

TORBAY COUNCIL

Part 2 Specification

Contract Reference

TPL1221

Contract Title

**Torbay Leisure Centre - Works Packages
for Delivery of Public Sector
Decarbonisation Scheme (PSDS)**

TORBAY LEISURE CENTRE - WORKS PACKAGES FOR DELIVERY OF PUBLIC SECTOR DECARBONISATION SCHEME (PSDS)

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1.0 Business Overview

- 1.1 Leisure Energy have been working with Torbay Council and the long-term lease holder of the site for over 12 months to improve the efficiency of the Torbay Leisure Centre which is operated by Parkwood Leisure on a long term management contract. Torbay Council are committed to reducing their carbon footprint and in June 2019 declared a Climate Emergency and, in pledging to make the authority carbon neutral in the next 10 years, also called on the UK Government to provide the powers and resources to make the target possible. The Torbay plan has been subsumed into the county wide Devon Carbon Plan.
- 1.2 In light of the new Public Sector Decarbonisation Scheme, Leisure Energy were asked to facilitate an immediate review of the leisure centre to accelerate potential carbon reductions at Torbay Leisure Centre, which is one of the Council's highest Carbon Emitters.

2 Brief

- 2.0 Torbay Leisure Centre was built in 1976 with an extension built in 1984. The heating system is commensurate with the age of the building and beyond its economic life and is in need of full replacement. On the ground floor the building is based around a 25 m, 6 lane competition pool together with Learner pool and associated "wet change areas". There are also dry change areas for the sports hall, gym and studios. The remainder of the ground floor is toilets, staff offices and the reception/café area. The boiler rooms, swimming pool filtration plantroom are also on this ground floor.
- 2.1 The centre was closed in March 2020 due to Covid-19, reopening 25th July 2020; it closed again for a second lock down in November 2020, reopened in December 2020 and closed again in January 2021. In April 2021 the site again reopened and is expected to remain open long term.

2.2 Existing Equipment

- 2.2.1 The centre is served by 2 No. plantrooms split on Wet side and Dry side circuits. The Wet side is heated with 10 No. Hamworthy 94 kW (assumed) medium temperature boilers, which supply domestic hot water, space heating (via AHU's) and the centre's pool. It was noted that boilers 5,6,9 and 10 were not running at time of site survey and centre management advised that the boilers that did run were very temperamental. Dry side boiler room is heated with 4 No. Hamworthy 94 kW medium temperature boilers. All four boilers were running at time of site survey. Back up boilers were isolated and not functioning.
- 2.2.2 The Pool plate heat exchanger was only in place on tank 01 and had been removed from pool tank 02 also the exchanger showed signs of hard water damage.
- 2.2.3 The three main Air Handling Units (AHU) are also commensurate with the age of the building and are beyond economical repair.
- 2.2.4 Cooling is provided by various small split Air Conditioning units. Pumps and fans are generally of IE1 or higher with Variable Speed Drives (VSDs). Pool circulation pumps

- and heating pumps are of similar age and quality as in the AHUs. However, a new control system and VSD were fitted in circa 2018 which reaped large energy savings.
- 2.2.5 A partial Trend BMS system is fitted which gives access to the site to view and modify various settings and time schedules for the heating and main pool AHU system.

2.3 PSDS Project Outline

- 2.3.1 To comply with the PSDS we have selected Daikin Air Source Heat Pumps as the most favourable decarbonisation technology for category 1. Currently the gas-based system is operating at 80°C flow and 60°C return. The new ASHP system would operate at reduced optimised flow temperature of circa 45°C and 38°C return. This dramatically increases the coefficient of performance of the system. This lower flow temperature also means that the existing heat transfer surfaces will need to be upgraded. I.e. upgrades will be required to the heating coils in the Air Handling Units and the plate heat exchangers for the swimming pool heating circuits.

2.4 Scope

- 2.4.1 Supply and fit 2x Daikin 382.5 kW Air Source Heat Pumps
- 2.4.2 Supply and fit 476 rooftop solar PV panels.
- 2.4.3 Upgrade BEMS to incorporate smart controls for the AHUs ASHP, Battery system, PV inverters, and other high energy use equipment to include but not limited to; pool pumps, heating circulation pumps.
- 2.4.4 Supply and fit 100 kW, 205 kWh battery storage system to support PV.
- 2.4.5 Supply and fit gas, heat and electricity meters to all installed equipment
- 2.4.6 Upgrade electrical infrastructure to support ASHP and for the PV to interface with the rest of the building.
- 2.4.7 Upgrade 287 light fittings with supply and fit of 295 new LED replacements.

2.5 Work packages/lots

- 2.5.1 The project scope will be split across 2 lots/work packages. Applicants can tender for any number or combination of lots/work packages.
- 2.5.2 Work package 1: Scope elements 2.4.1-2.4.6 inclusive
- 2.5.3 Work package 2: Scope element 2.4.7

3 Specification and works packages

3.0 General conditions

3.0.1 EXTENT OF CONTRACT

- 3.0.1.1 The contract shall include all those areas as detailed in the contract documents and as shown on the contract drawings.

