Isles of Scilly

Isles of Scilly Capital Delivery Programme

St Mary's Welfare Compound – Sustainability Statement

St. Mary's Welfare Compound

107780-PEF-XX-500-T.RP-EN-0002

Report Ref.		**107780-PEF-XX-500-T.RP-EN-0002**				
File Path		**\\rsbgukfs01\EXEEngineering\Data\PROJINFO\107780 - Isles of Scilly Plants & WTW (Trant)\01 - WIP\Documents\Geo&Env\GS-Sustainability\107780-PEF-XX-500-T.RP-EN-0002 St Mary's Welfare Compound Sustainability Statement P01.docx**				
Rev	**Suit**	**Description**	**Date**	**Originator**	**Checker**	**Approver**
P01	S3	Draft Issue	12-10-23	W Howard / E Samways	M Desai	J Davey
C01	A1	To inform planning	01-11-23	W Howard / E Samways	M Desai	J Davey

Ref. reference. Rev revision. Suit suitability.

Prepared for

Trant

Rushington House,
Rushington,
Southampton,
SO40 9LT

Prepared by

Pell Frischmann

5th Floor
85 Strand
London
WC2R 0DW

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Executive Summary

Site Name	St Mary's Welfare Compound
Location	The welfare compound at St Mary's is to be located off Carn Friars Lane and Old Town Lane, Hugh Town, St Mary's, Isles of Scilly. The nearest postcode: TR21 0NG and approximate central National Grid Reference: SV 91762 10782.
Summary	This Sustainability Statement includes two main elements: ➢ A review of relevant sustainability policy and legislation, with a demonstration of how the proposed compound complies. ➢ A discussion of sustainable design measures which are being implemented to increase the sustainability of the project and to reduce impacts on the natural environment. The topics covered within Section 4 (Sustainability Considerations) of this report include carbon, energy, sustainable design measures, water efficiency, flood risk and drainage, sustainable transport, materials and waste, noise, ecology, and site workers and operational considerations. The discussion of sustainable design measures and sustainability considerations has also been fed into by a carbon assessment of construction materials and their transport, waste associated with the compound during construction and decommissioning, business transport during construction, and operational energy and water usage. The total emissions for all elements are 180.686 tCO_2e, with energy usage forming approximately 67% of the total emissions, and materials and their transport forming approximately 31.5%. Both waste, and business and employee transport represent less than 2% of the total emissions. The below bullet points provide a summary of some of the key measures to be implemented: ➢ Use of low / zero carbon technologies where feasible, such as through use of solar LED lighting. ➢ Use of prefabricated buildings which have the potential to reduce emissions associated with the construction of such buildings, as well as reducing waste through their possible future reuse on other sites. ➢ Production of a Design Stage Site Waste Management Plan (SWMP) to demonstrate how the proposed scheme has diverted as much waste as possible from landfill. The SWMP demonstrates that approximately 97% for waste from construction and approximately 83% for waste associated with decommissioning is being diverted from landfill. ➢ Implementation of measures during construction, such as those captured within the Construction Environmental Management Plan (CEMP) produced for the proposed scheme which increase sustainability and reduce environmental impacts. This is particularly relevant to the management of surface water and reducing risk of pollution, as well as controlling production of dust and noise. ➢ Measures relating to social issues, such as the design of the cabins being optimised to boost the morale and wellbeing of employees (particularly those who may be staying away from home for extended periods of time) and opportunities for the proposed scheme and the wider Capital Delivery Programme to carry out social value activities (such as involving local communities and schools or providing local people with job opportunities). ➢ Encouraging the staff staying at the compound to keep their electricity usage to a minimum; ➢ A metered mains water connection to the Isles of Scilly distribution system will be set up. Whilst the average UK water usage per person per day is 150 litres, the staff staying within the compound will be educated on water usage and its scarcity within the Isles of Scilly and a target of less than 100 litres per person per day will be established. ➢ A cesspit will be fitted with a high-level alarm system to prevent overflows and will be regularly emptied and transported to the cess reception facility at Old Town for disposal.

1 Introduction

Trant Engineering Limited, on behalf of South West Water (SWW), have commissioned Pell Frischmann to produce a Sustainability Statement to support the planning application for a proposed temporary welfare compound on the island of St Mary's, Isles of Scilly (nearest postcode: TR21 0NG and approximate central National Grid Reference: SV 91762 10782).

The purpose of this Sustainability Statement is as follows:

- To present a statement of Sustainable Design Measures, as identified within the Council of the Isles of Scilly Local Plan; and

- To demonstrate how the proposed scheme will address or meet sustainability policy as set out by
    - The Local Planning Authority (Isles of Scilly Council).
    - National UK government.
    - Other relevant bodies.

Following this introductory chapter, the Statement is structured as follows:

- Section 2: Legislation and Policy Review.
- Section 3 Methodology.
- Section 4: Sustainability Considerations.
- Section 5: Conclusions.
- Section 6: References.

1.1 Proposed Scheme Location

The site of the temporary welfare compound (hereafter referred to as the application site) is located on land south of the A3110 Parting Carn Lane (National Grid Reference – SV 91762 10782). The footprint of the application site occupies an area of 0.39 hectares and is bound to the north, east, and south by hedgerows (traditional stone-faced hedgebanks) and to the west by woodland.

The application site is situated approximately 400m north of runway 14 at the Isles of Scilly Airport, in a relatively rural setting with very few residential properties in the local vicinity. The nearest neighbouring residential properties are located approximately 170m / 200m west / southwest of the site on Parting Carn Lane (the A3110) and Old Town Lane, respectively.

The application site is owned by the Duchy of Cornwall and it provides land for the grazing and rearing of livestock.

The site has been used twice previously as a construction compound. In 2014 Lagan Construction Ltd was granted planning permissions for a mobile asphalt and concrete batching plant, construction material storage, accommodation, welfare, office facilities and car parking. It was proposed the site would be in use from February – July 2014. Upon decommissioning, the site was reverted to its previous land use.

Also in 2014, Kier was granted planning permission for the temporary placement of 10 two-berth sleeper cabins and additional material storage for St Mary's Harbour Improvement Works. The units were proposed to be in place between April – December 2015. Upon decommissioning, the site was reverted to its previous land use.

Figure 1.1 overleaf shows the location of the welfare compound.

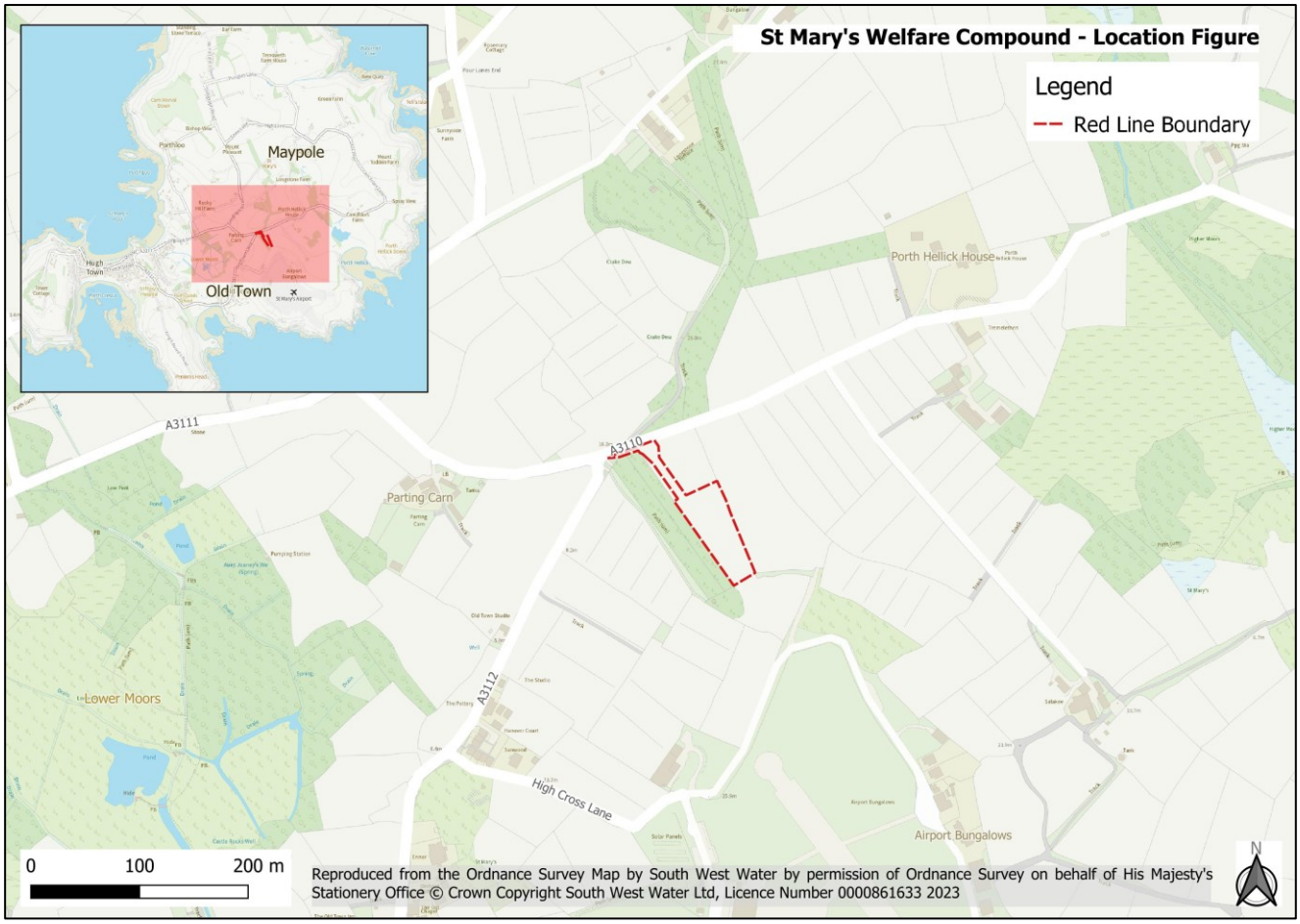

Figure 1.1: St Mary's Welfare Compound Location

1.2 Proposed Scheme Overview

A full scheme description is provided within the Planning Statement for the welfare compound (report reference: 107780-PEF-XX-500-T.RP-TE-0002), although a brief summary has been provided below in order to provide some context for this Sustainability Statement.

The proposed scheme comprises the development of a temporary welfare compound to support the SWW Isles of Scilly Capital Delivery Programme. The compound will be in use for up to four years and will consist of an access road, parking and laydown area, recreation room, canteen, smoking shelter, meeting room, drying room, 10 sleep units, toilets with cess pit, and power supply.

The proposed site layout drawing (drawing reference: 107780-PEF-XX-500-D.DR-T-0003) presents the expected layout. Refer to Appendix A: Proposed Site Plan for further details. The compound is separated into three internal areas with each delineated by seeded topsoil berms. The following layout is proposed:

- Access, parking and laydown, including:
  - Internal site access trac running north-south parallel to the western field boundary.
  - 6 x car parking spaces.
  - Laydown area.
  - Vehicle turning area.

- Offices and amenities, including:
  - Generator.
  - Offices.
  - Meeting room.

- Canteen.
- Drying room.
- Material storage area.
- Toilet / cess pit.

- Habitation, including:
  - 10 x cabin-type sleep units.

A phased mobilisation approach is planned to commence in January 2024 and be completed in March 2024.

To enable efficient on-island construction activities, material deliveries will need to be substantially completed prior to construction commencement to reduce the impact of inclement weather. Materials can be delivered during good weather and then stored securely and be easily accessible on the island.

