The permeable paving will be tanked and discharge via suitably sized carrier pipes and the shallow underground to the wetland area. Rainwater runoff from property roofs will be collected by traditional downpipes, and be discharged either to the permeable paving areas or to the green space within site.

1.6.4. Soakage testing has been undertaken at the site and the results obtained have found the site to have poor infiltration rates and as such infiltration via soakaways is not considered to be a viable

solution for surface water discharge for the scheme. Furthermore, there are no notable watercourses are located within close vicinity of the site and there are no surface water sewers located in the vicinity of the site. The nearest foul system would require a pumping station and rising main and is the last resort in the hierarchy listed above. The proposed Drainage Strategy is therefore to attenuate all flows to be the same as pre-development run-off rates and store the surface water within a shallow underground attenuation tank below the proposed vehicle parking court in the northern part of the site. Collection from the roads and plots will be shallow utilising permeable paving where possible. Storage estimates have been calculated to be 120m³ of storage to account for rainfall events up to and including a 1:100 year flood event with 40% climate change using an FEH model.

- 1.6.5. Water would then be discharged at a greenfield run-off rates into the area to the north west of the site freely, matching the existing situation on the site. Mitigation measures of the proposed drainage strategy will not present a significant risk to the SSSI. In addition to replicating the current surface water drainage at the site is whether this could also be used as a feature that the proposed allotment users could utilise. This would have an overflow arrangement, which would flow to the lowest parts of the site as per the existing situation.

Foul Sewage

- 1.6.6. It is proposed that all foul water drainage from the site will be conveyed via adequately sized below ground carrier pipes and pumped via an adopted pumping station and rising main to the existing foul sewer within Old Town Lane, to the east of the site. The existing foul sewer in High Street is adopted by South West Water and consists of a 6" diameter pipe, flowing south towards the foul treatment works in Old Town

1.7. **Transport**

- 1.7.1. A Transport Statement and Residential Travel Plan has been prepared for the scheme.
- 1.7.2. The proposed development will be served via two points of vehicular access off Old Town Lane. The primary access is located centrally along the eastern border while an existing field access is to be upgraded to form a secondary access to the site in the south, serving a limited number of parking bays.
- 1.7.3. A speed survey was undertaken to obtain the actual speeds of traffic travelling along Old Town Lane during the week before half term. This confirmed that vehicles speeds were slightly below 30mph in both directions (an average speed 27 mph for north bound traffic and 26 mph for southbound traffic) and therefore appropriate visibility splays (2.4 x 43m) from the new primary access are to be provided in line with the speed survey. The southern access the visibility is slightly restricted due to existing stone walling, however this does not pose a serious issue, due to low number of vehicle users along Old Town Lane and vehicle utilising the southern access road.
- 1.7.4. Appropriate levels of parking are to be provided on-site to ensure that parking does not spill out on to the public highway.

1.8. **Utilities Infrastructure**

- 1.8.1. The Isles of Scilly are served with electricity, potable water, telecommunication, and foul sewerage infrastructure within very close proximity to the site. There are no surface water sewers in close

proximity to the site, although the Old Town area 70m south of the site is served. There is no gas infrastructure on the islands.

- 1.8.2. Both Western Power Distribution and British Telecommunications have infrastructure within the site boundary. Further investigation will be required to determine whether private drainage infrastructure is present.
- 1.8.3. Western Power Distribution have confirmed there is sufficient capacity in the existing network to provide 15kVa/dwelling for 16 dwellings. They have also confirmed diversion works will be required to relocate the 11kV HV overhead cables. Quotes have been provided for all proposed works.
- 1.8.4. South West Water have yet to formally respond regarding potable water supply but have verbally confirmed that the scheme should be supported by planned infrastructure upgrades on the Island.
- 1.8.5. South West Water have yet to formally respond regarding foul water discharge yet it is understood from a discussion with the Council of Isles of Scilly that there is an existing sewage works adjacent the site which may be able to be reconditioned to provide capacity from the site.
- 1.8.6. Consultations with British Telecom and Virgin Media on proposed site supplies to the development have not been undertaken at this stage as they typically require the site to be granted planning permission prior to developing their supply strategy.