



En partenariat avec



WORK CARRIED OUT FOR A DISMANTLING AND STORAGE AREA AT THE TECHNICAL LANDFILL SITE

SPECIFIC TECHNICAL SPECIFICATIONS

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SECTION 0 SCOPE OF SERVICES

0.1 CONTRACT CONTENT – PURPOSE OF THE CCTP

As a reminder, an initial study/design phase led to the creation of a foundry dock. The work involved the completion of several parts:

- The foundry building
- The access slab to the foundry
- From part of the EU network
- Supply of the hydrocarbon separator

The purpose of these technical specifications is to describe the work involved in creating the ELV dismantling area and the spare parts storage area (note that the storage area is planned as an optional phase, with the exception of the paving, which is planned as a fixed phase) at the Vailepo technical landfill site in Wallis.

All work shall be carried out in accordance with the specifications and technical regulations in force on the date of signature of the works contracts (DTU, Standards, Calculation Rules, Professional Rules, etc.). The work shall not

0.2 PHASE DISTRIBUTION

Firm phases	Earthworks Work on all slabs: <ul style="list-style-type: none">• Demolition area• Storage area• ELV stock• EP/EU/Elec network inputs Dismantling area
Optional slices	Storage Area

0.3 SITE VISIT

A site visit may be arranged if requested by companies, but must be carried out on a single date. MOE CEREG WALLIS ET FUTUNA (Tel: 82 29 52) can organize this visit. This visit is not necessary and will not be taken into account in the assessment.

SECTION 1 GENERAL

1.1 REGULATIONS - STANDARDS - REQUIREMENTS

The contractor shall perform all calculations and carry out all work in accordance with the CCTG documents, best practices, laws, and regulations, including:

- ✓ BAEL 91 rules including steel data sheets and updates (Calculation of reinforced concrete structures and buildings)
- ✓ BPEL 91 rules
- ✓ BV Antilles rules
- ✓ NV 65 rules and revisions
- ✓ Professional rules relating to the design of foundation embankments, concrete facings, joint waterproofing, underground pipes, flat roofs in tropical areas, etc.
- ✓ CM66 rules (Calculation of steel structures)
- ✓ CB 71 Rules
- ✓ FA and FB Rules (Fire behavior of steel and concrete structures)

- ✓ Safety regulations in residential buildings and safety instructions
- ✓ Booklet 70 on sanitation works
- ✓ CSTB CPT floors relating to the use of prefabricated floor elements
- ✓ Circular relating to parking lots (03/03/75) and circular of 17/07/73 supplemented by that of 14/03/75
- ✓ NFP 01 012 for guardrails
- ✓ NFP 06 001 for operational overloads
- ✓ NFP 06 004 for permanent loads
- ✓ NFP 11 213 relating to concrete paving
- ✓ NFP Series 15 relating to the use of hydraulic binders and their testing
- ✓ NFP 14 204 1
- ✓ NF EN 206-1 relating to concrete for construction
- ✓ NF EN517 – PR EN64 – 795 – ISO 1140 relating to safety and maintenance devices maintenance
- ✓ DTU 11 Soil investigation
- ✓ DTU 12 Earthworks for buildings
- ✓ DTU 13.1 and 13.2 Shallow foundations and Deep foundations
- ✓ DTU 13.3 of 20/03/05 Paving work
- ✓ DTU 20.1 Masonry work, reinforced concrete, walls, and facades
- ✓ DTU 20.12 Terrace masonry work
- ✓ DTU 21 Concrete work
- ✓ DTU 21.3 Preparation of concrete mortars
- ✓ DTU 26.1 Mortar coatings based on hydraulic binders
- ✓ Decree of November 14, 1988 relating to the protection of workers
- ✓ UPEC classifications
- ✓ CSTB technical data sheets on non-traditional processes
- ✓ CCT – walls made of American blocks
- ✓ Eurocodes

During the course of the work, the contractor must submit to any quality checks. equipment and its use, in accordance with standards and specifications.

1.2 SUBMISSION OF DOCUMENTS

Distribution channels will be defined in coordination with the OPC at the beginning of the preparation.