2 Legislation and Policy Review

A review of relevant national, regional and local policy and legislation in relation to sustainability has been carried out. Sustainability is an important topic, including within the development and construction industries. Both national and local governments and policy makers are placing a greater emphasis on being sustainable, and this has been translated into the planning application process. The legislation and policies have been categorised depending on whether they are national, regional or local, and this chapter has been split into those same categories. The geographic scale categories have been defined as the following:

- National – relating to UK or international.
- Regional – relating to the South West region.
- Local – relating to the Isles of Scilly only.

It is noted that a wider Sustainability Strategy is being produced for the Capital Delivery Programme for all islands, which will also include a review of relevant legislation and policy.

2.1 National

As part of the legislation and policy review, Table 1 in Appendix B of this document includes a summary of the legislation and policy. The table also includes a brief explanation of how the proposed scheme complies with the legislation or policy.

The list of the legislation and policy included in Table 1 of Appendix B are as follows:

- Legislation (in date order):
  - The Environmental Targets (Biodiversity) (England) Regulations 2023.
  - Environment Act 2021.
  - The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.
  - The Waste (England and Wales) Regulations 2011.
  - The Promotion of the Use of Energy from Renewable Sources Regulations 2011.
  - Climate Change Act 2008.
  - Wildlife and Countryside Act 1981.

- Policy
  - National Planning Policy Framework (NPPF), 2023.
  - National Planning Policy for Waste, 2014.
  - Our Waste, Our Resources: A Strategy for England, 2018.
  - 25 Year Environment Plan, 2018.
  - Environmental Improvement Plan, 2023.
  - Build Back Better: Our Plan for Growth, 2021.
  - Net Zero Strategy: Build Back Greener, 2021.

2.2 Regional

No regional legislation was identified and therefore, Table 2 of Appendix B should be referred to for the summary and demonstration of compliance for relevant policy documents.

The list of policies included in Table 2 of Appendix B are as follows:

- SWW's 'Our Promise to the Planet: Carbon-busting Net Zero Plan', 2021.
- Cornwall and Isles of Scilly Environmental Growth Strategy, 2021.
- Climate Adaptation Strategy for Devon, Cornwall, and Isles of Scilly – Consultation Draft 2023.

2.3 Local

Table 3 of Appendix B should be referred to for the summary of local legislation and policy, alongside the demonstration of compliance.

The list of the legislation and policies included in Table 3 of Appendix B are as follows:

- Legislation (in date order):
  - Isles of Scilly (Application of Water Legislation) Order 2020.
  - The Environmental Protection Act 1990 (Isles of Scilly) Order 2006.

- Policy:
  - Isles of Scilly Local Plan 2015-2030.
  - Isles of Scilly Climate Change Action Plan 2022.
  - Smart Islands.

3 Methodology

3.1 Scope of Works Undertaken

3.1.1 Included in Scope

This Sustainability Statement aims to cover the following scope:

- Review of relevant sustainability policy and legislation, with details of how the proposed scheme complies with such policies and law.
- Carbon assessment based on available information associated with the construction of the compound, use of the compound, and the dismantling of the compound for reinstatement of previous conditions.
- The discussion of the design and specific measures implemented to act sustainably and reduce impacts on the environment. This forms the main portion of the Sustainability Statement (refer to Section 4 for details).

The Planning Statement (report reference: 107780-PEF-XX-500-T.RP-TE-0002) should be referred to for the list of deliverables to be submitted for the planning application. Some of which includes documents mentioned within this Sustainability Statement.

3.1.2 Excluded from Scope

The topic of air quality has been excluded from the scope of assessment required to support the planning application for the proposed scheme, as confirmed during a pre-application consultation session with the Council of the Isles of Scilly.

3.2 Information Sources

Various pieces of information have been gathered during the production of this Sustainability Statement from a variety of sources. A full list of references for online sources has been included within Section 6 of this document.

Various reports and/or documents produced for the proposed scheme have also been referred to within this statement, including:

- Site design drawings (107780-PEF-XX-500-D.DR-T-0001 to 0003), as shown in Appendix A.
- Design and Access Statement (report reference: 107780-PEF-XX-500-T.RP-T-0001).
- Site Waste Management Plan (report reference: 107780-PEF-XX-500-T.RP-GG-0001).
- Construction Environmental Management Plan (report reference: 107780-PEF-XX-500-T.RP-TE-0001).
- Construction Traffic Management Plan (report reference: 107780-PEF-XX-500-T.RP-H-0001).
- Preliminary Ecological Appraisal (report reference: 107780-PEF-XX-500-T.RP-GE-0002).
- Noise Assessment (report reference: 107780-PEF-XX-500-T.RP-N-0003).

3.3 Methodology

3.3.1 Statement of Sustainable Design Measures

A multi-disciplinary workshop was conducted by the sustainability team in September 2023 with members of the project management team, design team and environment team to discuss the topics covered within this Sustainability Statement.

The workshop included discussion of the design and specific measures being made to embed sustainability within scheme considerations and to reduce impacts on the environment, emissions, waste, and the nearby community. Discussions were also held with Trant, such as regarding the Bill of Quantities and Site Waste

Management Plan (SWMP). Trant also provided details relating to the welfare compound that have been used within this report, such as details on energy usage, site layout, facilities for staff.

Section 4 of this Statement should be referred to for the discussion of the different sustainability considerations made when designing the compound. Where other reports or documents have been utilised when producing this Statement, the relevant document has been noted.

3.3.2 Carbon Assessment

In order to quantify the carbon emissions associated with the proposed scheme and to identify carbon saving opportunities, a whole-life carbon assessment has been completed (based on information available). The carbon assessment focused on the following carbon life cycle stages, as set out by the PAS 2080 standard (as shown in Appendix C of this Sustainability Statement):

- Before use stage – this includes emissions associated with the construction materials, as well as transport from supplier to works site).

- Use stage – based on the available information, this has included operational energy use and operational water use.

- End of life stage – as the compound will be a temporary structure, it is expected that it will be dismantled and reinstated to previous conditions at the end of the four-year period required for the construction of the various Capital Delivery Programme schemes. For end of life, waste associated with the dismantling of the compound has also been considered.

The latest version of an industry approved carbon tool has been used for the carbon assessment for the proposed scheme because of its ability to capture and calculate emissions associated with materials, transport of materials from supplier to site, energy and water usage, business and employee transport, and waste.

The topics covered within the Carbon Tool include:

- Bulk materials.
- Earthworks.
- Fencing, barriers and road restraint systems.
- Drainage.
- Road pavements.
- Street furniture.
- Civil structures and retaining walls.
- Fuel, electricity and water use.
- Business and employee transport.
- Waste.

A Bill of Quantities was received from Trant, which included details of the materials required and their quantities. It is also provided a list of vehicular movements associated with the compound. The material and quantity data were then processed to match with the appropriate categories and units of measurement within the Carbon Tool. This provided some assumptions and clarifications being made, and some unit conversions being carried out. Discussions were held with the design team to ensure that the material categorisation was as accurate as possible. Based on the Carbon Tool and the design details, some exclusions had to be made. Appendix D provides a list of such exclusions.

The data was then inputted into the Carbon Tool and emissions results generated. The Carbon Tool produces carbon emission results for both the material and also for transporting the material from supplier to site.

In the case of the Isles of Scilly, two methods of material transport have been considered. All materials included a 65km ship journey (from Penzance to St Mary's harbour / quay) and a specified HGV journey from supplier to Penzance harbour. The HGV distance varied depending on the material and the supplier.

Appendix D of this report should be referred to for details of transport assumptions. Appendix D also makes mention of any other assumptions that have been applied.

3.3.3 Site Waste Management Plan (SWMP)

The SWMP has been referenced within this report, however the SWMP (report reference: 107780-PEF-XX-500-T.RP-GG-0001) should be referred to for details of its methodology.

For this report, it is noted that information used within the SWMP regarding quantities of waste and the categorisation of waste was also relevant for the assessment of carbon emissions associated with waste. Any assumptions made when gathering the gathering waste data used within the SWMP, were also applied to the types and quantities of waste inputted into the Carbon Tool.

4 Sustainability Considerations

This section of the Sustainability Statement includes the specific measures and design elements which are being implemented which increase sustainability and reduce impacts on the environment (which is one of the three pillars of sustainability). This section has been split into different sub-headings for the different topics.

4.1 Carbon

As described within the methodology section, a whole- life carbon assessment (based on information available) has been carried out for the proposed scheme which has included emissions associated with material usage and their transport, waste, energy usage and business / employee transport.

Whilst the carbon results have been broken down further and presented within sections 4.2, 4.4, 4.6 and 4.7, a summary of the total emissions is presented in Table 4-1 below. The total emissions associated with the proposed scheme are approximately 180.686 tCO_2e. Appendix E of this document should be referred to for a further breakdown of emissions which shows emissions per each material and waste type.

Table 4-1: Summary of Carbon Emissions associated with the Welfare Compound

Carbon Life Cycle Element	Category	Emissions (tCO_2e)		Total Emissions (tCO_2e)
		Material Emissions	Transport of Material Emissions	
Before use stage - materials	Bulk materials	12.626	10.276	22.902
	Earthworks	3.04	0.088	3.128
	Fencing	1.551	0.033	1.584
	Drainage	3.525	0.099	3.624
	Road pavements	0.416	0.232	0.648
	Street furniture	3.042	0.009	3.051
	Civil structures	20.326	1.396	21.722
				56.659 (total for materials)
Use stage – water usage	Water – mains	1.306		**121.455 (total for energy usage)**
Use stage – electricity usage	Site offices, site vehicles and plant energy - electricity	120.149		
Use stage – employee transport	Private vehicle	0.07		**0.664 (total for business and employee transport)**
Use stage – goods vehicle transport	Goods vehicles – laden Goods vehicles - unladen	0.595		
Before use stage – packaging waste during construction	Mixed construction & demolition waste	0.596 – for landfill 0.064 – recycled		**0.66**
End-of-life stage – waste associated with decommissioning	Various types	0.335 - for landfill 0.913 - recycled		**1.248**

Figure 4-1, below, demonstrates the results per category as the proportion of the total emissions. This highlights that the carbon hotspots (biggest emitters of carbon) for the proposed scheme include the energy usage (specifically the electricity) with approximately 67% of the total emissions and also the materials and their transport (which includes travel by road and sea) which form approximately 31.5% of the total emissions.

