**RETROFIT AN EXISTING INDUSTRIAL UNIT TO A METALLURGICAL RESEARCH AND DEVELOPMENT FACILITY**

**Tender Reference Number:** BCR-PEN-001

**1. Introduction**

Bluecap Resources Ltd invites tenders to undertake work in refurbishing an existing industrial unit as part of its development to a R&D facility located in Penryn, Cornwall. This document provides details on the scope of work, requirements, and submission process for the tender. Applicants are encouraged to suggest alternative construction methodologies, however all works will be agreed prior to commencement. The successful applicant is expected to liaise with third party suppliers to ensure appropriate systems are installed to fulfil their intended use.

**2. Project Overview**

**Project Title:** Retrofit an Existing Industrial Unit to a Metallurgical Research and Development Facility

**Location:** Unit 7 Parkengue, Kernick Industrial Estate, Penryn, Cornwall, TR10 9EP

**Duration:** Completion deadline 20 December 2024.

**Description:** The project involves comprehensive refurbishment works to develop a new R&D facility for operational use by 20 December 2024. The scope includes various tasks that need to be completed by certified and competent installers. The facility consists of five main work areas, namely:

1. Pilot Plant Facility
2. Metallurgical Laboratory
3. Analytical Laboratory
4. Offices
5. Employee Facilities

The contractor is invited to refer to the plans provided in the appendices. Successful applicants will be invited to the facility where discussions will be held to finalise required system specifications and the contractors’ roles and responsibilities. Interested contractors are invited to bid at the nearest opportunity, by 18 October 2024, as works need to be completed by 20December 2024.

**3. Scope of Work**

The required refurbishment works include:

* 1. **Structural Works (**reference Appendix 1 and 1a)
	2. **Installation of two single and one double internal doors**. Door specifications: Each door opening to be fitted with two panels of Georgian Wired Glass, 44mm thickness and supplied and fitted to meet with full BS EN certification and is wholly compliant with the most recent UK Building Regulations.
	3. **Installation of dry walls as per the plan**. Insulation specification: Multi-purpose insulation board (such as Celotex) for the applications of timber framed walling. To include a low emissivity foil facing to provide a minimum 0.022W/mK thermal conductivity. Insulation product to be certified to meet building regulations. Dry walling to be supported by a timer frame and painted matt white.
	4. **Installation of a shower room**. Specification: Conversion of an existing female toilet into a shower room that will consist of two partitioned shower compartments each with space for changing and hanging clothes. Each compartment to have lockable doors and partitioning to give full privacy with vapour/steam extraction to the outside of the building via automatic activation by turning on the interior light. Non-slip flooring suitable for wet rooms to be installed with sealing to prevent leakage into the building. The showers will be a standard domestic unit and fed from an existing gas boiler.
	5. **Modification of Disabled Toilet**: Specification: The existing disabled toilet to be converted into a unisex toilet with reasonable provision for disabled use. Existing sanitaryware and disabled related furniture and flooring (non-slip) to be replaced for new. A hand-drier (such as a Dyson or similar) and a paper towel dispenser to be installed. The existing extractor should be modified so it is activated with the wall light switch.
	6. **Modification of Male Toilets**: The existing male toilet will require new flooring and taps for the sink. A hand-drier (such as a Dyson or similar) and a paper towel dispenser to be installed. The existing extractor should be modified so it is activated with the wall light switch.
	7. **Sound Insulation of Inner Room**. A small inner room exists in the Metallurgical Laboratory, see plan. This room is timer framed and sound proofing between framing to be added primarily for sound proofing. The internal wall to be finished with plaster boards and painted.
	8. **External wall Cladding of Lean-to-Extension.** Insulated cladding is required along three sides of the existing lean-to-extension. Cladding to consist of 40mm insulated corrugated metal sheeting, the specification of which to be discussed with the successful applicant. A roller door (mechanical opening), for forklift access, to be installed at the front of the lean-to-extension and a pedestrian doorway at the rear.
	9. **Storage Containment Bund**. Two separate areas require the construction of a floor slab with concrete bunding:

3.1.9 ***Bund 1****: Dimensions 7 meters by 14 meters with a 300mm high bunded co ncrete block wall. Pedestrian access to be installed via a steel walkway fitted with handrails over the bunded wall and a point of access to allow entry of a pallet truck or forklift via a water-sealed gate. Floor slab to be constructed using ballast overlain by a 150mm thick slab using C35 concrete pitched at an angle for water run-off at 13mm vertical by 300m horizontal. An industrial drainage channel to be installed within the slab (located along the lower edge of the slab) feeding into a 0.25m3 sump. A drainage valve to be installed, level to the top of the sump, to allow rainwater run off to escape through the bund.*