1.2.1 EXECUTION FILE

The execution plans will be drawn up by the company based on the architect's plans. They will comply with the principles of the designer's plans or a construction process accepted by the project manager. A schedule for the delivery of plans will be drawn up by the company at the start of the preparation period.

All execution documents (plans, PAC, technical data sheets, etc.) must be approved by the project manager before implementation.

The company is required to carry out a soil survey in order to propose a foundation plan for the foundations in line with the constraints of the terrain.

1.2.2 COMPLETION DOCUMENTATION

Before the end of the construction site, the contractor will submit for approval a file of complete verification including:

- ✓ The 1/200 scale site plan drawn up by a certified surveyor
- ✓ The plans, notebooks, and as-built drawings reflecting the work performed
- ✓ Acceptance reports drawn up during operations (concrete, platforms, supports, etc.)
- ✓ Self-inspection sheets
- ✓ Detailed instructions for the use and maintenance of any equipment

These documents shall accurately reflect the work actually carried out. In particular, they shall also represent non-visible structures as they were implemented. Graphic documents shall be produced using conventional reference points, symbols, and colors.

After validation by the project manager, the contractor shall submit a complete as-built file in three paper copies and one reproducible copy (.dwg files) for acceptance of the works.

1.3 SELF-CHECKING - TESTS - TOLERANCES - ACCEPTANCE

1.3.1 SELF-CHECK

Throughout the execution of the work, the contractor shall carry out self-checks of its services.

It shall draw up self-inspection sheets and distribute them to the project manager.

These self-checks will cover, in particular:

- ✓ Execution and manufacturing plans (compliance with the contract file)
- ✓ Prefabricated elements (in accordance with DTU No. 22.1)
- ✓ Compliance with construction dimensions
- ✓ Compliance with tolerances for concrete elements
- ✓ Proper construction of structures (compliance with execution plans)
- ✓ Installation of reservations, door and window frames, mannequins, plates, etc.
- ✓ Installation of prefabricated elements and networks
- ✓ The quality of the products and materials used (aggregates, concrete, screed, etc.)

1.3.2 TESTS

The contractor shall carry out, at its own expense, the technical tests required for its own services. These tests shall be carried out by an independent body and shall be recorded in a systematic report.

The contractor must carry out all tests relating to its work in accordance with the list of DTU and those requested by the project manager and the inspection office:

- ✓ Concrete testing: Cylinder and bar tests shall comply with NFP 15.451. The contractor shall provide one set of test specimens per 100 m³ of concrete. Each sample shall be clearly marked to indicate the part of the structure from which it was taken. Additional test specimens may be taken at the request of the project manager. The project manager may request tensile tests on the concrete.
- ✓ Plate tests: all plate tests on the reinforcement shall be at the expense of the contractor and shall be carried out by a competent and approved body. Paving work may not commence without the acceptance of the platforms by the Project Manager on the basis of the test results.
- ✓ Soil studies and additional surveys: all additional soil tests, regardless of their nature, that the contractor deems necessary to conduct its study shall be entirely at its expense and carried out by an independent body.
- ✓ Terrace watering tests: the tests shall be carried out in accordance with DTU No. 43.

A copy of each report shall be sent to the project manager and the inspection office no later than eight days after the test has been carried out.

1.3.3 EXECUTION TOLERANCES

The contractor must comply with the following tolerances:

- Length: +/- 2 cm over the total length of each building.
 +/-5 mm on the axes of posts, studs, and plate bases for purlins.
- Squaring: +/-5 mm difference between two diagonals of the same opening.
 +/-2 mm difference between two sides of the same opening.
- Verticality: +/-1 cm on the height of the building.
- Flatness: +/-5 mm on a 2 m ruler.
 +/-2 mm using a 0.20 m ruler.
- Threshold: from -5 mm to 0 over the length of the opening.

Failure to comply with the tolerance thresholds will systematically result in demolition and the contractor bearing the cost of redoing their work and any related work (waterproofing, tiling, painting, etc.).

All floors receiving a bonded covering must comply with the tolerances for a type II substrate as defined in CSTB specification 2478.

1.3.4 ACCEPTANCE OF SUBSTRATES

Substrates must be free of loose laitance, traces of release oil, and any efflorescence.

The work includes grinding any uneven edges and leveling any segregated areas.