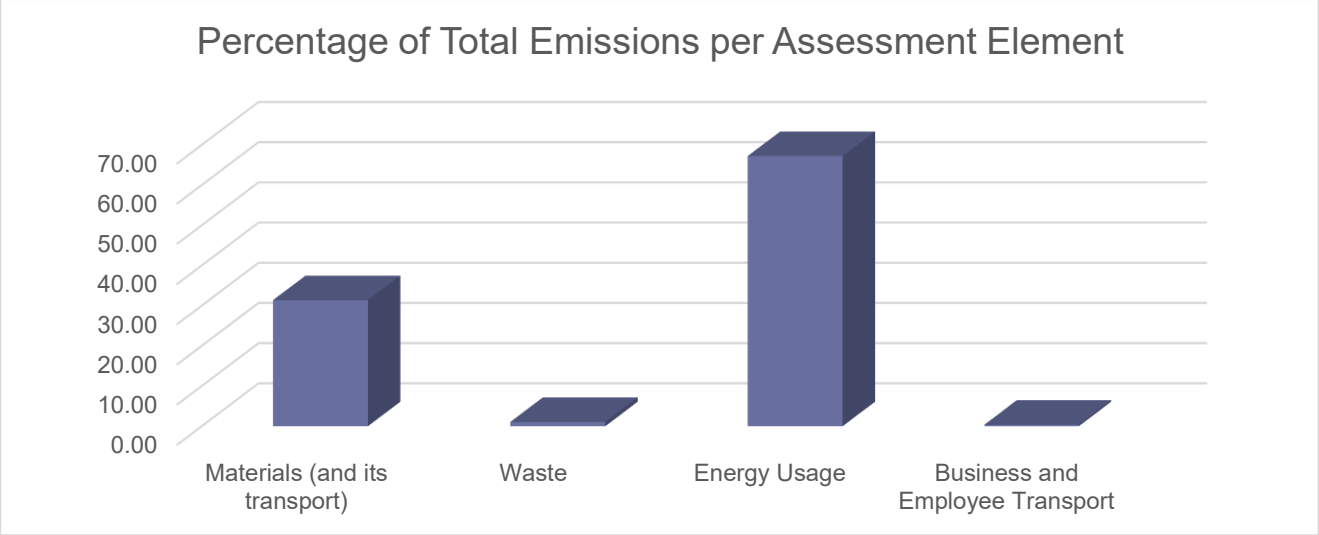

Figure 4.1: Bar Chart representing % of Total Emissions per Carbon Assessment Element

4.2 Energy

The predominant use of energy within the compound will be electricity, such as for lighting and appliance use. A new power supply application will be raised with National Grid (NG) / the district network operators (DNO) for a mains connection for the compound. This would be a temporary supply, which would be removed once the compound is demobilised and reinstated to the existing site usage. The installation will include a pole mounted transformer. Cable ducts for power will be above ground (fixed along the fence and then either overhead or below cabins).

As power supply applications can take a number of months, on site electricity generation will be needed whilst the mains connection is awaited. A 'super silent' generator will be used for this electricity generation on site until the mains connection is in place.

The compound is to support up to 40 people at peak times.

As discussed within Section 4.1, above, the electricity usage associated with the use of the proposed scheme during the expected 4-year duration forms the largest proportion of emissions when compared to other sources of emissions with a value of 120.149 tCO_2e. It is expected that the staff staying within the compound will be encouraged to keep their electricity usage to the minimum, for instance not leaving on lights within their cabin when they are not using the cabin.

Appendix D of this document should be referred to for the assumptions relating to the calculation of electricity, which has been based upon existing mean domestic energy consumption data for the Isles of Scilly.

4.3 Sustainable Design Measures

In line with the Isles of Scilly Local Plan, a description of Sustainable Design Measures has been included within this Sustainability Statement. Sustainable elements of the design include:

- In terms of low and zero carbon technologies, the construction lighting included within the Bill of Quantities has included solar LED lighting towers. Opportunities for use of renewable forms of energy, such as solar, should be sought, if feasible.

- Use of prefabricated cabins. Once the compound is demobilised, it is expected that these cabins will be returned to the supplier to be reused elsewhere (although this will be confirmed by the Contractor once known). This has the potential to reduce emissions associated with construction, as well as the potential to reduce waste.

- As discussed further within the Site Waste Management Plan, as much waste as possible will be diverted from landfill (approximately 97% for waste from construction and approximately 83% for waste associated with decommissioning), which is in line with the waste hierarchy. Waste minimisation measures have been applied to the proposed scheme in line with the Isles of Scilly Local Plan and the Isles of Scilly Waste Reduction Strategy.

- The design of the cabins has allowed for a single sleeper unit and private toilet per staff member. This will increase privacy and boost morale and wellbeing, particularly where staff members may be staying away from home for extended periods of time.

- The provision of onsite catering will help avoid pressure on nearby food services, particularly during the non-tourist season. Conversely, the presence of workers may boost the local economy during non-tourist season when workers visit local facilities (such as cafes, bars, restaurants, museums).

- Where feasible, more efficient vehicle choices for staff vehicles should be pursued, for instance opportunities for electric or hybrid vehicles.

Other topics within this section of the report should be referred to for other details of how impacts are being reduced on available resources (such as water), as well as the surrounding environment and community (thereby acting sustainably), and where enhancements may be achieved.

4.4 Water Efficiency

Water Usage

A metered mains water connection to the Isles of Scilly distribution system will be set up. Whilst the average UK water usage per person per day is 150 litres, the staff staying within the compound will be educated on water usage and its scarcity within the Isles of Scilly and a target of less than 100 litres per person per day will be established. The metred supply shall be used to monitor the effectiveness of this programme.

Within the carbon assessment, the worst-case scenario of 150 litres per person per day was considered. Over the compound's anticipated four-year duration and considering the maximum 40 members of staff, this would equate to 8,766,000 litres. The emissions associated with this are 1.31 tCO_2e (tonnes of carbon dioxide equivalent). This value forms only a very small amount of the total emissions associated with the proposed scheme (approximately 0.7%). If 100 litres (or less) are used per day, this would reduce the total usage to 5,844,000 (or less) which would equate to 0.87 tCO_2e, or less. This would further reduce the proportion of emissions associated with water usage.

The compound design also features some measures specific to maximising water efficiency and minimising water wastage, which include push top taps within the toilets and handwashing facilities, low flush toilets and flow regulators for taps and shower heads.

Additionally, the site induction will make mention of the potable water constraints on the Isles of Scilly and include good practice measures to bring down water consumption across the compound.

Wastewater

For wastewater, a cesspit is proposed in absence of a nearby sewer connection. Flows into the cesspit will be located down gradient of the welfare units. The cesspit will be fitted with a high-level alarm system to prevent overflows and will be regularly emptied and transported to the cess reception facility at Old Town for disposal.

As stated within the Construction Environmental Management Plan (CEMP) for the compound, opportunities to reuse rainwater should be investigated. Rainwater harvesting is a technique commonly used on the Isles of Scilly and is promoted within the Local Plan and Climate Change Action Plan.

4.5 Flood Risk and Drainage

Flood Risk

As demonstrated by online Environment Agency data, the compound is located within Flood Zone 1, which means it is has a low probability of flooding from rivers and the sea. The compound is not within an area at risk of flooding from surface water either. As the compound site is less than 1 hectare and within Flood Zone 1, no specific flood risk assessment is required or specific measures to manage flood risk.

Drainage

The drainage design for the compound includes drainage ditches. To limit silt run-off, stripping back of soils will be limited to necessary areas (access track, parking and laydown) and drainage ditches with topsoil berms will be constructed perpendicular to the slope to slow and direct flows through silt traps consisting of strawbales / geotextiles. The topsoil berm locations are shown on the Proposed Site Plan in Appendix A.

Whilst no specific Sustainable Urban Drainage Systems have been considered, partly due to the temporary nature of the site and the need to reinstate back to existing agricultural conditions following demobilisation, certain measures will be implemented to reduce impacts upon the water environment. As detailed within the CEMP, such measures include:

- Spill kits being available on site to deal with accidental spillages and to prevent pollution.
- All roads within the compound being kept free from dust and mud deposits.
- No site traffic will be allowed to leave the site until the site team are satisfied that the vehicle is clean. A wheel wash station will be located within the site next to the entrance / exit gate.
- Silt traps will be inspected for damage after intense storms and also before and after any intensive use.

It is acknowledged that part of the access route is located within an outer zone of a Groundwater Source Protection Zone (SPZ) and the site is hydrologically connected to the Lower Moors Site of Special Scientific Interest (SSSI). Measures to reduce impacts upon groundwater will include:

- Use of a geotextile membrane where potential contaminants or pollutants are stored. A geotextile membrane is also being used underneath aggregate within the access road, car park and laydown area;
- Spill kits being available.
- All potential sources of contamination (for example, fuels or the generator) will be double bunded to mitigate pollution entering groundwater.

4.6 Sustainable Transport

Transport emissions have also been calculated for the construction period to take account for the number of expected movements of goods vehicles, as well as the staff minibus. Based on the assumptions included within the Construction Traffic Management Plan of an expected 4 two-way movements a day per staff and per goods vehicles over the 91-day estimated construction period, the emissions results equate to 0.664 tCO_2e.

When not being transported for the purposes of work, it is expected that staff members would use alternative modes of travel such as walking, biking, bus or taxi. Online information for St Mary's suggests that golf buggies and bikes can be hired. All such modes are low-carbon and more sustainable methods than private vehicle usage.

Emissions have also been calculated for the transport of materials, although this has been discussed within Section 4.7, below.

4.7 Materials & Waste

Materials

The materials used for the construction of the compound will be transported by both road (on the mainland and on St Mary's) and by sea. To reduce emissions associated with the transport of materials, it is expected that the most suitable closest supplier within Cornwall will be chosen for the required materials.

Emissions associated with the transport of materials have been calculated for both shipping and potential HGV movements from supplier to the port at Penzance. Some suppliers have been identified which can provide multiple materials needed to construct the scheme. If supplier runs could be grouped together, this could reduce transport emissions further.

The emissions associated with the materials and their transport is 56.66 tCO_2e, which forms approximately 30% of the scheme's total emissions. Of the material types to be used, the highest emitters of emissions include pre-cast concrete for paving slabs (approximately 38% of total material and transport emissions with 21.722 tCO_2e), followed by fill, aggregate and sand (approximately 20% of total emissions with 11.61 tCO_2e) and ready-mix concrete (approximately 14% of total emissions with 8.142 tCO_2e).

Waste

A Design Stage SWMP (report reference: 107780-PEF-XX-500-T.RP-GG-0001) has been produced for the compound site. This demonstrates that as much waste as possible will be diverted from landfill during both the construction and decommissioning stages. Some materials will be reused on site, such as excavated topsoil will be reused to make the topsoil berms which form part of the drainage design. Other materials will be recycled off-site.

The largest proportion of waste emissions is associated with decommissioning waste, which includes waste to be recycled and also some types which will go to landfill. The decommissioning waste represents approximately 65% (1.248 tCO_2e) of total waste emissions associated with the proposed scheme's construction and decommissioning stages.

Waste associated with decommissioning has been minimised through seeking to recycle as much as possible, such as aggregate and wood.

Appendix D of this report should be referred to for the details of any specific assumptions or exclusions that have been applied, in line with the SWMP.

4.8 Noise

A noise assessment (report reference: 14933A-20-R01-01-F) has been carried out for the proposed scheme. It has focused predominantly on the compound set up and demobilisation, as well as some operational activities (such as use of a generator and movement of vehicles).

The findings of this assessment suggest that all the predicted worst-case noise levels associated with the compound fall below the SOAEL (significant observed adverse effect level). Considering the duration of the activities and the use of Best Practicable Means measures, it is anticipated that adverse effects will be minimal.

Regarding predicted noise levels for evenings / night-time, the use of the generator falls below the LOAEL (lowest observed adverse effect level) and therefore no adverse effects are considered likely.

As stated within the noise assessment, measures that could be implemented include:

- All construction plant and equipment should comply with UK noise emission limits.
- Machines in intermittent use should be shut down in the intervening periods or throttled down to a minimum.
- All ancillary plant (such as generators) should be positioned so as to cause minimum disturbance (for example, furthest from receptors or shielded by portacabins. If needed, acoustic enclosures or shielding should be provided.

4.9 Ecology

A Preliminary Ecological Appraisal (PEA, report reference: 107780-PEF-XX-500-T.RP-GE-0001) has been carried out for the compound. Some ecological constraints have been identified, including modified grassland and bare ground habitats on site and coniferous woodland, native hedgerow as line of trees and stone wall, and non-native and ornamental hedgerow surrounding the compound site. Various avoidance recommendations have been made, such as:

- Retaining key habitats as far as possible. If trees are to be removed, focus should be on retaining those with important lichen species on the bark.
- Retention of bat foraging flightlines and any trees within bat roosting features.
- Lighting should be designed to avoid spilling onto hedgerows and woodland.
- If any protected species are found during construction, works in that area should be halted immediately and an ecology specialist should be consulted (in line with UK legislation).