3.0.2 EXTENT OF SITE

- 3.0.2.1 The site shall extend to those portions of the property required to give access to the works. The Contractor shall be responsible for all costs incurred through the use of or damage done to, land outside the site limits imposed upon him.
- 3.0.2.2 The Contractor shall at all times provide sufficient and adequate guards, lamps, fencing, covers and anything necessary for the protection of the public, property, premises and structures in the vicinity of the site to the satisfaction of the Project Lead / Principal Designer. Any approval given by the Project Lead / Principal Designer to any measures undertaken by the Contractor under the terms of this Clause shall not relieve the Contractor of any liability.
- 3.0.2.3 The extent of the site available to the Contractor throughout the Contract period, for the purpose of storage of materials, plant, etc., shall be agreed with the Principal Designer at the time of tendering.
- 3.0.2.4 The Contractor shall be deemed to have examined this document and visited the site to have acquainted himself with the local conditions, nature of the ground, access to site, working and storage space and execution of the works generally. No claims for additional work will be admitted for errors or omissions arising from the Contractors failure to satisfy himself on these matters.
- 3.0.2.5 Full consideration should be given to the Employers continued use of the premises throughout the contract period. Due allowance should be made for protection and programming of works accordingly.

3.0.3 WORKS WITH OTHER TRADES

- 3.0.3.1 Works will be undertaken on site in conjunction with other works as part of other planned refurbishment works, including but not limited to the mechanical and/or electrical energy saving works. The Contractor would be expected to work in a professional manner with other contractors on site and minimise any disruption caused to those projects running concurrently with this scheme.

3.0.4 QUERIES

- 3.0.4.1 Any technical queries with respect to the Electrical Services Specification and accompanying drawings should be addressed through the Messaging facility within the opportunity on www.supplyingthesouthwest.org.uk at the earliest opportunity.

3.0.5 DURATION OF WORKS

- 3.0.5.1 When pricing this document, the contract time frame should be considered therefore a site visit is expected.
- 3.0.5.2 The contract period is to be confirmed and includes weekends and bank holidays.

3.0.6 TENDER SUBMISSION

- 3.0.6.1 Tenders should be submitted with a fully costed breakdown/summary in accordance with the priced work schedule.

3.0.7 PRICED WORK SCHEDULE

- 3.0.7.1 The Contractor shall, prior to entering into the Contract, submit to the Project Lead a fully priced quantified priced work schedule inclusive of all material and labour rates and indicating all associated overheads and profits.
- 3.0.7.2 The priced work schedule shall show in detail the quantities, prices and extensions used in the calculation of the Tender Prices and the Contractor shall accept responsibility for the accuracy of any quantities and extensions contained therein and the priced work schedule shall balance with each item of the Priced Work Schedule submitted.
- 3.0.7.3 The net rates in the priced work schedule shall be used for measurement and valuation of any alteration, addition to or omission from the work authorised by the Contract Administrator.
- 3.0.7.4 Where it is not practical to apply the net rates in the manner aforementioned, such alterations, additions and omissions as ordered shall be valued at rates or prices as may be agreed with the Contract Administrator.

3.0.8 PERIOD OF VALIDITY

- 3.0.8.1 Tenders must remain open for consideration (unless previously withdrawn) for not less than 30 days from the date fixed for the submission or lodgement of tenders.
- 3.0.8.2 Information on the date for possession/ commencement is to be determined by the client.

3.0.9 INSURANCE

- 3.0.9.1 Before starting work on site submit documentary evidence and/or policies and receipts for the insurances required by the Conditions of Contract.

3.0.10 INSURANCE CLAIMS

- 3.0.10.1 If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, forthwith give notice in writing to the Employer, the Project Lead and the Insurers. Indemnify the Employer against any loss that may be caused by failure to give such notice.

3.0.11 COMMENCEMENT OF WORK

- 3.0.11.1 Inform the Project Lead at least 10 working days before the proposed date for commencement of work on site.

3.0.12 SITE VISIT

- 3.0.12.1 The Contractor shall visit the site before tendering to ascertain the exact nature and deposition of the works and in tendering will have deemed to have done so.
- 3.0.12.2 Workmanship and materials are described under traditional trade sections and are deemed to apply to all relevant items of work in all sections of the Specification.
- 3.0.12.3 Workmanship in all trades is to comply with BS 8000 and additionally to any other specified requirements

3.0.13 BUILDING OCCUPATION

- 3.0.13.1 The building will be operational during the contract period. When pricing this document the contract time frame should be considered therefore a site visit is strongly recommended.

3.0.13.2 The Contractor shall allow for full co-ordination with the building operators and all its differing user groups to make arrangements for access to these areas and to carry out work to the services installation in such a manner as to minimise disruption to normal operation. A detailed program of works will require to be provided and agreed before any works can commence. The pricing shall allow for works to be completed in sections not as one complete item of work.

3.0.14 CONTRACTORS SUPERVISION

3.0.14.1 The Contractor shall give or provide all necessary supervision during the execution of the Works. The Contractor, or a competent and authorised agent or representative thereof, is to be constantly employed on the Works and shall give his whole time to supervision of the same. Such authorised agent or representative shall receive, on behalf of the Contractor, directions and instructions from the Project Lead.

3.0.15 DELIVERY AND OFF-LOADING MATERIALS

3.0.15.1 The Contractor shall off-load and take delivery of all materials to be used by him.

3.0.16 PLANT, TOOLS, EQUIPMENT ETC

3.0.16.1 The Contractor shall include in his tender for the supply of all plant, tools, tackle, scaffolding, vehicles, sheds, machinery and all other such items necessary for executing the work covered in this Contract, in a safe and proper manner.

3.0.16.2 The Contractor shall include in his tender for all costs incurred by the provision of labour and supervision of the Works and shall at all times provide sufficient and safe means of access to the works during progress for inspection by the Project Lead.

3.0.16.3 Areas used for plant and material storage shall be protected as necessary and the area properly cleaned upon completion. All areas used shall be properly reinstated and cleaned to the Project Lead / Principal Designer's satisfaction.

3.0.17 ADVERSE WEATHER

3.0.17.1 The Contractor shall suspend all operations during weather, which, in the opinion of the Project Lead, will be detrimental to the work. Any work affected by weather shall be dealt with as directed by the Project Lead, whose decision on this matter shall be final and binding upon the Contractor.