The verification and inspection of the substrates will be carried out by the parties concerned in the presence of the project manager and must be recorded in an acceptance report. The service must be compatible with and sufficient in relation to the services provided by the other trades. It will include the constraints associated with the trades and construction methods used (glued, sealed, slopes, etc.).

The company shall take particular care with the surface condition of the premises to be tiled.

Concrete facings shall comply with the following criteria in accordance with DTU 21 and standard NFP 18.503:

- ✓ uniform appearance.
- ✓ pebble pockets or sandy areas filled in.
- ✓ Uneven edges ground flush.
- ✓ edges and picked, rectified, and dressed.

The surface appearance must meet the criteria for flatness (P), texture (E), and color (T). Facings must be P(3) and E(3.3.2). The color criterion will not be considered.

Flatness: Tolerance of 5 mm with a 2 m straightedge and 2 mm with a 0.2 m straightedge.

Texture: Maximum uniform bubbling corresponds to scale 3 in Appendix A of the standard, with a maximum surface area per bubble of 0.3 cm², a depth of less than 2 mm, and a bubbling surface area representing 2% of the total surface area.

Areas where the individual characteristics of the bubbles are identical to those defined above but where the concentration exceeds 2% must not represent more than 5% of the surface area of the panel element in question.

Any acceptable localized defect is limited to an area resulting from a coefficient of 4 applied to an observation distance of 2 m, i.e., 8 cm².

Concrete repairs, wall ends, floor edges, coating defects, etc. will be treated with 20/10 bridging tape to ensure the facade is waterproof.

1.4 WARRANTY - MAINTENANCE OF INSTALLATIONS

The contractor shall be responsible for protecting and maintaining its installations between completion of the work and final acceptance. During this period, it shall replace at its own expense any mechanical or electrical parts that are missing at the time of acceptance.

He shall remain liable for any accidents that may result from the manufacture and/or installation of his equipment, as well as for any damages that may be claimed in the event of an accident.

1.5 VARIATIONS AND OPTIONS

The company may submit variants within the following limits:

- ✓ Variations may only relate to secondary elements and must not compromise the basic design principles defined in this project.

- ✓ They must offer justified advantages in terms of economics, technical qualities, and aesthetics.
- ✓ They must not, under any circumstances, justify additional delays, whether in terms of design, manufacturing, and on-site implementation.

It should be noted that the contractor must demonstrate that the proposed solutions meet all regulatory and technical requirements.

The company will be responsible for developing each variant (plans, calculation notes, and justifications for the technical control office).

The costing of the alternative solutions will be provided in an appendix to the tender responding to the solution.

basic version proposed in this description.

The Project Management excludes any consideration of proposals for possible modifications outside the framework indicated above.

If the proposal is accepted by the project manager and the client, the company will be responsible for developing the new solution (plans, calculations, and justifications) and for all technical and financial implications for other trades.

Modifications proposed by the company during the execution of the contract

During the execution of the contract, if the company wishes to propose changes to the contract documents, these will only be considered if they are accompanied by an objective proposal for a reduction in cost and/or an improvement in technical or aesthetic quality.

Any proposal by the company to reduce the quality of materials or workmanship will be inadmissible.

Any modifications may only be proposed and approved during the project preparation period.

The optional section, storage area, may be built depending on the available budget.

1.6 CALCULATION ASSUMPTIONS

Soil: The permissible stress for the dimensioning of footings is 0.1 MPa at ELS

Wind: Wind speed 36 m/s – Terrain category 1 – EUROCODE 5. Climate:

Tropical humid maritime.

Environment class: **XC2** for foundations and **XC1** for paving Rainfall: 50% increase compared to the rates considered in mainland France.

Bracing: The bracing of concrete facades and gables is provided by the framework.

Operating loads:

Rolling loads – 24-ton hydraulic excavator and 16-ton loader

Steel coating:

3 cm on the inside

4 cm on the exterior side coated with waterproof paint

5 cm on the exterior surfaces not coated with waterproof paint and in foundations

Installation and shimming to achieve the required coating thicknesses with all constraints maintenance during casting and tightening.