* + 1. ***Bund 2****: Dimensions 7.5 meters by 19 meters with a 300mm high bunded concrete block wall. Two pedestrian access points to be installed via a steel* walkways fitted with handrails over the bunded wall and a point of access to allow entry of a pallet truck or forklift via a water-sealed gate.Floor slab to be constructed using ballast overlain by a 150mm thick slab using C35 concrete pitched at an angle for water run-off at 13mm vertical by 300m horizontal. An industrial drainage channel to be installed within the slab (located along the lower edge of the slab, running parallel to the gable end of the pilot plant area) feeding into the 1m3 sump. A drainage valve to be installed, level to the top of the sump, to allow rainwater run off to escape through the bund.

**3.2 Fume Extraction (**reference Appendix 2)

1. **Supply and installation of four Local Exhaust Ventilation (LEV) systems.** All systems must meet regulatory requirements and as such the contractor needs to interpret the needs to provide effective LEV systems capable of delivering the required control. On completion of the installation process the contractor must commission it to ensure it adequately controls contaminant exposure. An anemometer fitted with a rotating vane probe to accurately measures airflow and air velocity with the capability for measuring ambient temperature, should also be supplied by the contractor to enable the operator to undertake routine conformity checks.
2. Four independent systems to be installed each referred to as Extraction System A1, A2, B and C, as shown in Appendix A, detailed below:
3. **Extraction Systems A1**. This extraction system will extract fumes from two separate fume cabinets which will sit side-by-side. Contractor to supply and install units including necessary electrical and ducting. Specifications: New units with approximate dimensions of 2000mm wide, 900mm deep and 2970mm high fitted with a laminated glass sash To include circa 880mm high support frame with under bench chemical storage cabinets. To be ducted to atmosphere with linked fume extract system complete with new centrifugal fan & UPVC ductwork. The system must meet all regulatory requirements (BS 7258:1994 or BS EN 14175:2003).
4. **Extraction Systems A2**. This extraction system will extract fumes from an Inductive Coupled Plasma (ICP) analytical instrument. The extraction system requirement will be specified by the supplier of the ICP instrument but will broadly consist of galvanised 6 inch ducting and a centrifugal extractor that will be mounted on the internal wall adjacent to the instrument located some 3 meters internally.
5. **Extraction Systems B and C**. Specifications: The systems should be designed and installed for the effective removal of particulates and nuisance fumes/Odors. Each system should be equipped with appropriate ducting with extraction rates sufficient for effective removal of fine particulate having a nominal particle size of 80% passing 50 microns. Nordfab clip galvanised ducting to be installed with dampening valves installed on each outlet. The diameter of the ducting to be specified by the contractor in order to meet appropriate effectiveness of dust/odour removal.
6. For Extraction System C, an externally wall mounted centrifugal extractor will be adequate for direct discharge as particulate loadings will be minimal.
7. For Extraction System B, in order to handle this duty, it is envisaged that a Donaldson Unimaster UMA253 K7 unit (or similar) is required, but this will be discussed with the contractor to finalise the exact model once the contract has been awarded. The dust collector should be manufactured in mild steel, complete with filter media, integral fan fitted with 3kW motor, hopper, support, 80 litre bin, bin balance, acoustic diffuser, weather cowl and UCS starter/controller.

**3.3 Installation of Work Surfaces (**reference Appendix 3**)**

* 1. Supply and installation of some 30 meters or more of worktop with undercounter draws and cupboards. Configuration of the undercounter design will be four sets of cupboards followed by one draw cabinet. Specification: As guidance, these are cabinets and worktops as used for domestic kitchens. The base units and doors will be grey or a similar dark colour with preference being shown in the following link: [GoodHome Stevia Matt blue slab Base Kitchen cabinet (W)1000mm (H)720mm | DIY at B&Q](https://www.diy.com/departments/goodhome-stevia-matt-blue-slab-base-kitchen-cabinet-w-1000mm-h-720mm/5059340702636_BQ.prd?alt=true). The worktop will be a 34mm thick gloss black granite effect laminate post-formed Kitchen worktop. All fixed work surfaces to be fitted with a splash back wall return, at least 30mm high.
	2. Supply and installation of some 15 meters of wall cupboards, again following the colour and design style described in the bullet point above.
	3. Supply and installation of two floor standing yellow hazardous substance cabinets chemical cabinets each with dimensions of 1800 x 915 x 460mm with lockage doors and 25L sump.
	4. Supply and installation of two tables (not fixed) each with dimensions of 2m by 2m and four tables (not fixed) each with dimensions of 1m by 3m
	5. Installation of shelves as per the plan. The tables should be constructed using a steel frame that can be bolted together to enable component parts to be transported via a standard doorway. The work surface should be at least 40mm thick and finished with a laminate or painted finish.