3.0.18 SITE TIDINESS

3.0.18.1 The Contractor shall maintain the site free of all unwanted materials and debris arising from the Works. On completion, the Contractor shall take down and clear away all plant and temporary work and make good, and shall ensure that any damage to paving, gardens, fences etc., has been made good to the satisfaction of the Principal Designer.

3.0.18.2 The Contractor shall ensure that no dust or debris enters areas of the property not subject to refurbishment works and shall erect screens or barriers as necessary.

3.0.19 RESPONSIBILITIES UNDER THE CONTRACT

- 3.0.19.1 Where the approval of the Project Lead is required under the Contract Document, such approval shall not relieve the Contractor of any of his duties under the contract.
- 3.0.19.2 The Contractor shall be responsible for giving notice to the building control officer of the commencement and completion of various stages of the works and keep relevant inspection cards in his possession until they are so required.

3.0.20 SAFETY AND AVOIDANCE OF NUISANCE

- 3.0.20.1 The Contractor shall ensure that all his workmen, and other personnel engaged upon the Works, carry out their work in a safe, responsible and proper manner. The Contractor shall protect all persons from possible injury by the erection of screens, hoardings and barriers. The building will be protected by similar means against the elements and trespass or entry by unauthorised persons.
- 3.0.20.2 The provisions of the Health and Safety at Work Act and all other relevant legislation shall be observed at all times.
- 3.0.20.3 All work shall be performed in such a manner as to ensure the safety of users of the premises and adjoining property and so as to cause as little inconvenience as possible to the public and adjoining owners and the contractor's tender shall include for all necessary precautions to that end.
- 3.0.20.4 All rubbish and debris shall be sprinkled with water to prevent undue dust arising and any necessary protection must be provided as directed by the Principal Designer.
- 3.0.20.5 Under no circumstances shall the contractor light fires on the Owner's property to dispose of unwanted materials and debris.
- 3.0.20.6 Working hours will be Monday to Friday, 8.00am – 5.00pm. Extensions to working hours must be discussed and approved by The Project Lead. Contractors must ensure they have suitable competent and qualified employees to be able to undertake the works in the allocated period in the programme.

3.0.21 DISPOSAL OF WASTE

- 3.0.21.1 The Contractor shall dispose of all stripped out equipment and components. The Contractor shall comply with all requirements of The Waste (England and Wales) Regulations 2015 and associated guidance.
- 3.0.21.2 The Contractor shall ensure that this equipment is disposed of at a suitable, registered disposal site in accordance with EC Directive on the disposal of Waste Electrical and Electronic Equipment (WEEE).
- 3.0.21.3 The Contractor shall provide, as appropriate, a 'controlled transfer note' for each load removed from site together with a top copy of the Local Authority Certificate of registration if requested.
- 3.0.21.4 The Contractor shall allow for all associated costs in this regard.

3.0.22 OFFERING REDUNDANT ITEMS TO THE EMPLOYER

- 3.0.22.1 The Contractor shall (prior to disposal) offer the Employer all redundant equipment and materials for reuse / spares. The Contractor shall remove from site and safely dispose of all redundant items that the Employer does not wish to retain.

3.0.23 DESIGN

- 3.0.23.1 The Contractor shall be entirely responsible for the method of work, specification of specialist material and all other such items not expressly specified in this document including temporary works design, where required.

3.0.24 RELATED DOCUMENTS

- 3.0.24.1 The Contractor shall refer to all drawings and details issued with the tender documents. This shall include any specialist drawings, priced work schedules and details.
- 3.0.24.2 The site drawings provided are intended to assist the contractor for his design only. Any drawings provided are intended to be indicative only by illustrating the design philosophy and preferred services solutions, not the completed design. It is the Contractors responsibility to ensure that the electrical services indicated or implied comply fully with these requirements and that they co-ordinate with all other services and the building structure.
- 3.0.24.3 The responsibility for the complete design rests entirely with the Contractor. Should a conflict occur between any section of the requirements and/or the drawings, it shall be the responsibility of the Contractor to contact the Project Lead for a decision. For any item not raised at the time of tender, then the Contractor shall be deemed to have included the option with the maximum cost implication.
- 3.0.24.4 Tenders shall be submitted on the forms provided. The Tenderer shall complete the appendices attached to the rear of this Specification as part of the tender submission.
- 3.0.24.5 Tenders shall comply with the requirements of this Specification. Where the Tenderer wishes to submit an alternative for consideration, it shall be submitted in accordance with the instructions in Part 1 Information.

3.0.25 SITE MEASUREMENT & GENERAL WORKS

- 3.0.25.1 All dimensions given are approximate and a guide for estimating purposes only. Contractors are deemed to have visited the site prior to tendering to establish access, storage, temporary protection and scaffolding requirements.
- 3.0.25.2 Any dimensions given in item descriptions that relate to existing works are in all cases to be deemed approximate.
- 3.0.25.3 Unless described otherwise all materials arising from demolitions and alterations are to become the property of the Contractor, and prices must include for removal and subsequent disposal.
- 3.0.25.4 Any credit value of such materials must be allowed for by the Contractor within his price, whether specifically mentioned or not.
- 3.0.25.5 Any other use of salvaged materials will not be permitted except by the specific permission of the Project Lead, and such permission is not to be assumed at tender stage.
- 3.0.25.6 Materials described as "set aside" are to remain the property of the employer and prices are to include for carefully taking out, moving to different location, sorting ready for re-fixing and temporarily or permanently storing where directed.