Based on the current design, no further ecological surveys or assessments are required.

Whilst no invasive non-native species (INNS) were identified at the compound location during the ecological site walkover, biosecurity measures will be implemented to reduce the likelihood of the introduction or spread of invasive non-native species on St Mary's, such as giving toolbox tools to workers to increase awareness, and examining and ensuring equipment, clothing and footwear is free of INNS (such as seeds or spores) before entering or leaving site. Prior to site clearance, if INNS have been identified a minimum 4m buffer should be applied.

Regarding arboriculture, the compound access track runs parallel to a line of elm trees. To protect the trees, ground protection will be applied such as use of a geotextile membrane laid with a geogrid filled with type 1 aggregate and a no dig solution is proposed within Root Protection Area to minimise impacts to root zones. Protective fencing will also be erected to provide a construction exclusion zone and protect trees from damage.

Ecological Enhancements

The proposed scheme would be temporary and would be reinstated to the former use as grazing pasture following demobilisation. As part of the PEA, consideration has been made of ways to enhance biodiversity at the compound location in line with national and local policy. Such measures include:

- Bats – bat boxes should be considered within the existing woodland and trees in proximity to the site to provide additional roost locations.
- Nesting birds – bird boxes are recommended for trees within the woodland and hedgerow. Roosting pockets are recommended within the hedgerows to provide suitable winter shelter for many species and also to provide habitat for smaller passerine species (such as wren and goldcrest).

- Invertebrates – insect houses, log piles and compost heaps will increase insect diversity within the compound and could be located within the existing hedgerow, woodland or corners of the site where grassland adjoins these habitats. Wildflower planting, including pot plants and planting in tubs, should be incorporated into landscaping to enhance the site for pollinating insects (such as butterflies and bumble bees).

- Lichens – to further enhance the site for sap groove lichen, trees with only light layers of ivy could be controlled to prevent the ivy becoming dominant, younger trees that could become veteran in the future could be identified and kept ivy free, and halo thinning could be incorporated into a hedgerow management plan.

4.10 Site Workers & Operational Considerations

As the majority, if not all, of the workers will be from the mainland (although job opportunities for the local community should be promoted across the Capital Delivery Programme), part of the purpose of the welfare compound is to provide adequate facilities to support up to 40 workers. Staff will be educated about the Isles and specific elements which may not be encountered commonly elsewhere to reduce the likelihood of any harmful or wasteful actions occurring, such as:

- Water being a precious commodity which should not be wasted.

- The protected nature of the islands, such as all islands being located within a Conservation Area and Area of Outstanding Natural Beauty, and there being other designations present throughout the islands.

The education on such issues is likely to be delivered through site induction, toolbox talks and notices placed around common areas (such as canteens and recreation spaces).

As there will be canteens and catering on site, there is the potential for food waste during the construction and operation of the compound (particularly during peak periods). Opportunities to compost food waste should be considered. It is expected that waste produced during operation will be collected and disposed of as part of the St Mary's local waste collection practices.

As part of the Capital Delivery Programme and the overall Sustainability Strategy, opportunities for social engagement with local institutions (such as schools / education centres) and communities will be carried out. This could include opportunities for interns, or STEM activities.

5 Conclusion

The proposed scheme falls in line with relevant legislation and policy relating to sustainability, as evidenced within the tables in Appendix B of this document.

The design of the scheme has included specific elements to increase sustainability and to prevent impacts upon the environment. Some sustainability measures discussed within this Statement include:

- Use of low / zero carbon technologies where feasible, such as through use of solar LED lighting throughout the compound.
- Use of prefabricated buildings which has the potential to reduce emissions associated with the construction of such buildings, as well as reducing waste.
- Production of a Design Stage SWMP to demonstrate how the proposed scheme has diverted as much waste as possible from landfill, in line with the waste hierarchy and also relevant Isles of Scilly policy documents. The SWMP demonstrates that approximately 97% for waste from construction and approximately 83% for waste associated with decommissioning is being diverted from landfill.
- Implementation of measures during construction, such as those captured within the Construction Environmental Management Plan produced for the proposed scheme which increase sustainability and reduce environmental impacts. This is particularly relevant to the management of surface water and reducing risk of pollution, as well as controlling production of dust and noise.
- Measures relating to social issues, such as the design of the cabins being optimised to boost the morale and wellbeing of employees (particularly those who may be staying away from home for extended periods of time) and opportunities for the proposed scheme and the wider Capital Delivery Programme to carry out social value activities (such as involving local communities and places of education or providing local people with job opportunities).

This Sustainability Statement, alongside other relevant documents, demonstrates that sustainability has been considered throughout the design of the compound.

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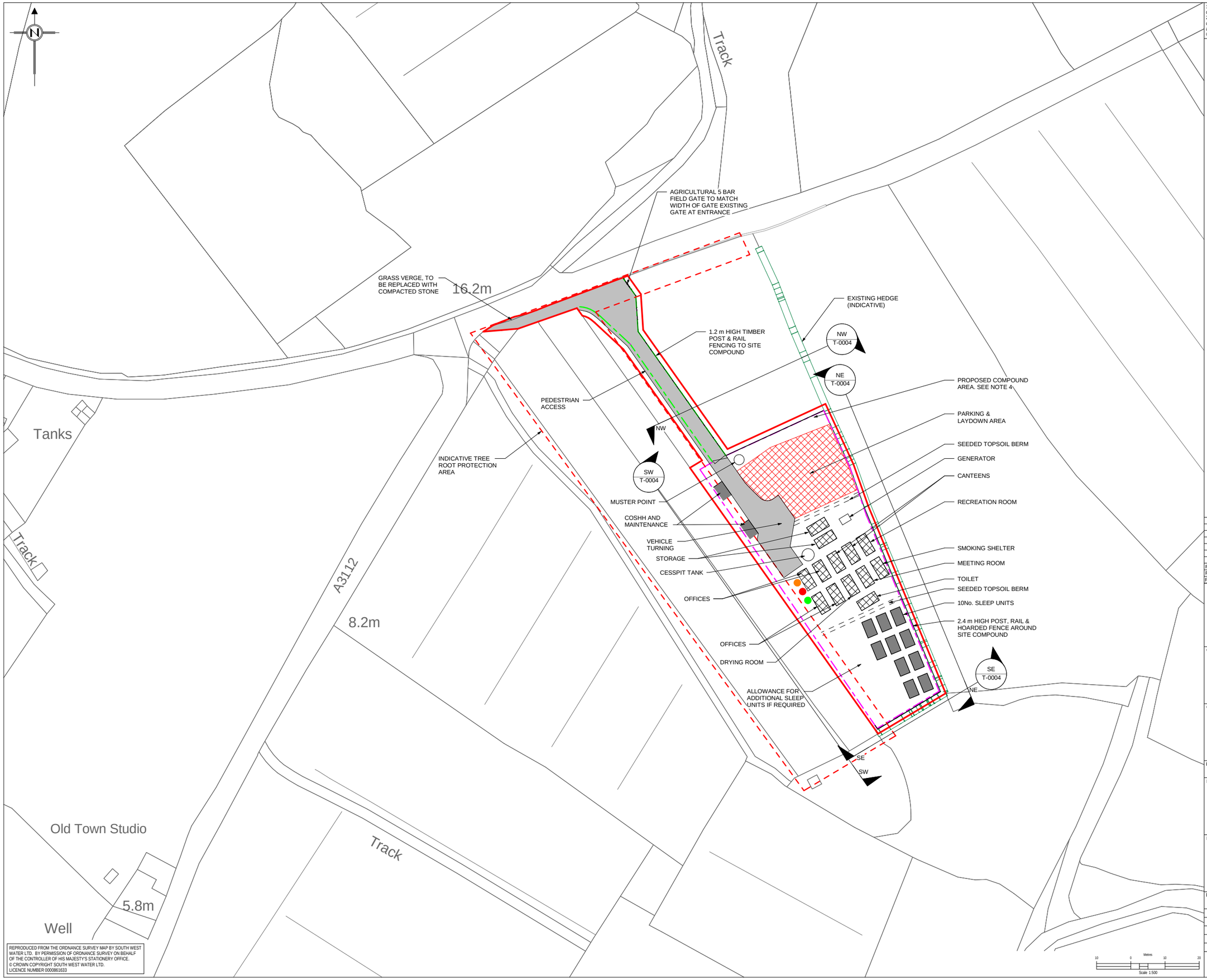
Appendix A Proposed Site Plan



NOTES

1. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE SURVEY DATUM (NEWLYN).
2. DO NOT SCALE FROM THE DRAWING.
3. COMPOUND AREA LIGHTING TO BE LOW LEVEL AND MINIMAL DUE TO DARK SKIES STATUS.
4. PROPOSED COMPOUND AREA (3200m², EXCLUDING ACCESS TRACK)

LEGEND

- ACCESS ROAD (STONE SURFACE. WHERE TREE ROOT PROTECTION IS REQUIRED A NO-DIG, RAISED ACCESS TRACK WITH STONE FINISH OR SIMILAR IS PROPOSED)
- PARKING & LAYDOWN AREA (TOPSOIL STRIPPED, STONE SURFACE)
- FIRE EXTINGUISHER POINT
- FIRE POINT
- FIRST AID POINT
- COMPOUND FENCING
- ACCESS ROAD FENCING
- INDICATIVE TREE ROOT PROTECTION AREA
- DEVELOPMENT SUBJECT TO A PLANNING APPLICATION (3900 m²)

UNIT SIZES

- 4.9m x 3m 16' x 10'
- 6m x 3m 20' x 10'

REV	DESCRIPTION	DRN	DSN	CHK	APP	DATE
P02	FENCE AND HOARDING AMENDED	IC	KT	RN	LJW	05.10.23
P01	FOR INFORMATION	IC	KT	LJW	LJW	06.09.23

Pell Frischmann
BURRATOR HOUSE, PENINSULA PARK, RYDON LANE EX2 7NT
Telephone +44 (0)1392 444 345
Email: pfexeter@pellfrischmann.com
www.pellfrischmann.com

Client: South West Water

Contractor: TRANT
TRANT Engineering Ltd.
Head Office: Rushington House, Rushington, Southampton SO40 9LT
Telephone: (023) 8066 5544
E-Mail: Engineering@trant.co.uk
www.trant.co.uk

Project Status: OUTLINE DESIGN

Project: ISLES OF SCILLY CAPITAL DELIVERY PROGRAMME

Drawing Title: ST MARY'S - WELFARE COMPOUND - PROPOSED SITE LAYOUT - PLANNING DRAWING

Drawing Status: FOR REVIEW AND COMMENT

	Name	Date
Drawn	I. CERDAN	05.10.23
Designed	K. THORNE	05.10.23
Eng Chk	R. NEWELL	05.10.23
Approved	L. WARDELL	05.10.23

Status Code: S3
Scale: 1:500
Revision: P02

Drawing No.: 107780-PEF-XX-500-D.DR-T-0003

Appendix B Legislation and Policy Review Tables

National Legislation and Policy

Table 1, below, covers national legislation and policy relevant to the proposed scheme and the topic of sustainability.