1.7 QUALITY OF MATERIALS AND CAST-IN-PLACE STRUCTURES

Steel characteristics

They shall comply with the requirements of standards A 35 015 (smooth steels – FeE400) and A 35 016 to 35 023 (HA and TS steels – FeE500) and shall be weldable.

The steels used must have NF AFCAB certificates.

Characteristics of cast-in-place concrete

The mixing water shall comply with the requirements of standard NFP 18.303 and the effective water content shall be defined in accordance with Annex C of standard NFP 18.302. Binders and admixtures shall comply with standard NFP 18.370 and DTU 21.4. The quality and particle size distribution of aggregates shall comply with standard P 16.301.

Unless otherwise specified by an approved laboratory, or in the case of the use of standardized ready-mixed concrete (BCN) from a plant approved in accordance with standards NF EN 206-1.

The quantities indicated are given as a guide for one cubic meter of concrete:

No.	Type of structure	Strength class	Exposure of exposure
1	Clean concrete	C16/20	X0
2	Heavy concrete	C16/20	X0
3	Long beams	C20/25	XC2
4	Floor slab	C25/30	XC1

In all cases, the quantities of cement indicated are minimum quantities, with or without the addition of admixtures in the concrete mix.

During the preparation period, the contractor shall submit the supplier's approval to the project manager.

Throughout the construction project, concrete production will be subject to the rules and provisions of the daily self-monitoring of each of the categories used.

Concrete placement and control procedure

Concrete shall be transported in such a way as to prevent segregation.

The use of concrete pumps or pneumatic conveyors will be subject to approval. The concrete will be placed by vibration, using vibrators. The site must have the necessary emergency equipment available at all times to avoid any unexpected stoppage of concrete pouring, particularly when pouring large elements.

Vibration and compressed air production equipment will be provided with a 50% excess capacity over the equipment required for use.

Concrete pouring stops will be submitted to the control office, along with the provisions planned for resumption (screw cleaning, watering, formwork layout, rods).

Cylinder concrete tests will be carried out at 7 and 28 days in accordance with standards NFP 18.400/404/406. Samples will be taken at the exit of the concrete mixers in accordance with DTU No. 21.

If the breaking stresses on cylinders at 28 days prove to be lower than the stresses predicted by the calculation, the construction elements cast during the period of insufficiency will be checked in situ.

This check will be carried out jointly by the Engineer from the Control Office and the company representative using a sclerometer.

If the results are unsatisfactory, a load test will be carried out at the contractor's expense. A decision will then be made as to whether to proceed with the demolition and reconstruction of the disputed elements.

SECTION 2 – PRELIMINARY WORK

2.1 PROTECTION OF EXISTING STRUCTURES.

As stated in the "purpose of the CCTP" section of this document, existing structures must be taken into account during the work. The work specified in this CCTP must not damage existing structures. Any damage caused to existing structures must be repaired at the company's expense.

In order to obtain a realistic assessment of the condition of existing structures before work begins, a site meeting must be scheduled with the project owner, the project manager, and a representative of the contractor.

During this meeting, photographs must be taken with the agreement of all three parties. These will serve as proof of the existing structures prior to the works.

Minutes must also be taken, dated on the day of the meeting and signed by all three parties as proof and certification.

PLEASE NOTE: Any work carried out prior to the meeting will not be paid for and may result in the work being halted.

2.2 SITE INSTALLATION

2.2.1 SITE FENCING

Prior to the commencement of any work relating to the entire operation, the contractor shall, at its own expense, install site fencing and access points.

These fences shall be installed as soon as the contractor is notified of the work commencement order.

From the time of installation until the end of the project, the contractor shall ensure maintenance of this fence at its own expense. It will make any necessary modifications.

At the end of the project, it will remove and dispose of the fence.

2.2.2 CONSTRUCTION SITE PREMISES

The contractor shall install and maintain site facilities for personnel (changing rooms, meal facilities, sanitary facilities). Site facilities may be located on the company's premises if it is based in Wallis.

2.2.3 CONSTRUCTION SITE SIGN

The service includes the installation of a sign providing various information about the contract and the parties involved. It will be produced in accordance with the specifications of the project manager and the client.

2.2.4 COPY OF CONTRACT DOCUMENTS

The contractor shall be responsible for reproducing all contract documents requested at the outset.