- 3.0.25.7 The prices for cutting openings in walls are to allow for temporary shoring, needling, strutting, and carting away rubble.
- 3.0.25.8 All prices are to allow for making good to adjoining work where disturbed whether specifically mentioned or not.
- 3.0.25.9 The Contractor must allow for fully protecting all existing work, and all surfaces.
- 3.0.25.10 Access and egress to site area must be protected at all times.
- 3.0.25.11 Make every effort keep dust to a minimum during the works, areas should be left clean and swept at the end of each working period.

3.0.26 WATER FOR THE WORKS

- 3.0.26.1 The Contractor shall include in his tender for all temporary connections and pipework between the nearest source of supply and his point of requirement. He shall also make provision and include for any storage facilities.

3.0.27 POWER FOR THE WORKS

- 3.0.27.1 The Contractor shall include in his tender for all necessary plant for the generation of power for the Works where power is unavailable on site.

3.0.28 SERVICES

- 3.0.28.1 Before any work is commenced on site the Contractor shall satisfy himself as to the position of all service pipes, cables, mains, sewers, drains, wires, overhead lines, poles etc., and shall provide protection/support to them to the satisfaction of the Principal Designer. Where necessary exploratory works or hand digging shall be carried out by the contractor to position the service runs. Any drawings supplied are indicative only and it is the responsibility of the contractor to satisfy himself as to the nature of all the services on site.
- 3.0.28.2 The Contractor shall at all times take adequate measures to protect all services in and adjacent to the site including necessary protection of his employees from electrical cables, gas mains etc. and temporary support of services. Services damaged by the contractor during the course of the works shall be repaired/replaced at no cost to the Employer and any damage shall be reported to the relevant authority where necessary.
- 3.0.28.3 The contractor shall include in his tender for testing all services, both prior to and on completion of the works, where such services are exposed or disturbed as a result of the contractor's works.

3.0.29 CO-ORDINATION OF SERVICES

- 3.0.29.1 The Contractor shall carry out the detailed co-ordination of existing services installations with each other as required and within the structure and layout of the building. Particular attention shall be paid to services within voids. Co-ordination shall be carried out as an integral part of the process of preparing working / installation drawings.
- 3.0.29.2 The Contractor shall allow for all costs associated with co-ordinating the services installations and for all costs arising from any failure to carry out this exercise prior to works commencing on site.

3.0.30 DAYWORK

3.0.30.1 Where authorised, Day work items shall be in accordance with the Definition of Prime Cost of Day work as issued by the Royal Institution of Chartered Surveyors unless superseded by the rates and prices submitted by the contractor on any attached Day work Rates in this contract document.

3.0.30.2 Day work sheets shall be presented to the Project Lead during the contract but will not constitute an automatic record for payment.

3.0.31 TEMPORARY WORKS

3.0.31.1 The Contractor shall be entirely responsible for the design and provision of all temporary works necessary for the proper execution of the works. Any damage or injury caused through inadequacy of same shall be the responsibility of and made good at the Contractors own expense to the satisfaction of the Project Lead.

3.0.32 DEFINITION AND INTERPRETATIONS

3.0.32.1 Approval - Means the approval in writing of the Principal Designer unless specified otherwise.

3.0.32.2 Manufacturers - Are those current at the date of tendering and mean the product references specified in the manufacturer's literature at that time.

3.0.32.3 Or Equivalent - Means that products of different manufacture may be approved/submitted if prior approval has been obtained, but the Principal Designer reserves the right to insist on the named product(s). The rates or prices will need to be based on the product(s) specified, unless agreed otherwise.

3.0.32.4 Proprietary - The phrase 'or equivalent' is to be deemed included whenever

3.0.32.5 Names - products are specified by a proprietary name.

3.0.32.6 Fix Only - Means all labours in unloading, handling, storing, and fixing in position, including use of all plant.

3.0.32.7 Supply and - unless stated otherwise, all items given in the schedule of work

3.0.32.8 Fix - and/or drawings are to be supplied and fixed complete.

3.0.32.9 Remove - Means disconnect, dismantle as necessary, and remove the stated element, work or component and all associated accessories, fastenings, supports, linings, and bedding materials, and dispose of unwanted materials

3.0.32.10 Keep for - Means prevent damage during removal, clean off bedding and Re-use jointing materials, stack neatly, adequately protect and store until required by the employer, or for use in the work as instructed.

3.0.32.11 Replace - Means remove the stated existing components, features and finishes. Provide and fit new components, features or finishes, which unless otherwise specified, must match those removed. Make good as necessary.

3.0.32.12 Repair - Means carry out local remedial work to components, features, finishes as found in the existing building, re-secure as necessary and leave in a sound and neat condition. Excluded from this definition is replacement of components and redecoration.

3.0.32.13 Make Good - Means carry out local remedial work to components, features, finishes as found in the existing building, re-secure as necessary and leave in a sound and neat condition. Excluded from this definition is replacement of components and redecoration.

3.0.32.14 Ease - Means make minor adjustments to moving parts of the stated component to achieve good fit in both open and closed positions and ensure free movement in relation to fixed surrounds. Make good as necessary.

3.0.32.15 To Match - Means use products, materials, and methods to match closely all Existing visual characteristics and features of the existing work, with joints between existing and new work as inconspicuous as possible, all to approved appearance.

3.0.33 ASBESTOS

3.0.33.1 Where it is reasonable to suspect the presence of asbestos, no work will be completed without the necessary information being provided by the client. All work will be completed in accordance with the results and requirements of the client's asbestos refurbishment survey report.

3.0.33.2 During work activities if any material is discovered which is suspected of containing asbestos, work will cease in that area immediately. The material must not be disturbed and the area will be isolated with suitable barriers and signage to prevent unauthorised access.