**3.4 Electrical Installation (**reference Appendix 4**)**

1. Supply and install a 3-phase distribution board in the pilot plant area. The distribution board will serve multiple electrical outlets both double socket three pin and double bayonet sockets fitted with switches and being IP66 rated. In addition, four three-phase sockets to be installed in the pilot plant area, the location of which will be discussed with the successful applicant. Isolators for the sump pump, compressor and fan will also require installing. Industrial grade cable trucking will be required with appropriate sections for passing over doorways.
2. Adjacent to the pilot plant area is a lean-to-extension which will house industrial processing equipment. This areas will require six double three pin sockets (IP66 rated) and six 32 amp bayonet three pin sockets. A further three three-phase sockets to be installed. All external sockets to have isolators located inside the pilot area building.
3. The lean-to-extension will also require additional lighting and this will be achieved using four directional waterproof LED lights. These lights will have a common isolator within the pilot plant area.
4. All other areas will have either IP66 double three pin sockets or standard double pin socket outlets, as per the plan.
5. Required isolators for all other areas are shown on the plan.
6. Supply and install ceiling lights required for the office located adjacent to the analytical laboratory. Specification: Lights to tie into existing overhead industrial cable tray where the existing fluorescent tube will be replaced by multiple higher lumen LED batten lights.
7. Supply and install extractors for the kitchen, staff restroom, toilets and the shower room.
8. Existing external floodlights should be inspected and repaired accordingly
9. The appropriateness of the existing distribution board should be assessed and recommendations provided if improvements are required.
10. Electrical works should be signed off by a competent engineer with appropriate certificates being provided.

**3.5 Installation of Sinks and Water Lines (**reference Appendix 5)

* 1. Supply and install six laboratory sinks and corresponding drainage as per the plan. Specifications; stainless steel kitchen sink with drainer.
	2. Supply and install four emergency safety showers as per the plan.
	3. Installation of water piping and tap outlets (lock hose fittings).
	4. Fit some 26 meters of plastic floor drainage channel into an existing concrete floor. Liquids will gravitate to a discharge point where it will be temporarily collected in a 1m3 sump fitted with a sump pump for transfer to an IBC. The sump will be fitted with a metal grating and will not exceed 0.5m in depth. The contractor will be responsible for installing this system.
	5. Install five water outlets along the external gable end of the pilot plant area (within the lean-to-extension)

**3.6 Gas and Compressed Air Lines (**reference Appendix 6**)**

* 1. Supply and install two industrial screw air compressors fitted with air drier and install appropriate air lines with allowance for 15 outlets.
	2. Supply and install a gas pipeline for a Inductively coupled plasma mass spectrometry (ICP). Supply and install a gas cage for safe storage of gases.
	3. **Painting**
	4. All areas to be internally painted floor to ceiling, except in the larger work areas (pilot plant, metallurgical laboratory and analytical laboratory) where the walls will be painted to a height of some 2 meters in light grey.

**3.8 General Site Refurbishment**

* 1. The site has been dormant for some time and as such general maintenance is required, namely: Roof gutters require clearing, drains unblocking and made serviceable. Weeds surrounding the building need to be removed. Overhanging tree branches need to be removed. An accumulation of debris at the rear of the property needs to be removed as an accumulation of rotten leaves has built up along fire escape routes and potentially serves as creating damp transfer to the building.
	2. All office areas require the contractor to supply and install industrial hard-wearing carpets.
	3. The pilot plant, metallurgical laboratory and analytical laboratory require the installation of an industrial floor paint.
	4. Signage (to be supplied by Bluecap) to be installed – this includes company logos and health and safety signs.
	5. Pedestrian and vehicle demarcations will require installing.
	6. Fire access doors require some minor repairs or replacement and should be discussed with the site manager.

**3.9Install Perimeter Fencing** (reference Appendix 1a and 7)

1. Supply and installation of a 1.8 meter high palisade galvanised fence with a double opening fence of 4 meters The fence spans some 45 meters and will run from the Western boundary (at point A) to the Eastern boundary (at point), as marked in the plan (Appendix 1a and 7)

**3.10 Install Security and Fire Alarm System**

* 1. Assessment of the existing fire alarm systems will be required by the contractor with recommendation made if appropriate.
	2. Supply and install a new security system with CCTV.
	3. **Waste Removal**

3.11.1 All waste generated from the refurbishment works must be removed and properly disposed of in accordance with local regulations.