2.2.5 WATER AND ELECTRICITY SUPPLY

The contractor shall be responsible for installing the water and electricity supply networks electricity networks necessary for the completion of the project. The service will include:

- ✓ Installation of an additional outlet on the low-voltage switchboard, including protective devices
- ✓ The power cable between the low voltage switchboard and the construction site
- ✓ The electrical box consisting of 6 sockets and the necessary protections.
- ✓ The connection to the existing water network
- ✓ The drinking water network between the existing system and the construction site.
- ✓ The water taps.

2.3 – IMPLEMENTATION STUDIES

During the preparation period, the contractor will submit a complete execution file including:

- ✓ Formwork plans including reservations requested by other trades
- ✓ Reinforcement plans
- ✓ Calculation notes for specific elements at the request of the technical committee or project manager.
- ✓ Laying plans for concrete repairs.
- ✓ Technical documentation for the equipment, materials, and products to be used
- ✓ Technical documentation and installation plan for the framework

All these documents must be approved by the project manager before work begins.
implementation.

2.4 – IMPLEMENTATION

The company is responsible for the layout. The company shall, at its own expense, maintain the fixed markers that enable the layout of the structures under construction to be checked at any time.

A document drawn to a scale of 1:200, to be submitted to the project manager for approval, must indicate the position of the axes and the alignment of the stakes or markers put in place.

SECTION 3 – EARTHWORKS

3.1 – EARTHFILL PLATFORM

The contractor must construct the embankment platforms for the building.

The backfilling will be carried out in accordance with the C.P.C. specifications and includes all necessary ground preparation work (terraces, steps, etc.).

They will come either from excavated material, if its quality is deemed satisfactory, or from borrow pits, subject to approval by the project manager.

The tests shall be carried out at the contractor's expense by a specialized engineering firm or a soil laboratory.

After completing the backfill, the contractor must carry out a series of tests to verify that the deformation modulus K (Westergaard modulus) is greater than 50MPa/m and that the EV2/EV1 values meet the following conditions: $EV2/EV1 < 1.6$ with $EV1 > 50MPa$ (plate tests). A test will be carried out every 200m² at the company's expense.

3.2 – ADDITIONAL EXCAVATION

3.2.1 EARTHWORKS FOR FOUNDATIONS

The service includes earthworks for the construction of:

- ✓ Longitudinal beams

The widths and depths will be determined according to the detailed design

The bottom of the excavations will be perfectly compacted and stepped if necessary.

3.2.2 EARTHWORKS FOR UNDERGROUND NETWORKS

The service includes:

- ✓ Excavations for electrical and water pipes.

The contractor must carry out excavation work under the building for VRD pipes, plumbing, and electrical work.

3.3 – ADDITIONAL BACKFILL

Additional backfill may be carried out using materials from the excavated spoil, provided that their nature allows this.

3.3.1 PERIPHERAL BACKFILL

The service includes the construction of 0/80 gravel backfills for the restoration of platforms and technical backfills after completion of the foundation and substructure work.

3.3.2 FILLING OF EXCAVATIONS FOR NETWORKS

The service includes:

- ✓ Backfilling of excavations for underground networks in accordance with best practice, including the installation of a sand bed above and below the pipes.

3.4 – REMOVAL OF SURPLUS MATERIAL

All materials from excavations that are not used for backfilling will be removed to an area previously selected by the manager of the Technical Landfill Center.

The service includes all handling, transportation, and installation costs at the specified location. The "unloading" vouchers will be provided to the Project Manager.

SECTION 4 – FOUNDATIONS / SLAB

4.1 – CLEAN CONCRETE

To be provided under all reinforced concrete structures in contact with the ground. B0 concrete, minimum thickness 5 cm.

To be provided: under joists and under isolated footings

4.2 – LEVELING CONCRETE

In order to achieve the required foundation level, concrete will be poured under the footings immediately after excavation.

The concrete will also ensure a smooth transition in the event of uneven foundation bases, with, if necessary, stepped construction (2H for 3V), blocking, and connection.

Location:

- For stepped foundations between different foundation levels.
- To obtain the foundation base level according to the slopes of the terrain and the recommendations in the soil report.