Appendix B: Table 1 – National Sustainability Legislation and Policy

Legislation / Policy Name	Summary	Demonstration of Compliance
Legislation		
Climate Change Act 2008 (as amended)		
Climate Change Act (as amended)	The Act, as amended, sets the framework for the UK to achieve its long-term goals of reducing greenhouse gas emissions by at least 34% against the 1990 baseline and by 100% by 2050 (Net Zero by 2050), whilst also ensuring that steps are taken towards adapting to the impacts of climate change. The Act has introduced a system of carbon budgeting for the UK which aims to constrain the total amount of carbon emissions in a given time period. The Act also sets out a procedure for assessing the risks of the impact of climate change for the UK and places a requirement on the Government to develop an adaptation programme policy.	Whilst this legislation is not directly applicable to the proposed scheme, through efforts to reduce greenhouse gas emissions (including carbon), the proposed compound supports the aim of the UK Government to reduce emissions and take account of climate change implications.
Environment Act 2021		
Environment Act	The Act aims to provide a new legal framework for environmental protection (particularly since the UK no longer comes under EU law). The Act prioritises the topics of air quality, water, biodiversity, resource efficiency and waste reduction. The Act also sets out the mandatory requirement for 10% biodiversity net gain (from November 2023) for planning permission projects (with some exceptions).	This Sustainability Statement discusses the design approach and any specific measures that are being taken towards increasing sustainability, minimising impacts on the natural environment and optimising the design to reduce waste and increase resource efficiency (such as promoting reuse of material on-site).
The Promotion of the Use of Energy from Renewable Sources Regulations 2011 (as amended)		
The Promotion of the Use of Energy from Renewable Sources Regulations (as amended)	The Regulations, as amended following the UK's exit from the EU, sets out a target for the UK of at least 15% for the share of energy from renewable sources in 2020. The Regulations aim to increase the proportion of energy from renewable sources. This is the UK equivalent of the EU's 2019 Directive on the same topic.	The lighting towers to be used during the construction of the compound will be solar towers, which reduces the need to plug in the lighting to non-renewable power sources.
Wildlife and Countryside Act 1981 (as amended)		
Wildlife and Countryside Act (as amended)	This Act is the primary piece of legislation which protects animals, plants and habitats in the UK. The Act also has a schedule of non-native animal and plant species. This is of relevant to development schemes which may involve disturbance of the natural environment, including habitats, flora and fauna.	A Preliminary Ecological Appraisal has been carried out for the proposed scheme which has made note of biodiversity present within the site, including any notable or protected species or habitats. Avoidance and enhancement recommendations have been made within the PEA and the Construction Environmental Management Plan which will reduce impacts upon the natural environment, including biosecurity measures to reduce the risk of spread or introductive of non-native animal or plant species.

Legislation / Policy Name	Summary	Demonstration of Compliance
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017		
Water Framework Directive Regulations	The Regulations transpose the EU Water Framework Directive (WFD) into UK law. The WFD sets out a framework which aims to protect and improve the ecological and chemical health of rivers, lakes, estuaries, coastal waters and groundwaters.	The Isles of Scilly is covered by two WFD water bodies (one coastal and one groundwater). This Sustainability Statement has included measures to manage surface water and to reduce risk of pollution, which will reduce risks to the water environment (particularly the underlying groundwater which is protected by a Source Protection Zone within part of the site boundary).
The Waste (England and Wales) Regulations 2011 (as amended)		
Waste Regulations	The Regulations, as amended, implements the revised EU Waste Framework Directive and sets out requirements for the management of waste (including collection, transport, recovery and disposal) in England and Wales. The Regulations also gives details on applying the waste hierarchy and creation of waste prevention programmes and waste management plans.	Waste management measures have been applied alongside and as part of the Site Waste Management Plan. The waste hierarchy has been adhered to, which includes diverting waste from landfill as far as possible. The Sustainability Statement makes mention of the percentages of waste diversion from landfill during construction and decommissioning.
The Environmental Targets (Biodiversity) (England) Regulations 2023		
Environment Targets (Biodiversity) Regulations	This document includes targets for the long-term biodiversity for the restoration or creation of wildlife-rich habitat is that on or after the day these Regulations come into force, more than 500,000ha of a range of wildlife-rich habitats are to be restored or created by 31st December 2045.	Various ecological enhancements have been proposed within the Preliminary Ecological Appraisal for the scheme, which will help improve biodiversity at the site location. This includes measures such as implementation of bat and bird boxes in the nearby existing woodland and providing wildflower planting (including potted plants) to enhance the site for pollinating invertebrates, amongst other things.
Policy		
National Planning Policy Framework (NPPF), 2023*		
Section 2: Achieving sustainable development	This section of the policy framework states that the purpose of the planning system is to contribute to the achievement of sustainable development. The NPPF highlights the three pillars of sustainability with an economic, social and environmental objective. For the environmental objective, this includes "making effective uses of land, improving biodiversity, using natural resources prudently, minimising wase and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy".	This Sustainability Statement demonstrates that there has been a consideration of sustainability when designing the compound. Additionally, the purpose of the compound is to support a number of infrastructure projects which will help the Isles of Scilly become more resilient and self-sufficient. This policy is translated to the Isles of Scilly throughout the Council of the Isles of Scilly Local Plan 2015-2030.
Section 14: Meeting the challenge of climate change, flooding and coastal change	This part of the NPPF notes the planning system should support the transition to a low carbon future in a changing climate, taking account of flood risk and coastal change (issues highly relevant to the Isles of Scilly). New development should be planned for in ways that "a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be manged through suitable adaptation measures'" and "b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design". Regarding flood risk, an emphasis is placed on incorporating sustainable drainage systems.	This Sustainability Statement covers the approach of the scheme to various aspects relevant to this section of the NPPF, including approach to drainage, discussion of flood risk, and a carbon assessment to measure emissions associated with the proposed design. This policy is translated to the Isles of Scilly within various sustainable policies within the Local Plan, including policy SS7.

Legislation / Policy Name	Summary	Demonstration of Compliance
Section 15: Conserving and enhancing the natural environment	There cannot be a presumption in favour of sustainable development if a proposal is to have a significant adverse impact upon the natural environment, such as habitats. Development should also be appropriate for its location, taking into account potential pollution effects on health, living conditions and the natural environment.	The proposed compound is in a location outside of ecological designations and therefore should not have a significant adverse effect upon the natural environment, or prevent its conservation. This policy is translated to the Isles of Scilly within policy OE2 of the Isles of Scilly Local Plan.
Section 16: Conserving and enhancing the historic environment	This section of the NPPF relates to the issue of sustainability through recognising the importance of the historic environment for sustainability communities in terms of boosting the economy.	The proposed compound is not located within an area designated for historic interest. This means that the proposed compound should not adversely affect the existing historic environment or prevent its conservation. This policy is translated to the Isles of Scilly within policy OE7 of the Isles of Scilly Local Plan.
Section 17: Facilitating the sustainable use of minerals	This part of the NPPF recognises the finite nature of minerals and the need for best use of such materials in order to ensure there is a sufficient supply for providing new infrastructure, buildings, energy and goods to the country.	This Sustainability Statement has been supported by a Site Waste Management Plan which records how the proposed compound will manage its waste and follow the waste hierarchy, which includes ways the scheme will reduce its material usage and waste. This policy is translated to the Isles of Scilly within policy OE6 of the Isles of Scilly Local Plan.
*It is noted that the NPPF is supported by various National Planning Practice Guidance. Such NPPG has not be included in this table though as they are not considered to be policy themselves.		
National Planning Policy for Waste, 2014		
National Planning Policy for Waste	This document sets out the government's ambition to be more sustainable regarding resource use and management. In terms of determining planning applications, the policy states that non-waste developments should make sufficient provision for waste management such as providing adequate storage facilities on site, and the handling of waste arising from a development's construction and operation should maximise reuse or recovery opportunities and minimise off-site disposal which is in line with the waste hierarchy.	This Sustainability Statement has been supported by a Site Waste Management Plan which records how the proposed compound will manage its waste and follow the waste hierarchy, which includes ways the scheme will reduce its material usage and waste. This policy is supported by policy SS2 within the Isles of Scilly Local Plan.
Our Waste, Our Resources: A Strategy for England, 2018		
Waste and Resources Strategy	This document sets out the strategy for England regarding waste and resources. It covers various topics, including sustainable production and the circular economy, managing waste and resource recovery, and cutting down on waste.	As demonstrated within Section 4 of the Sustainability Statement, and the Site Waste Management Plan for the compound, as much waste as possible is being diverted from landfill and instead either being reused on site, or recycled / reused offsite. This supports the aims of the waste and resource strategy.
25 Year Environment Plan, 2018		
Section 1: Using and managing land sustainability	This part of the Plan includes several policies. Those relevant to the proposed compound include reducing risks from flooding and coastal erosion and embedding an 'environmental net gain' principle for development.	The selected location of the compound is not in an area at risk of flooding, nor is it located within close proximity of the coast. Section 4 of this Statement provides additional details about this, as well as measures taken to reduce impacts on the environment.

Legislation / Policy Name	Summary	Demonstration of Compliance
Section 2: Recovering nature and enhancing the beauty of landscape	Policies relevant to the proposed compound include protecting and recovering nature (improving biosecurity to protect and conservate nature) and respecting nature in how we use water.	Section 4 of this Statement reports on measures taken to reduce impacts on the natural environment, including biosecurity measures which are particularly important on an island, and also measures relating to water use management.
Section 4: Increasing resource efficiency and reducing pollution and waste	Policies relevant to the proposed compound including maximising resource efficiency and minimising environmental impacts at end of life and reducing pollution.	Section 4 of this Statement makes mention of the Site Waste Management Plan produced for the compound and highlights how waste has been reduced, such as through. Waste
Section 6: Protecting and improving our global environment	Policies relevant to the proposed compound including leaving a lighter footprint on the global environment (enhancing sustainability), tackling climate change and protecting and improving international biodiversity.	Section 4 of this Statement references the design measures being implemented by the proposed scheme which includes maximising sustainable opportunities, ensuring resilience against climate change and reducing impacts upon the natural environment.
Environmental Improvement Plan, 2023		
Environmental Improvement Plan	This is the first revision of the 25 Year Environment Plan. It makes mention of key policies needed to deliver the set targets, such as promoting Biodiversity Net Gain, use of nature-based solutions to reduce pollution (such as sustainable drainage), sustainable land use, sustainable use of natural resources, building climate resilience and tackling non-native species.	Whilst not directly policy, this Plan provides a revision of the 25 Year Environment Plan. Compliance with relevant points within the Plan are covered in the above boxes of this table. With the works taking place on a small island, there is an emphasis on making things as sustainable as possible and to ensure that the compound does not leave the environment and island in a worst state than before it was established (such as preventing introduction or spread of non-native species like rats or Dutch elm disease).
Build Back Better: Our Plan for Growth, 2021		
Build Back Better: Our Plan for Growth	Whilst this document does not include specific policies, it does cover the overarching growth plan for the UK, including the transition to net zero and production of greener infrastructure and development. The natural environment will be prioritised and should be left in a better condition than it was found in.	Whilst this Statement and the proposed compound are not directly linked with this Plan, the Statement does cover measures that demonstrate how the proposed compound will not have an adverse impact on the natural environment and will provide a measure of the expected emissions associated with the construction and operation.
Net Zero Strategy: Build Back Greener, 2021		
Net Zero Strategy: Build Back Greener	This document includes specific policies relating to UK power, fuel supply, industry, heat and buildings, transport, natural resources and waste, and greenhouse gas. Whilst this policies are mostly relevant to the UK as a whole, the document demonstrates the UK's ambition to be greener and meet its net zero by 2050 target.	Whilst this Sustainability Statement and the proposed compound are not directly linked with this Strategy, the design of the proposed compound will limit emissions associated with construction. Through demonstrating how the compound will act sustainably, it works towards this strategy of reducing emissions and greening development.