3.0.33.3 The client and / or Principal Contractor will be informed immediately who will make the necessary arrangements to have the material tested, and if necessary removed. No asbestos or asbestos containing material will be removed by Personnel at any time.

3.0.33.4 Refer to asbestos management plan, including site specific notes.

3.0.34 COMPLIANCE WITH BUILDING REGULATIONS

3.0.34.1 The whole works shall be undertaken in accordance with the latest edition of the Building Regulations.

3.0.35 PERMITS TO WORK

3.0.35.1 Permits to works are required for works at all properties and no works shall be undertaken on site without detailed Risk Assessments, Method Statements and Construction Phase Plan in place for each element of the works.

3.1 Work packages specifications

3.1.1 Lot/Work Package 1

3.1.1.1 Supply and fit 2x Daikin 382.5 Kw Air Source Heat Pumps

3.1.1.1.1 *Safely isolate and remove the existing boilers in both plantrooms.*

3.1.1.1.2 *Form new plinth to site the new ASHP units.*

3.1.1.1.3 *Apply for and obtain relevant approvals for installation.*

3.1.1.1.4 *Deliver to site and install 2 No. 382.5 kW Daikin ASHP (heating only) and associated 4 no. new Grundfos circulation pumps with variable speed drives, valves, pipework, control panel etc.*

3.1.1.1.5 *Supply and fit new fencing to screen the new ASHP.*

3.1.1.1.6 *Design and build new electrical switch panel.*

3.1.1.1.7 *Design and build new control panel.*

3.1.1.1.8 *Install new power supplies to the 2 No. new ASHP from main MCCB.*

3.1.1.1.9 *Supply and install all new containment for the new power supplies.*

- 3.1.1.1.10 Install new distribution pipework from external ASHP location to building distribution pipework. Isolation/ connection points to existing circuits be agreed and located within existing plantroom areas. All new pipework to be lagged in phenolic and foil faced finish internally with Ali-clad finish on external pipework.
- 3.1.1.1.11 Supply and install new LTHW coil to existing pool AHU.
- 3.1.1.1.12 Supply 3 No. new AHUs, associated ductwork, electrical supplies, new air socks and associated builders works.
- 3.1.1.1.13 New ASHP for high temperature hot water generation for DHW system to be installed to include new 300L storage cylinders.
- 3.1.1.1.14 Supply and fit 2 No. new LTHW plate heat exchangers to interface with existing pool and spa. Located within existing pool plantroom.
- 3.1.1.1.15 Supply and install 1 No. 1000l thermal storage cylinder.
- 3.1.1.1.16 Supply and install all new valves (isolation and automatic), AAV's etc. New pressurisation units to be installed in existing plantroom area.
- 3.1.1.1.17 Supply Access and hire equipment to complete the above works.
- 3.1.1.1.18 Pressure test all new pipework and flush all new circuits prior to commissioning.
- 3.1.1.1.19 Fully commission the new installation prior to handover to the client.
- 3.1.1.1.20 Supply all O&M information post completion of the project.
- 3.1.1.1.21 Back to back warranty with manufacturer for 3 years on ASHP
- 3.1.1.1.22 Provide Grundfos pumps 2 year product warranty
- 3.1.1.1.23 Full training and engagement with site teams regarding the operation of low temperature systems to be provided as well as ongoing support for a period of 12 months.
- 3.1.1.1.24 Provide 5 years maintenance programme.
- 3.1.1.2 Supply and fit 476 rooftop solar PV panels.**
- 3.1.1.2.1 Supply and fit all support frames and bracketry.
- 3.1.1.2.2 Apply for and obtain relevant permissions to proceed.
- 3.1.1.2.3 Design to consider future access for ongoing maintenance, including cleaning
- 3.1.1.2.4 Supply and fit 2 no. 82.8 kW DC inverters.
- 3.1.1.2.5 Supply and fit 476 no. 340-watt DC solar PV panels
- 3.1.1.2.6 Supply and fit Panel optimisers.
- 3.1.1.2.7 Supply and fit Electrical installation including all cabling, containment and isolators.
- 3.1.1.2.8 Undertake DNO Application.
- 3.1.1.2.9 Provide back to back warranty with manufacturer, solar panels product warranty 12 years and 25 year linear output warranty
- 3.1.1.2.10 Provide Solar inverter warranty 12 year product
- 3.1.1.2.11 Provide valid roof warranty on affected roof following solar PV installation.
- 3.1.1.3 BEMS upgrade**
- 3.1.1.3.1 Extend the existing system to incorporate smart controls for the AHUs ASHP, Battery system, PV inverters, and other high energy use equipment to include but not limited to, pool pumps, heating circulation pumps.

- 3.1.1.3.2 *Head end graphics and remote accessibility to be provided for the BMS. Separate networked internet connections will be provided and ongoing costs for period of 5 years to be included.*
- 3.1.1.3.3 *Full ongoing support and revisions to BMS strategy to be provided for 12 months. This includes any follow up site visits. This is in addition to 5-year maintenance package.*
- 3.1.1.3.4 *Provide full training.*
- 3.1.1.3.5 *Provide back-to-back warranty with manufacturer on all controllers and sensors replaced for 3 years.*
- 3.1.1.3.6 *Provide 5 years BMS maintenance.*
- 3.1.1.4 Battery storage system**
- 3.1.1.4.1 *Supply and fit 100 kW, 205 kWh battery storage system to support PV.*
- 3.1.1.4.2 *Provide back-to-back warranty with the manufacturer for 5 years*
- 3.1.1.4.3 *Install HH metering for battery equipment.*
- 3.1.1.5 Metering**
- 3.1.1.5.1 *Supply and fit gas, heat and electricity meters to the installed equipment. These meters to be remotely connected to client's preferred online monitoring portal and costs for metering included for 5 years.*
- 3.1.1.5.2 *Provide back-to-back warranty with the manufacture.*
- 3.1.1.5.3 *Install appropriate and accurate meters to measure the energy performance factor (EPF) of the air source heat pump.*
- 3.1.1.5.4 *Install sub metering on significant energy users, to include AHUs and pumps.*
- 3.1.1.6 Upgrade electrical infrastructure.**
- 3.1.1.6.1 *Supply and fit necessary components to upgrade electrical infrastructure to support ASHP and for the PV to interface with the rest of the building.*