4.3 – INSULATED FOOTINGS

The service includes:

- ✓ Construction of B5 reinforced concrete foundations on sub-base concrete
- ✓ HA steel and dimensioning according to stresses, execution studies, and geotechnical reports geotechnical report
- ✓ Anchoring in suitable soil and pouring in full excavation at this height
- ✓ Steel reinforcement for all connections with other reinforced concrete structures
- ✓ All reservations for pipes for other trades

The reinforcement will be laid out in accordance with the reinforcement plans and checked before pouring.

The company is responsible for dimensioning the foundation footings.

The service includes the construction of strip footings under basement walls, isolated footings under posts, and any necessary deepening of the footings to

all types of networks above the footings, respecting a minimum cover (networks running up along the foundation posts)

4.4 – BEFORE POSTS

The service includes the construction of reinforced concrete footings with square cross-sections and high-quality facing on all sides.

HA steel reinforcement and dimensioning according to stresses and detailed design. Anchor crosses for fixing the post plates.

4.5 – BEAMS

The service includes the construction of reinforced concrete beams.

HA steel and dimensioning according to stress and execution studies.

At the perimeter of the construction, the lower edge of these structures must be located at 30 minimum cm below the finished exterior level.

4.6 – BITUMINOUS PROTECTION

All concrete structures in contact with the ground shall be protected by applying a bituminous protection such as FLINCOAT or similar, in two cross layers at a rate of 150 g per square meter per layer.

4.7 – SLAB

The contractor must construct a reinforced concrete slab.

The service includes the installation of reinforcement bars and embedded strips.

Thickness and reinforcement in accordance with the contract plans and detailed design drawings in order to support an operating load:

- Typical operating loads Workshop 250 daN/m²

The finishes will be very carefully smoothed, helicopter finishes, including slope shapes for connections to existing structures.

The service includes the creation of a slope towards the drain grate.

4.8 – CONCRETE WORKBENCH

The contractor must construct two (2) concrete workbenches in the building. The workbenches are located inside along the north and south facades of the building to be dismantled, as shown on the plan.

The height of the worktop must be 0.9m. The worktop will be smooth and minimum thickness of 7.5 cm.

The workbench on the north side is 2 m long and 0.75 m deep. The workbench on the south side is 11.8 m long and 0.75 m deep. Each workbench will have three chipboard legs, two at the ends of the workbench and one in the center.

SECTION 5 – EP NETWORKS

The contractor is responsible for constructing the rainwater collection and drainage system from the building to be constructed to the connection to the existing ditch.

5.1 – RAINWATER MANHOLES

The contractor is responsible for constructing concrete inspection chambers for the rainwater drainage system, consisting of a circular or square chimney, a channel with the same radius as the pipe, and two bush-hammered areas with a 10% slope.

The connection pipes shall have an angle greater than 67°30 and a lower generatrix level at least 10 cm higher than that of the main pipe.

The service includes the supply and installation of descent steps every 30 cm, gutter fittings, the supply and installation of frames and covers, as well as all sealing requirements. Manhole covers shall be lockable, parallel to reference structures (curbs, buildings, etc.) and leveled according to the final leveling of the operation. The grates must allow access for people with reduced mobility (opening < 2 cm).

Depending on the location, the plugs may be of the "fill" type.

EP manholes must have sleeves at the junction with the pipes and must comply with standard NFP 16342. The covers must be NF certified, comply with standard EN 124, and be installed on neoprene gaskets.

Connection work on the existing CET network will be carried out after approval by the project manager. After the work, the manhole must be sealed.

The service includes all roadworks requirements (permit applications, regulatory signage, diversions, etc.) and maintaining the network in service while the work is being carried out.

Network composition:

- ✓ Installation of two 800 mm diameter manholes, consisting of a frame and a ductile iron cover plate
made of ductile cast iron with a strength class of 250 kN
- ✓ Installation of two 800 mm diameter manholes, consisting of a frame and round cover
made of ductile hydraulic cast iron with a strength class of 250kN

5.2 – PIPES

The pipes for the rainwater drainage system will be laid on purified soil at the bottom of the excavations.

The pipes will be made of CR8 PVC and stored on site away from direct sunlight.