Regional Policy

Table 2, below, covers regional policy relevant to the proposed scheme and the topic of sustainability.

Appendix B: Table 2 – Regional Sustainability Policy

Policy Name	Summary	Demonstration of Compliance
SWW ' Our Promise to the Planet: Carbon-busting Net Zero Plan', 2021		
Overview	This document discusses the SWW pledge to achieve Net Zero carbon for operational emissions by 2030, and Net Zero by 2045 for all other carbon emissions (including from suppliers and construction activities).	Whilst the proposed scheme is not directly relevant to the net zero targets, efforts are being made to reduce emissions from materials, energy, transport and waste associated with the compound.
Sustainable Living	One of the key pillars within SWW's Net Zero Plan, this element of the strategy focuses on reducing emissions associated with operation, such as increasing energy efficiency, use of low carbon fuel sources, as well as reducing leaks and help customers to use less water.	As a SWW project, measures should be in place to maximise efficiency regarding energy, water and resources and waste should be minimised. This Statement discusses how such measures have been established. Additionally, employees staying within the compound will also be encouraged to reduce their average daily water consumption to less than 100 litres instead of the standard 150 litres.
Championing Renewables	This element of the strategy focuses on maximising self-generation from renewables at SWW sites throughout the South West. Where self-generation is not possible, 100% of purchased electricity will be from renewable sources.	Outdoor lighting provided within the compound during construction will be in the form of solar-powered LED lighting towers. Where feasible, opportunities should be sought for use of solar power elsewhere within the compound.
Reversing Carbon Emissions	This element of the strategy focuses on reversing carbon emissions from core SWW activities, as well as supporting low carbon footprint processes.	Whilst the proposed scheme will not involve reversing emissions or providing carbon sink / sequestration opportunities, efforts have been made to reduce emissions from materials, energy, transport and waste.
Cornwall and Isles of Scilly Environmental Growth Strategy, 2021		
Environmental Growth Strategy	This strategy sets out a long-term framework for preserving and enhancing the natural environment across Cornwall and the Isles. The tackling of invasive species forms part of the vision.	As demonstrated within Section 4 of this Sustainability Statement, measures are being taken to reduce impacts on the natural environment, including biosecurity measures to avoid introduction or spread of non-native species such as rats and Dutch elm disease.
Climate Adaptation Strategy for Devon, Cornwall, and Isles of Scilly – Consultation Draft 2023		
Climate Adaptation Strategy	This strategy includes both an assessment of climate change risks and opportunities for Devon, Cornwall and Isles of Scilly, as well as setting out strategic adaptation plan and a 5-year action plan for regional collaboration. Key climate change impacts assessed included river and surface water flooding, sea level rise (coastal flooding and erosion), reduced water availability (drought conditions) and temperature change and extreme heat / cold events, amongst other things.	This Sustainability Statement makes mention of some of the topics discussed within the Strategy document, including the approach to drainage and surface water management, as well as measures to reduce waste and carbon (which are connected with the issue of climate change).

Local Legislation and Policy

Table 3, below, covers local legislation and policy relevant to the proposed scheme and the topic of sustainability.

Appendix B: Table 3 – Local Sustainability Legislation and Policy

Legislation / Policy Name	Summary	Demonstration of Compliance
Legislation		
Isles of Scilly (Application of Water Legislation) Order 2020		
Explanatory note	a) The main purpose of this Order is to apply certain provisions of the Environment Act 1995 and Water Resources Act 1991 to the Isles of Scilly with modifications to provide for the specific circumstances on the Isles. This Order also applies certain secondary legislation to the Isles of Scilly. b) The application of this legislation to the Isles of Scilly will enable environmental regulation of water and sewerage services and water and waste activities, and for the water and sewerage undertaker to provide both household and non-household services on the Isles.	This piece of legislation is relevant to the proposed scheme as it will help facilitate and support the Capital Delivery Programme, which will deliver improvements to the existing water and wastewater systems across the five inhabited islands.
The Environmental Protection Act 1990 (Isles of Scilly) Order 2006		
Explanatory Note	The main purpose of this Order is to apply certain provisions of the Environment Act 1995 and Water Resources Act 1991 to the Isles of Scilly with modifications to provide for the specific circumstances on the Isles. This Order also applies certain secondary legislation to the Isles of Scilly. The application of this legislation to the Isles of Scilly will enable environmental regulation of water and sewerage services and water and waste activities, and for the water and sewerage undertaker to provide both household and non-household services on the Isles.	This piece of legislation is relevant to the proposed scheme as it will help facilitate and support the Capital Delivery Programme, which will deliver improvements to the existing water and wastewater systems across the five inhabited islands.
Policy		
Isles of Scilly Local Plan 2015-2030		
SS1: Principles of Sustainable Development	Required to show how the compounds development: a) Is conserving and enhancing the outstanding natural, built and historic environment. b) Is locating, designing and constructing development where it makes a positive contribution to reducing the islands' carbon footprint and consumption of natural resources. c) Is improving accessibility and creating a network of safe and well-connected routes by integrating measures that encourage and promote walking, cycling and electric vehicles as part of any new development wherever opportunities allow.	Various factors were considering when choosing the compound location, including the fact that it was not located within the immediate proximity to environmental or historic designations, nor within an area of flood risk. The location was also used previously for similar compounds on other schemes. Section 4 of the report should be referred to for specific details of compliance, such as sustainable design measures, proposed enhancements (including bat and bird boxes in nearby woodland) and measures to reduce impacts on the natural environment (including habitats and trees), amongst other things.

Legislation / Policy Name	Summary	Demonstration of Compliance
	d) Is promoting the value of biodiversity, geodiversity and soils, including the potential contribution from natural capital and ecosystem services. e) Is taking into account the long-term implications of climate change and rising temperatures for flood risk, coastal change, water supply, biodiversity and landscapes. f) Is promoting cohesive and resilient communities on each island. g) Is generating and sustaining economic activity. h) Ensuring designs and materials are otherwise sustainable in a complementary and appropriate manner. i) The development should complement distinctive local features and patterns, with regard given to the orientation and character of the immediate area. j) As a minimum, bird and bat boxes should be incorporated into the design of buildings or extensions, with measures to reduce any impacts from current threats to biodiversity on the islands, including rats.	
SS2: Sustainable Quality Design and Place-making	a) By ensuring that buildings can easily be altered and adapted to meet changing social and economic conditions and are resilient to climate change, including features to mitigate or enable rapid recovery from a flooding event where recommended in a Flood Risk Assessment. b) By providing opportunities for achieving measurable net gains in biodiversity by ensuring that natural and semi-natural features are created and enhanced as integral elements of the design, through the provision of features such as bird and bat boxes, and by incorporating measures that support the removal of any threats to the islands' biodiversity. c) By promoting physical activity by incorporating Sport England Active Design principles wherever appropriate. d) By requiring sensitively designed adverts and signage that are appropriate and sympathetic to their local setting in terms of scale, design and materials. e) By incorporating measures to reduce any actual or perceived opportunities for crime or anti-social behaviour, and which promote safe living environments minimising the consumption of resources by requiring sustainable construction and design by: I. Incorporating high standards of energy efficiency and maximising opportunities for the micro generation of renewable, low-carbon and decentralised energy, and where appropriate plugged into the Smart Grid. II. Incorporating passive design measures for heating, cooling, ventilation and natural light, to reduce overall energy demand and improve energy efficiency.	Whilst not all of these points are relevant to the proposed compound, considering its temporary nature, the topics discussed within this policy have been considered and applied to the design (where feasible), such as siting the compound outside of a higher risk flood zone area, recommending biodiversity enhancements (as BNG is not yet mandatory for schemes which fall under the 'small sites' criteria), undertaking of a Site Waste Management Plan to promote reuse and recycling of materials and diversion of waste from landfill, and implementation of a drainage strategy and surface water management measures. Whilst not permanent construction, a discussion of Sustainable Design Measures has been included within Section 4 of this document.

Legislation / Policy Name	Summary	Demonstration of Compliance
	III. Using natural resources more prudently, including the use of locally sourced, recycled or low carbon materials in construction where they are available and represent a viable option. IV. Reducing pressure on water resources and increasing re-use by incorporating effective water management measures, including Sustainable Urban Drainage Systems, green roofs and water saving devices, and rain/grey water collecting and recycling facilities. V. Providing appropriate vermin-proof waste and recycling storage appropriate for the scale of development proposed, and provision for kerbside waste and recycling collections consistent with the islands' waste management practices. f) Development proposals that involve the construction or conversion of buildings will need to be supported by a statement of Sustainable Design Measures (SDM) and a Site Waste Management Plan (SWMP).	
SS5: Physical Infrastructure	Development proposals, where they comply with other relevant policies within this Local Plan, will be supported where they are: a) Evidenced by the necessary existing or planned physical infrastructure to enable its delivery. b) Or for new physical infrastructure where this makes a positive contribution to the sustainability of the islands.	The proposed compound supports this policy when taking into account the purpose of the compound being to provide welfare and office space, as well as some storage, for the Capital Delivery Programme across the five inhabited islands.
SS6: Water and Wastewater Management	Development that requires a new connection to mains or private drinking or wastewater systems will be permitted provided that: a) It does not result in the deterioration of, and where possible assists in improving water quality, to support the attainment of the requirements of the Water Framework Directive. b) It complies with national policy and guidance in relation to flood risk. c) It does not result in a risk to the quality of groundwater, and there is no risk to public or private water supplies. d) All new homes (including replacement dwellings and conversions) achieve a water consumption standard of no more than 110 litres per person per day. e) All new non-residential developments of 500 sqm or more achieve the BREEAM 'excellent' credit required for water consumption. f) It does not impact on habitats and designated sites Criteria. g) d) – f) need to be satisfied unless it can be demonstrated that it is not financially viable to do so. h) If neither a mains nor package waste-water treatment plant is feasible to deliver the requirements of a new development, then a system incorporating septic tanks may be considered, provided there are no adverse environmental or public health effects from the installation.	Not all of these policy points are relevant to the compound considering it is a temporary piece of infrastructure, nonetheless Section 4 of this document provides details of the proposed water and wastewater management. The water system will be connected to the mains supply, whilst as there is no nearby connection into the sewer, a cesspit is being used for wastewater. Surface water will be managed to ensure that no pollutants enter into the surface water or groundwater environment.

Legislation / Policy Name	Summary	Demonstration of Compliance
SS7: Flood Avoidance and Coastal Erosion	a) Development proposals to build below the 5 metre contour (5 metres above Ordnance Datum, Newlyn) or in other areas shown to be at risk of flooding or coastal erosion, will not be permitted unless an appropriate and proportionate Flood Risk Assessment (FRA) demonstrates how the flood risk will be managed, and that: I. The development, taking climate change into account does not create a flood risk over its lifetime to existing or proposed properties and/or surrounding land. II. Appropriate acceptable mitigation and recovery measures can be undertaken to ensure no significant adverse impact on human health or the natural and built environment as well as cultural heritage. III. If there is any doubt, the precautionary principle will apply. b) All major developments, regardless of location, should also be accompanied by a proportionate Flood Risk Assessment and appropriate sustainable drainage system.	As explained further within Section 4 of this document, the compound is not located within an area with a high probability of flooding. As the site is located within Flood Zone 1 and is below 1ha, no specific flood risk assessment is required. Surface water within the compound will be managed appropriately.
SS8: Renewable Energy Developments	a) Except for proposals for on-shore wind energy generation, development proposals for renewable energy that contribute towards creating sustainable island communities, including the implementation of projects that form the Smart Islands programme, and any other community programme or project that seeks to reduce greenhouse gas emissions and move towards a carbon neutral island environment, will be supported where they: I. Contribute towards meeting domestic, community or business energy needs within the islands. II. Conserve the scenic beauty, landscape, seascape, cultural heritage, or historic environment of the islands, including any cumulative and intervisibility impacts. III. Protect and enhance biodiversity and the maintenance of wildlife populations such as sea birds. IV. They provide environmental enhancement and community benefits wherever possible. V. They would not have a significant adverse effect on the amenity of residents in terms of noise, dust, odour, reflected light, traffic or visual intrusion. VI. There would be no significant adverse effects on airport radar, air traffic control and telecommunications systems; and g) they contribute directly to energy conservation. b) Proposals should include details of associated developments, including ancillary buildings and transmissions lines, which should be located below ground where possible to reduce the visual impact. Where appropriate,	Whilst not all of this policy is relevant to the proposed scheme which is not a renewable energy development, the compound is of some relevance to this policy in that the project has sought to reduce its greenhouse gas emissions (specifically carbon) in terms of its material usage, transport of materials and staff, waste production, and energy and water usage.