3.1.2 Lot/Work Package 2

3.1.2.1 Lighting upgrade

- 3.1.2.1.1 *Supply and fit 295 new LED replacements to replace 287 existing fittings. The existing lights are mainly fluorescent battens or compact fluorescents. The swimming pool, Sports Hall and gym areas currently have metal Halide fittings. Please see appendix 8 for a list of all fittings and associated calculation for savings.*
- 3.1.2.1.2 *Provide Full lighting design and LUX levels guaranteed to meet CIBSE, Sports England and HSE required performance standards for activity to take place in each zone.*
- 3.1.2.1.3 *Replace all Swimming Pool lighting to ensure consistency Warranties on light fittings with manufacturer, as follows by lighting type. These to be valid for the environment in which they are installed.*
 - 3.1.2.1.3.1 *Standard batten and 600 x 600 panels – 7 years with 2 years on site installation*
 - 3.1.2.1.3.2 *Round Panels and Bulkheads – 5 years with 2 years on sit*

- 3.1.2.1.3.3 *External – 5 years with 1 year on site*
- 3.1.2.1.3.4 *Spots (lamps only) – 3 years*
- 3.1.2.1.3.5 *Sports hall – 10 years with 1 year on site*
- 3.1.2.1.3.6 *Pool – 5 years with 1 year on site*
- 3.1.2.1.3.7 *Pool/sports hall Control units – 5 years with 1 year on site*
- 3.1.2.1.3.8 *Sensors – 3 years*
- 3.1.2.1.3.9 *EM Lighting – 3 years*

3.2 Contract requirements

3.2.1 INSTALLATION OF ASHP SYSTEM

- 3.2.1.1 The Contractor shall design, supply install, test and commission a complete Air Source Heat Pump solution for Torbay Leisure Centre, inclusive of upgrades to electrical system, provision of metering and BEMS system to compliment. The solution shall meet all the requirements of current CIBSE guidelines for this type of building. The capacities of the Heat Pumps will be calculated to satisfy the building heating demand, in line with the current CIBSE guidance.
- 3.2.1.2 The Contractor shall be responsible for ensuring that the physical space required by the proposed Heat Pumps will fit within the sites size constraints both for delivery and placement.
- 3.2.1.3 A design consideration shall be given to the locality of the Heat Pump installation in regard to the close proximity to the coast and the potential issues that could arise due to salt content within the atmosphere creating issues with standard Heat Pump coil construction thus the correct materials specification to ensure longevity of the Heat Pumps and their associated coils is essential.
- 3.2.1.4 The ASHP should utilize R32 refrigerant or a suitable refrigerant with a GWP of less than R32. The SCOP of the ASHP should be a minimum of 4.0 with an actual minimum COP of 3.0 measured as an average for the year.
- 3.2.1.5 The Contractor shall liaise with the DNO about the required upgrades for any import power requirements. The contractor shall work with the DNO to ensure the most cost-effective solution is sought with the DNO to conclude the installation within the proposed timescale.

3.2.2 SOLAR PV SYSTEM

- 3.2.2.1 The Contractor shall allow for the design, supply, installation, testing and commissioning of the Complete Solar PV Solution. The proposed solution should meet the demands for the operations of the building and cannot exceed the maximum current of the incoming supply. The contractor shall include for all the access required to facilitate the installation and ensure that the roof structure is uncompromised, ensuring any existing warranties are retained. The Contractor shall allow for the inverters to be sized and installed as required for the complete system, along with all the relevant paperwork to be completed and signed. The Contractor shall allow for the discussions and paperwork as required with DNO to ensure the

- proposed solution can be accepted on the network. The Contractor shall install separate dedicated galvanized trunking to house the DC cables from the invertors to the panels which shall be regularly labelled within each new area and or change of direction. The location and position of the inverter shall be agreed with building control.
- 3.2.2.2** The complete installation shall be signed off by an MCS accredited solar PV provider.
- 3.2.2.3** The Solar PV System installation design needs to take into account that the site will use all power generated, export provision for power generation for this site will not be applied for.
- 3.2.2.4** The Contractor shall apply for G99 application.
- 3.2.2.5** The Contractor shall liaise with the DNO about the required upgrades for the import and export, import for the air source and export due to the solar. The contractor shall work with the DNO to ensure the most cost-effective solution is sought with the DNO to conclude the installation within the proposed timescale. The information / upgrades shall then be fed back so the upgrade of the meter can be programmed in with the works
- 3.2.2.6** The installation shall meet the requirement of BS62446, and BS476, along with all other relevant British Standards.
- 3.2.2.7** The electrical installation is to be carried out in accordance with BS7671 and the latest Edition IET Wiring Regulations. All electrical works shall be undertaken by an NICEIC Registered Electrical Contractor.
- 3.2.2.8** The Solar PV array should be located on the building's roof space facing a southerly location. A position needs to be allocated on the roof for the array. Each Solar PV panel is to have a 12-year manufacturer's warranty with 25 year linear power output warranty and generate a minimum of 340W DC
- 3.2.2.9** The Contractor shall engage the professional services of a Structural Engineer. This person shall hold MI Struct E status and be deemed and defined in part A of the Building Regulations as CPS – Competent Persons Scheme
- 3.2.2.10** In all instances the installation of the Solar Panels must comply with Building Regulations Part A Structural Safety.
- 3.2.2.11** Prior to any installation a fully detailed methodology and supporting drawing submission will be made to both the Principal Designer and LABC for the regulation compliance and approval.
- 3.2.2.12** This will be fully supported with wind load calculations, Roof loading increase and suitability of selected product, for flat roof installation of ballast and housing trays or alternatively concrete precast blocks.
- 3.2.2.13** All points of penetration through the roof substrate and the instance of existing roof covering warranties, evidenced supporting documentation from the manufacturers not to invalidate current warranties of systems.
- 3.2.2.14** Pitched roofs, wind load calculation and suitable design of roof panel anchors shall only be fitted to roof spars, not roof battens.