The PVC pipes will be stored on site away from direct sunlight. The storm water pipe connections to the manholes will be made using polyethylene joints.

The pipe joints will be directed towards the top of the section. The assembly and installation of joints will comply with the requirements of the standards in force (CCTG Fascicule 70).

If the cover height is less than 80 cm under the roadway and 60 cm under the sidewalk, all pipes will be encased in concrete. Pipes passing through retaining walls will be sleeved (ø 400).

Network composition:

- ✓ Supply and installation of ø 200 pipes for the main network

SECTION 6 – STRUCTURAL WORK

Hook fastenings are prohibited. All assemblies must be bolted.
Fasteners for frames on masonry supports shall be doweled.
The roof is a single-slope roof supported by containers and posts.

6.1 - FRAMING

The service includes:

- ✓ The supply and installation of porticos made from standard commercial profiles forming the primary frame, consisting of posts and rafters in IPE 400 profiles, fixed by bolted plates on the front concrete posts. The service includes bolting.

Dimensions to be confirmed according to detailed design.

6.2 - PANS

The service includes:

- ✓ Supply and installation of galvanized purlins, made from standard commercial profiles, Cé 150 purlins (Z 275 or Z 350),

The purlins are bolted onto the welded brackets on the rafters.

Dimensions to be validated according to detailed design studies.

6.3 - BRACING

The service includes the supply and installation of standard commercial profiles required for bracing the facades.

The bracing framework will be fixed using angle plates doweled to concrete walls and/or bolted to the primary framework.

The service includes:

- ✓ The supply and installation of standard 60mm x 60mm x 6mm thick angle brackets forming sloping bracing crosses. The angle brackets will be fixed across the span on the purlins in order to limit the deflection of these elements due to their own weight.
- ✓ Supply and installation of thrust struts between posts, round tubes with a diameter of 160 mm and a thickness of 3.6 mm

6.4 – FASTENERS ON SLABS

All assemblies carried out on site will be bolted.

The fastenings of the frames to the concrete supports will be made using plates anchored to the concrete slab or by pre-sealing the plate and anchor bracket into the concrete frame.

The contractor must supply the pre-sealing plates and check that they are correctly positioned before the concrete is poured.

SECTION 7 – ROOFING WORK

7.1 - ROOFING SHEETS.

The sheets used are NC71 profiles:

- ✓ Pre-coated galvanized steel sheets, 63/100 thick on one side, compliant with standards NFP 34301 and NF EN 10147. Anti-corrosion coating in aluminum-zinc alloy + pre-coated paint on one side. Pre-painted underside.
- ✓ Translucent polyester sheet metal

Fastening screws with reinforced anti-corrosion protection in accordance with NFP 34-205.1.

The sheets are covered by a ten-year manufacturer's warranty for durability and non-perforation on both sides.

The accessories used (flashings, ridge caps, edge caps, etc.) will have undergone the same treatments as indicated above.

The panel is made using pieces of a single length.

Longitudinal overlap is achieved by superimposing non-matching edge ribs with a 3 x 20 mm polyethylene adhesive joint in between.

Measures shall be taken to prevent metal particles from drilling from becoming embedded in the coating.

Cuts will be made with shears or nibblers and treated with rust inhibitor. Sheet metal cut on site (not in the factory) will be treated with chlorinated rubber. Accessories will be fastened with stainless steel blind rivets. Any element that is accidentally bent, deformed, or scratched must be rejected.

Fasteners shall comply with the requirements of NFP 34-205.1:

- ✓ The sheets shall be fastened at the top of the wave with stainless steel self-tapping screws on plastic clips or metal wedges.
- ✓ Cup washers of the same color as the sheets and accessories
- ✓ Jumper stiffened on 3 sides by ribs. A recessed end cap allows for the installation of a sealing washer
- ✓ PVC sealing washer with an outer diameter of 22 mm and clips

All necessary measures must be taken to prevent electrolytic bridges.

Color to be chosen by the project manager.

Location: Roofs of the dock to be designed.