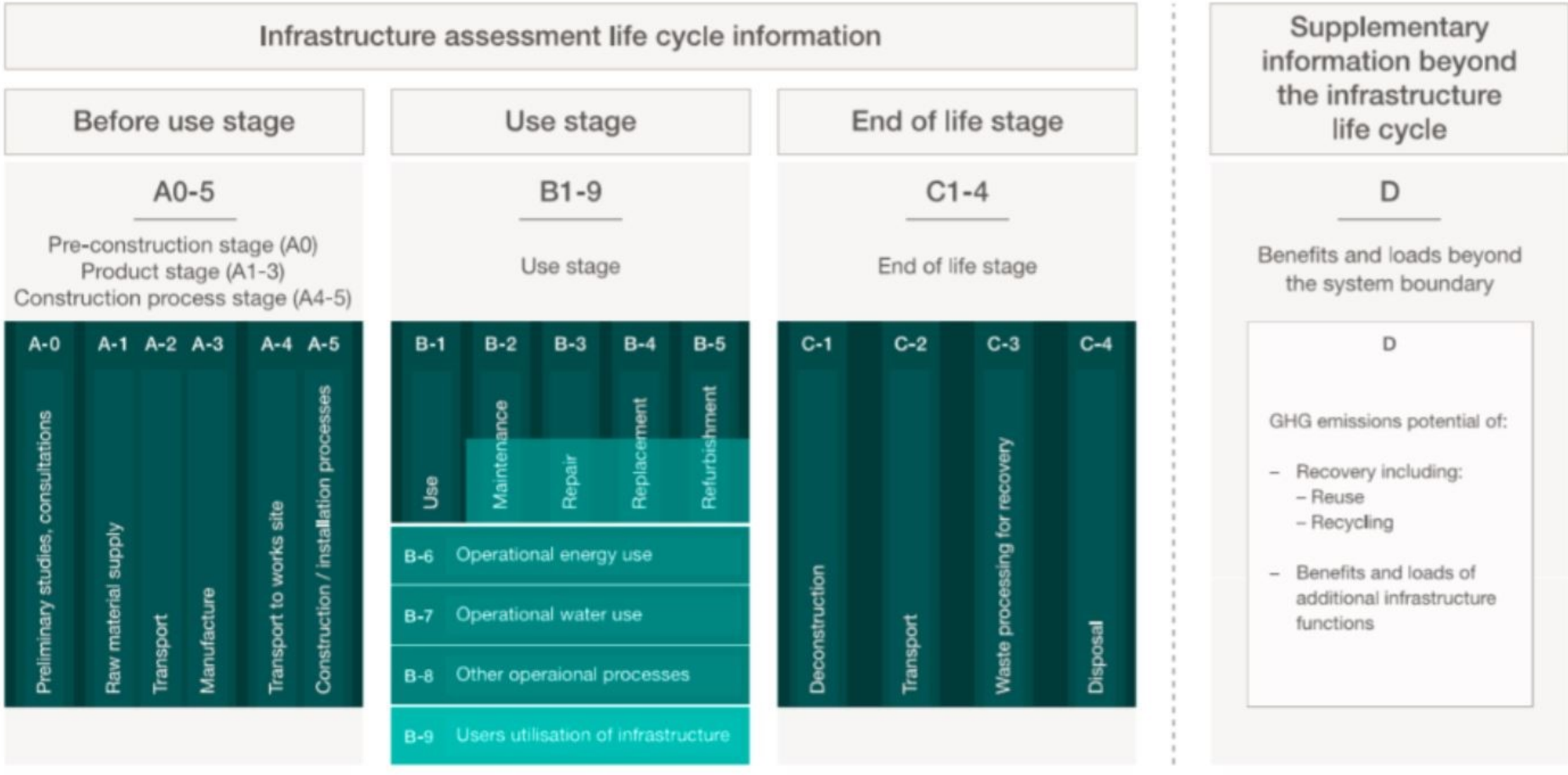
Legislation / Policy Name	Summary	Demonstration of Compliance
	planning permissions will be subject to conditions that require the implementation of a satisfactory restoration scheme following decommissioning of the equipment and apparatus.	
SS9: Travel and Transport	a) Development proposals that prejudice the effectiveness and efficiency of the operation of transport links and associated infrastructure will not be permitted. b) Support will be given to proposals that improve the islands' air and sea links and associated infrastructure.	Whilst there will be transport going to and from the compound site, the number of movements per day is likely to be minimal as discussed within the scheme's Construction Traffic Management Plan. This will not prejudice the effectiveness or efficiency of the operation of transport links on island. The scheme will utilise existing shipping locations and roads, with the exception of the proposed new access route within the compound boundary.
SS10: Managing Movement	a) Development that has the potential to generate vehicular movements and car parking will be permitted provided that: I. Provision is made to support and promote the use of sustainable transport such as walking, cycling and electric vehicles, where appropriate. II. It does not have an adverse impact on the function, safety and character of the local highway network. III. An appropriate level of off-street cycle and car parking and electric vehicle charging is provided, considering the scale and type of development and the accessibility of the location to facilities and services. b) Development that generates significant amounts of movement must be supported by a Transport Assessment and Travel Plan.	See above box for some information. Section 4 of this report also provides details about expected vehicle movements and transport. When staff are not working and need to travel, it is expected that more sustainable methods of transport will be used such as walking, cycling, and taking advantage of options to hire golf buggies, electric bikes etc.
LC4: Staff Accommodation	1. New staff accommodation for businesses and organisations will be permitted where: a) An appraisal is submitted demonstrating that there is a functional and operational need for the proposed accommodation that cannot be met by existing suitable accommodation available in the area. b) The size and type of the proposed accommodation is appropriate to the functional and operational needs of the business or organisation. c) On St Mary's the proposed accommodation is within or adjoining an existing settlement unless it involves the re-use of an existing building in accordance with Policy SS3. 2. All staff accommodation permitted will be subject to occupancy restrictions. In addition to the above, seasonal staff accommodation will only be permitted where it: d) Is in an area that relates well to the business where possible, except for the re-use of buildings. e) Does not cause harm to residential amenity through staff working unsociable hours.	The main purpose of the welfare compound is to provide accommodation and welfare facilities for workers on the Capital Delivery Programme. This has been considered appropriate due to the scale and duration of works proposed, particularly during the summer months when existing island accommodation may be difficult to find. The compound will support up to 40 people, at peak times. Residential amenity at unsociable hours will not be adversely impacted as the compound is predominantly for sleeping and welfare, as opposed to working.

Legislation / Policy Name	Summary	Demonstration of Compliance
	f) Where staff accommodation is required for a new business, the development will only be supported where it is demonstrated that the business is viable in the long term, supported by a business plan for a minimum of five years.	
OE2 – Biodiversity and Geodiversity	1. Development proposals will be permitted where they conserve and enhance biodiversity and geodiversity, giving particular regard to ecological networks and areas with high potential for priority habitat restoration or creation, and should: a) Protect the hierarchy of international, national and local designated sites in accordance with their status. b) Retain, protect, and enhance features of biodiversity and geological interest (including supporting habitat and commuting routes through the site and taking due account of any use by migratory species) and ensure appropriate and long-term management of those features. c) Contribute to the restoration and enhancement of existing habitats and the creation of wildlife habitats and linkages between sites to create and enhance local ecological networks. d) Seek to eradicate or control any invasive non-native species present on site. e) Be required to contribute to the protection, management and enhancement of biodiversity and geodiversity. 2. Development proposals must: a) Apply the mitigation hierarchy to all proposals. b) Demonstrate how they conserve or enhance biodiversity and ecosystem processes. c) Follow local guidance on biosecurity to control the spread of invasive non-native species. d) Ensure proportionate and appropriate biodiversity net-gain is secured. 3. Development proposals will not be supported where significant and harmful direct or indirect effects on biodiversity and ecosystem processes are identified, unless: a) The need for the development clearly outweighs the harm caused. b) An appropriate scheme is proposed that will secure compensation and net-increases in biodiversity. 4. Development proposals will not be permitted where a detrimental impact is identified to geodiversity sites unless the need for development outweighs the harm caused.	As demonstrated within Section 4 of this document, a Preliminary Ecological Appraisal has been undertaken for the compound and its immediate surroundings. Measures to avoid and reduce impacts on the natural environment have been included within the Preliminary Ecological Appraisal, Construction Environmental Management Plan and referenced within this document. This includes measures to prevent introduction or spread of invasive non-native species such as rats or Dutch elm disease/
OE3 – Managing Pollution	a) A development proposal that has the potential to generate pollution, including of ground, water, noise, vibration, light or air, will only be permitted where it can be demonstrated that there would not be any	Section 4 of this report, alongside the Construction Environmental Management Plan, provides details of measures to manage potential pollution, such as providing spill kits on site, double bunding areas where pollutants may be contained, and providing a specific strategy for

Legislation / Policy Name	Summary	Demonstration of Compliance
	adverse impact on human health, the natural environment or general amenity. b) Where development is proposed on land that is suspected to have historically generated any pollution, then a site environmental survey may be required before development is permitted. The Phase 1 report will identify any potential environmental risks that cannot be mitigated through an environmental management plan. The report will make recommendations as to whether a Phase 2 Intrusive Ground Investigation is required.	drainage. A noise assessment has been completed which suggests that there will be no significant adverse impacts upon receptors during daytime or evening / night-time. Lighting on site is required to ensure the health and safety of staff, but this will be limited to reduce lighting pollution impacts. As the site has been used previously for similar purposes, it has provided a good understanding of historic conditions at the compound.
OE4 – Protecting Scilly's Dark Skies	Development proposals that include external lighting will only be permitted where it can be demonstrated that the lights are essential for safety, security, or community reasons, and where details are provided of attempts to minimise light pollution, including: a) Costs to the environment (including the unnecessary use of electricity). b) Skyglow (visible glow caused by scattering and reflection from clouds and the atmosphere). c) Light nuisance (creating amenity nuisance, highway hazards and restricted views of the night sky. Glare (over-bright and poorly directed lights that dazzle or discomfort those who need to see, by concealing rather than revealing).	Proposed site lighting will be in the form of solar-powered LED lighting towers, and some LED lamps along the pedestrian walkway. Lighting will also be provided in doors. All lighting is essential for health and safety and security purposes, which will reduce the need for excessive or unnecessary lighting that could act as a source of light pollution.
OE5 – Managing Waste	a) All development proposals must demonstrate best practice in addressing waste management solutions, must align with the waste hierarchy, and a site waste management plan (SWMP) must be submitted to support planning applications. b) Construction and demolition waste should be minimised and must be managed and re-used on-island where there will be no harmful impacts. Where re-use on-island would result in an environmental risk to human health, biodiversity, the historic environment, the amenity of neighbouring properties or land uses, or the water environment, then appropriate off-island management or disposal will be required. c) Significant proposals, including for major development, must demonstrate how the construction and operational phases of the development will be consistent with the principle of sustainable waste management, through a waste management plan to include a waste audit, which should be submitted with the application. Waste facilities for re-use, recycling, composting and the generation of heat/energy, or the co-location of such uses, will be permitted where they improve the sustainable management of waste on the islands and accord with other relevant policies in the Local Plan	As discussed further within Section 4 of this document, a Site Waste Management Plan has been produced for the compound which is in line with the waste hierarchy and which promotes the reuse and recycling of materials, with the diversion of as much waste as possible from landfill.
OE6 - Minerals	Support will be given to the use of construction materials and minerals already on the islands, through the use of recycled and secondary	Similar to the above box, the Site Waste Management Plan for the scheme discusses how opportunities to reuse materials on site have been