3.2.2.15 In all instances an application will need to be submitted by the successful Principal Contractor for a planning application due to the change of materials.

3.2.3 STRIP OUT OF EXISTING SYSTEMS

3.2.3.1 The Contractor shall allow for the strip out and removal of the existing gas boilers and their associated gas pipe controls and roof penetrations and flues, and make good / adapt the existing retained equipment as required to ensure all service that where fed from the existing gas pipe work as intended.

3.2.4 ACCESS AND STRUCTURAL UPGRADES

3.2.4.1 The Contractor shall engage with a structural engineer to ensure the proposed solution can be accommodated by the existing structure and that the building can accommodate the applied loads from the proposed new equipment.

3.2.5 ELECTRICAL & CONTROL REQUIREMENTS

3.2.5.1 The Contractor shall engage with an Electrical Engineer to ensure the proposed electric supply for the proposed air source heat pump solution can be accommodated within the existing electrical infrastructure / upgraded as required to supply the proposed air source heat pump solution including the required controls.

3.2.5.2 The Contractor shall engage a control specialist to provide a full control solution for the proposed air source heat pump installation, including any upgrades to localised heating control within the building.

3.2.6 BEMS System

3.2.6.1 The Contractor shall design, supply, install, test and commission a complete BEMS energy management system that shall link into the existing building energy management system already operated by Torbay LC.

3.2.7 FIRE STOPPING

3.2.7.1 The Contractor shall allow for all the fire stopping that is to be penetrated as part of the works to be repaired / replaced to ensure it compliance with building regulations.

3.2.8 MODIFICATION AND MAKING GOOD OF THE GAS PIPEWORK

3.2.8.1 The Contractor shall allow for adapted / alternating the exiting gas pipe work following the removal of the redundant gas boilers.

3.2.9 MODIFICATION AND MAKING TO ROOF STRUCTURE

3.2.9.1 The Contractor shall allow for repairing / replacing the roof as required to ensure the existing roof penetrations and flues, and make good following the removal of the redundant flue.

3.2.10 ELECTRICAL WORKS ASSOCIATED WITH MECHANICAL WORKS

3.2.10.1 The electrical installation is to be carried out in accordance with the 18th Edition IET Wiring Regulations BS 7671. All electrical works shall be undertaken by an NICEIC Registered Electrical Contractor.

3.2.10.2 Ensure appropriate isolation and locking off of supplies before any work takes place.

3.2.10.3 Carry out electrical alterations to existing heating control panel in the boiler room to disconnect and remove redundant plant controls and equipment.

3.2.10.4 Install new, stand-alone, boiler control panel to serve new boilers, c/w all control equipment, labels, panel switches, indicator lamps and interlocked rotary main isolator to satisfy BS 7671.

3.2.10.5 The Contractor shall ensure all the requirements from the specification are fully allowed for within the tender return.

3.2.11 BUILDERS WORKS ASSOCIATED WITH MECHANICAL WORKS

3.2.11.1 All associated builder's work will be undertaken by a reputable building contractor. The Contractor will include for undertaking all minor drilling of holes for pipework, boiler flues and fixing equipment etc.

3.2.11.2 The Contractor shall provide the Employer, with 7 working days' notice of his intention to carry out any tests associated with the electrical services installation.

3.2.11.3 All works which are to be 'covered up' including services above ceilings and embedded within the structure etc. shall have undergone a satisfactory and witnessed / approved test and shall have been inspected and cleared by the Employer immediately prior to that section of the works being covered up. This clearance shall not detract from the Contractor's responsibilities, as detailed elsewhere in this specification.

3.2.11.4 Should the Contractor fail to obtain the necessary approved test clearance, the Employer may, should he deem it necessary, instruct the Contractor to open up the relevant sections of works for inspection and testing. Under such circumstances, no claim for any costs and / or delay, on behalf the Contractor shall be considered.

3.2.11.5 Prior to practical completion of the works, the Contractor shall provide inspection, test and completion certificates for each section of the works, bound together with the associated test results data sheets. Test results data shall be presented in typed, tabular format. Copies of these certificates and test results data shall be included within the general operating and maintenance manuals.

3.2.12 EARTHING AND BONDING

3.2.12.1 Provide equipotential bonding as BS 7671 and other recognized British Standards. Ensure that earth continuity is maintained throughout the installation from each item of equipment to an earthing point in each control panel where connection shall be made to the main earth terminal.

3.2.12.2 Earth and bond the metalwork of the complete mechanical systems installation in accordance with the requirements of BS 7671.

3.2.12.3 Effectively bond mechanical systems switchgear to maintain earth continuity from the main earth terminal.

3.2.12.4 Install bonding connection points on all metallic systems.

3.2.13 LIGHTNING PROTECTION

3.2.13.1 Provide lightning protection upgrades and alterations as required to cover the building once the solar have been installed as detailed and required within BS 7671 and other recognized British Standards

3.2.14 SYSTEMS OF WIRING

3.2.14.1 The Contractor shall be responsible for the detailed design of the general cable containment systems. He shall ensure that all cable trays, conduits, trunkings

etc. are sized in accordance with the requirements of BS 7671 and this specification. In addition, he shall ensure that a minimum of 25% spare capacity is allowed.

3.2.14.2 Cables within voids must be suspended appropriately and in accordance with regulations. Cables **must not** be laid on suspended ceiling grids. Metal cable ties shall be employed as required to ensure all current building regulations are met.

3.2.14.3 All works to be done in accordance with IET wiring regulations BS 7671 2018 amended. The requirements of the Health and Safety Executive shall be complied with at all times.

3.2.15 CONTAINMENT SYSTEMS

3.2.15.1 The Contractor shall adapt the existing cable containment systems and provide new cable containment systems to suit the proposed layout. The Contractor shall seek approval from the Project Lead for the proposed routes and will allow for the routes as agreed with no extra costs and the required containment solution appropriate to the environment.

3.2.15.2 Dedicated containment (50mm galvanized trunking or equivalent) shall be provided for the main DC cables with appropriate labelling.

3.2.16 MODIFICATIONS OF EXISTING SERVICES

3.2.16.1 The Contractor shall allow within his tender for all modifications as necessary to produce a fully compliant and safe installation in accordance with this specification and all appropriate regulations. The Contractor is advised that due to the nature of the works, they may be required to modify existing services in order to permit continued operation of circuits serving areas outside the works area. This may include alterations and changes to distribution boards for inverter connections.

3.2.17 EXISTING CIRCUIT IDENTIFICATION

3.2.17.1 The accuracy of the existing distribution board schedules cannot be confirmed. The Contractor is advised that they shall need to conduct a survey to establish and confirm which circuits need if any modifying to complete the works.

3.2.17.2 Circuits fed from the existing distribution boards under the works, feeding the equipment in areas outside of the works, will need maintaining in operation throughout the works.

3.2.17.3 The Contractor shall allow within his tender to update all circuit schedules as required and provide a printed laminated copy at all relevant Distribution Boards.

3.2.18 SELECTION OF COMPONENTS

3.2.18.1 The Contractor shall select components and equipment as per section 5.0.23.2 and 5.1. Each tenderer shall, during the tender period, satisfy himself that he is able to obtain the specified equipment in sufficient time to meet the installation program. Should the tenderer be concerned that there are any issues with regard to the supply of components or services, he shall raise his concerns during the tender period. He shall, however, ensure that his concerns are fully substantiated with appropriate documentation.

3.2.19 IDENTIFICATION AND LABELLING

3.2.19.1 Fit coded markers at each end of all conductors and record the conductor references on the 'As Fitted' drawings.

- 3.2.19.2** Use distinct and different colours for ELV and LV cable systems.
- 3.2.19.3** Loosely loom and identify all cables prior to termination.
- 3.2.19.4** Identify both ends of each control cable by means of slip-on cable markers suitable for the overall diameter of the cable concerned. Arrange the markers to indicate the alphanumeric references shown on the wiring connection diagrams. Use a maximum of five-character markers for each reference.
- 3.2.19.5** Identification and labelling to comply with BS 7671.

3.2.20 ENERGY DISPLAY MONITOR

- 3.2.20.1** Supply, install and commission an Energy Display Panel to incorporate the energy generated by the PV and other energy and carbon savings of the installed equipment. The position to be agreed onsite with the project team.
- 3.2.20.2** Data to be logged via the building BMS (Building Management System) as part of the energy management strategy for the building.

3.2.21 STANDARD AND REGULATIONS

- 3.2.21.1** The whole of the works shall be carried out in accordance with the standards detailed in the current edition of BS 7671 and all relevant NICEIC Guidance Notes.
- 3.2.21.2** Engineering Recommendation G83 (current edition) – Recommendations for the connection of small-scale embedded generators embedded generators (up to 16A per phase) in parallel with public low voltage distribution networks.
- 3.2.21.3** Engineering Recommendation G59 (current edition) – Recommendations for the connection of the generating plant to the distribution systems of licensed distribution network operators.
- 3.2.21.4** BS 7671 (current edition) – Requirements for electrical installations (all parts – but in particular Part 7-712 requirements for special installations – Solar photovoltaic (PV) power supply systems).
- 3.2.21.5** BS EN 62446 (current edition) – Grid connected photovoltaic systems – Minimum requirements for system documentation, commissioning tests and inspection.

3.2.22 SOCIAL VALUE, SUSTAINABILITY, ENVIRONMENTAL CONSIDERATIONS

A Contractor is sought who will add value to the Contract by providing additional community benefits which support Torbay Council's ambitions for a prosperous and healthy Torbay, as identified in the Corporate Plan 2015-19:

<http://www.torbay.gov.uk/council/policies/corporate/corporate-plan/>

- 3.2.22.1** Applicants should take into account the following key areas in formulating their response:
- More use of sustainable energy sources in local industrial processes and business operations (e.g. renewable energy)
 - Commitment to achieve net zero carbon by 2030 with the inclusion of monitoring with specific milestones

- Monetary contributions to offset equivalent tonnes of carbon where carbon cannot be reduced within the Contract's timeframe
- To achieve a Carbon Certification
- Higher number of fleet or construction vehicles that comply with EURO 6 emission standards or is LEV
- Increased number of contractors operating low or zero emission vehicles
- Innovative measures to safeguard the environment and respond to the climate emergency.