Legislation / Policy Name	Summary	Demonstration of Compliance
	materials to minimise the requirement for any direct extraction. Site Waste Management Plans (SWMPs) will be required to support development proposals and will include measures to recycle and recover inert construction, demolition and excavation materials for reuse in building works, thereby also reducing transportation costs and carbon emissions.	taken (such as reuse of excavated topsoil to form the topsoil berms used within the drainage strategy). Whilst materials will need to be shipped in from the mainland, it is recommended that the closest suitable supplier be chosen to reduce emissions associated with material transport. Where a supplier can provide multiple materials required to construct the scheme, they should be used.
Isles of Scilly Climate Change Action Plan 2022		
Overview	In response to the Council of the Isles of Scilly in 2019 declaring a Climate Emergency and the goal to achieve zero carbon by 2030, the Action Plan looks at what has been done and what is still needed to reduce emissions.	The design has been optimised to reduce carbon emissions, such as through use of pre-fabricated cabins instead of the need to construct buildings for only temporary use. Whilst the scheme will undeniably produce emissions, efforts have been made to reduce the amount of emissions (particularly associated with waste).
Smart Islands		
The Declaration – 10 action points towards becoming SMART, inclusive and thriving societies	a) Take action to mitigate and adapt to climate change and build resilience at local level. b) Trigger the uptake of smart technologies to ensure the optimal management and use of our resources and infrastructures. c) Move away from fossil fuels by tapping our significant renewables and energy efficiency potential. d) Introduce sustainable island mobility including electric mobility. e) Reduce water scarcity by applying non-conventional and smart water resources management. f) Become zero-waste territories by moving to a circular economy. g) Preserve our distinctive natural and cultural capital. h) Diversify our economies by exploiting the intrinsic characteristics of our islands to create new and innovative jobs locally. i) Strengthen social inclusion, education and citizens' empowerment. j) Encourage the shift towards alternative, yearlong, sustainable and responsible tourism.	The proposed scheme will directly be supporting some of the points within the Smart Islands Declaration, such as the following: ➢ Providing education to workers to reduce water consumption on site and the choice of taps and toilets which feature water efficient measures (such as push top taps and low flush toilets); ➢ Implementation of a Site Waste Management Plan which aims to reduce waste as far as possible and divert as much from landfill as possible. This includes encouraging the reuse of material, such as the reuse of excavated topsoil to create the topsoil berms within the drainage design; ➢ Empowering workers through provision of single sleeper units and toilets to increase privacy and boost morale and wellbeing; ➢ Potential for social value opportunities as part of the wider Capital Delivery Programme, amongst other things.

Appendix C PAS 2080 Carbon Life Cycle Stages


Infrastructure assessment life cycle information
Before use stage
Use stage
End of life stage
Supplementary information beyond the infrastructure life cycle
A0-5
Pre-construction stage (A0)
Product stage (A1-3)
Construction process stage (A4-5)
B1-9
Use stage
C1-4
End of life stage
D
Benefits and loads beyond the system boundary
A-0
A-1
A-2
A-3
A-4
A-5
Preliminary studies, consultations
Raw material supply
Transport
Manufacture
Transport to works site
Construction / installation processes
B-1
B-2
B-3
B-4
B-5
Use
Maintenance
Repair
Replacement
Refurbishment
B-6 Operational energy use
B-7 Operational water use
B-8 Other operaional processes
B-9 Users utilisation of infrastructure
C-1
C-2
C-3
C-4
Deconstruction
Transport
Waste processing for recovery
Disposal
D
GHG emissions potential of:
– Recovery including:
– Reuse
– Recycling
– Benefits and loads of additional infrastructure functions
Capital GHG emissions
Operational GHG emissions
User GHG emissions

Appendix D Carbon Assessment Assumptions and Exclusions

Transport Assumptions

All materials (not including waste materials) have been categorised as having a 65km shipping journey (from Penzance to St Mary's Harbour). The below table covers the transport assumptions made per material regarding travel by road from supplier to Penzance port. The nearest suitable supplier was chosen for the carbon assessment, although this does not guarantee this supplier being chosen.

Appendix D Table – Material Supplier Assumptions

Material	Supplier	Distance
Asphalt	P. Tonkin Surfacing Ltd, Redruth, TR16 4AJ	28.49km
Fill, aggregate and sand and concrete paving slabs	Bradfords, Penzance, TR20 8HX	3.06km
Ready mix concrete	Maen Karne Concrete Products, Hayle, TR27 5BL	16.58km
Kerbs (pre-cast concrete), geotextile, PVC pipe and MDPE pipe	Civils Store Ltd., Redruth, TR15 1SS	29.61km
Steel security gate	SWGD Gates, Helston, TR13 0LW	22.53km
Solar lighting tower	HSS Hire, Redruth, TR15 3SF	25.27km
LED lamps	City Electrical Factors, Penzance, TR20 8AS	3.22km
Timber fencing	West Cornwall Fencing, Penzance, TR18 3GB	1.93km

When calculating business and employee transport, the Bill of Quantities (which also included compound vehicular movements) and the Construction Traffic Management Plan (CTMP) were consulted. The Bill of Quantities listed either the quay (St Mary's harbour) or the beach (Porthloo) as the docking point. The distance from the docking point to site was multiplied by the number of daily movements detailed within the CTMP for a set 3 month period (91 days) for both goods vehicles, and staff (using a minibus).

Material Exclusions

Not all items listed within the Bill of Quantities were able to be captured within the Carbon Tool because the Carbon Tool only accepts certain material categories. Consequently, the following were excluded from the emissions assessment:

- Grass grid / gravel grid.
- Mesh reinforcement sheets.
- Specific terram and polythene geotextile rolls – instead the geotextile option available within the team has been chosen.
- Cesspit.
- Bulk fuel tank.
- Rubber pads.
- Prefabricated site cabins (sleep units, storage cabins, offices, drying room, canteens, recreation room, smoking shelter, meeting room, washroom, Control of Substances Hazardous to Health (COSHH) room, and maintenance spare room).

Other Assumptions and Exclusions

Regarding the calculation of electricity emissions, the kWh data inputted into the carbon tool has been based upon Isles of Scilly domestic electricity consumption (by Middle Layer Super Output Area) for the 2021 period (which is the latest period available). This provided a mean consumption value of 6,473 kWh per meter. This value has been multiplied by four to cover the expected four-year duration of the compound and multiplied by 24 to match the number of buildings proposed which will be using electricity. The only facility not included was

the smoking shelter which is expected to be an outdoor shelter with no lighting. Whilst it is unlikely that each building would have its own electricity meter, this data has been used to provide a worst-case assessment.

For the materials assessment, where the exact material option was not available, a suitable alternative was selected. For instance, the Bill of Quantities stated that one of the pipework would be MDPE. As this was not available in the carbon tool, the similar HDPE pipework was selected instead. Assumptions made about material choice were discussed with the design team.

For the waste data, the same assumptions and exclusions have been applied as the Site Waste Management Plan. Whilst the SWMP should be referred to for further details, a summary of such assumptions and exclusions which are relevant to the carbon assessment are included in the below list:

- For the sharp sand and shingle material (which would be classified under the fill, aggregate and sand item within the carbon tool), it was not confirmed whether this would be able to be re-used or recycled after decommissioning, or if it should be sent to landfill. Therefore, it has not been included in the carbon emission waste calculations.
- For wood fencing / hoarding, it has been assumed that it will be recycled upon decommissioning. This is dependent on the quality / condition of the wood products still being good and not damaged after the four year duration.
- Whilst the SWMP has included types of waste during the construction period, the carbon assessment has only included the waste associated with decommissioning and construction waste associated with packaging. This is because the SWMP and the WRAP template it uses considers waste in a different way than is used within the carbon assessment (which more so focuses on the end point of the material, whether that is landfill or recycling).
- The SWMP does not cover asphalt / tarmac waste separately from mixed construction and demolition waste. As the industry carbon tool used does provided an option to assess bituminous mixtures waste, this option was chosen for the waste associated with asphalt upon decommissioning.
- Some conversion calculations have been automatically completed by the WRAP methodology used within the SWMP. For the carbon assessment, any necessary conversion calculations have been carried out using the material densities as assigned within the carbon tool. Therefore, the conversion results may differ for certain categories depending on the material and its density.

Appendix E Carbon Assessment Results – Further Breakdown

Whilst the general summary of the carbon results has been reported on within Section 4.1 of the Sustainability Statement, a further breakdown of the emissions associated with each assessed material and waste type has been included in the table below (alongside the results already reported in Section 4.1).

Appendix E Table – Further Breakdown of Carbon Emissions associated with the Proposed Scheme

Carbon Life Cycle Element	Category	Emissions (tCO_2e)		Total Emissions (tCO_2e)
		Material Emissions	Transport of Material Emissions	
Before use stage - materials	Bulk materials: Asphalt	1.383	1.771	3.154
	Bulk materials: Fill, aggregate and sand	5.438	6.168	11.606
	Bulk materials: Ready mix concrete	5.805	2.337	8.142
	Earthworks: Site won soil / muck shift	0	0	0
	Earthworks: Geotextiles	3.04	0.088	3.128
	Fencing: Timber rail fence (all types, includes posts)	1.446	0.031	1.477
	Fencing: Steel / wire / chains fence (includes posts)	0.105	0.002	0.107
	Drainage: Plastic pipework (PVC)	0.549	0.012	0.561
	Drainage: Plastic pipework (HDPE)	2.976	0.087	3.063
	Road pavements: Pre-cast concrete 125 x 255m	0.416	0.232	0.648
	Street furniture: LED light	3.042	0.009	3.051
	Civil structures: Pre-cast concrete (general)	20.326	1.396	21.722
				56.659 (total for materials)
Use stage – water usage	Water – mains	1.306		121.455 (total for energy usage)
Use stage – electricity usage	Site offices, site vehicles and plant energy - electricity	120.149		
Use stage – employee transport	Private vehicle	0.07		0.664 (total for business and employee transport)
Use stage – goods vehicle transport	Goods vehicles – laden Goods vehicles - unladen	0.595		
Before use stage – packaging waste during construction	Mixed construction & demolition waste – to landfill	0.596		0.66 (total for construction waste)
	Mixed construction & demolition waste - recycled	0.064		
End-of-life stage – waste associated with decommissioning	Mixed construction & demolition waste – to landfill	0.079		1.248 (total for decommissioning waste)
	Concrete, brick, tiles and ceramics – to landfill	0.225		
	Bituminous mixtures – to landfill	0.031		
	Aggregate and soil exported off-site – recycled	0.679		
	Wood / timber - recycled	0.234		