7.2 SAIL SHEETS

The sheets used are NC71 profiles:

- ✓ Pre-coated galvanized steel sheets, 63/100 thick on one side, compliant with standards NFP 34301 and NF EN 10147. Anti-corrosion coating in aluminum-zinc alloy + pre-coated paint on one side. Pre-painted underside.
- ✓ Translucent polyester sheet metal

Fastening screws with reinforced anti-corrosion protection in accordance with NFP 34-205.1.

The sheets are covered by a ten-year manufacturer's warranty for durability and non-perforation on both sides.

All necessary measures must be taken to prevent electrolytic bridges.

The south, east, and west facades are cladding areas that will be constructed with mesh openings (single-twist galvanized mesh).

Color to be chosen by the project manager.

7.3 – EDGE TREATMENT

The service includes the construction of the edges.

Sloping edges

- ✓ Supply and installation of TPG 63/100 edge sheet metal with built-in wave, including drip edge.

SECTION 8 – RAINWATER DRAINAGE

8.1 – GUTTERS - GUTTER

The service includes:

- ✓ Supply and installation of gutters, dimensions 0.30x0.30, in TPG 20/10 sheet metal, including fixing to ridge purlins, including creation of outlets for connection to downpipes.

8.2 – DOWNSPOUTS

The service includes:

- ✓ The supply and installation of PVC downpipes, diameter 160, fixed to posts and connected to the downpipe outlets of the gutters.

SECTION 9 – ALUMINUM JOINERY

9.1 – GENERAL

The various joinery items (windows and doors) will be made of class 15 anodized aluminum in silver.

All fasteners shall be made of stainless steel.

The joinery must be adapted to the building's sheet metal walls. Profiled frames will be used.

9.1 – WINDOWS

The service includes:

- ✓ Clear safety single glazing
- ✓ Air and water sealing between joinery and structure
- ✓ Sealing of frames, brush seals, joint covers, hardware, and all installation and finishing requirements
- ✓ All requirements in accordance with DTU 37.1
- ✓ PVC 1.25x1.20
- ✓ 2 panels

9.2 – DOORS

The service includes:

- ✓ Single-leaf door
- ✓ Lower and upper sections with solid core and aluminum finish
- ✓ Air and water sealing between joinery
- ✓ Welded opening frame (upright, crossbar, baseboards)
- ✓ Aluminum handle
- ✓ 3-point security lock
- ✓ Stop for door in open position
- ✓ Stops to hold the door in the open position

- ✓ Sealing of frames, brushes, joint covers, hardware, and all installation and finishing requirements
- ✓ All requirements in accordance with DTU 37.1
- ✓ PVC 0.93x2.05

The service also includes:

- ✓ 2-panel gate on the same side, 1.5 m
- ✓ On sliding rails at the top outside the building,
- ✓ Stainless steel or aluminum metal frame
- ✓ Wire mesh core
- ✓ Stop bumper at the bottom
- ✓ A secure locking/unlocking system such as a key lock or padlock system

Please note that a similar gate will be added to the storage area as an optional extra.

SECTION 10 – ELECTRICAL WORK

10.1 – GENERAL

Normal installations will originate from the main low-voltage switchboard located in the northeast part of the foundry near the door.

COTSUEL CERTIFICATE.

As there are no meters, COTSUEL certification attesting to the compliance of the installations will be required for each post-meter network. COTSUEL certifications are the responsibility of the company, which will provide them duly stamped.

10.2 CABLE DUCTS – RESERVATIONS

The service includes the installation of all conduits and reservations necessary for the performance of the services, including filling with the same material as the walls penetrated.

- ✓ 1 TPC 110 conduit buried between the draft chamber and the low-voltage switchboard room
- ✓ 2 TPC 63 conduits buried between the draft chamber and the low-voltage switchboard room
- ✓ All conduits and cable trays or indoor distribution ducts

10.3 NEUTRAL SYSTEM

The grounding diagram for the entire facility will be a TT diagram, with the neutral directly connected to ground and the electrical installation's ground connections connected to grounding terminals that are electrically separate from the neutral grounding terminal.

Protection for distribution and transfer boards must take this into account, in accordance with the specifications of NFC 15 100 and the decree of November 14, 1988.

10.4 PERMISSIBLE VOLTAGE DROPS

The voltage drop between the source of the installation and any point of use must not exceed the values in Table 52V of NFC 15 100, namely:

- Type A installation powered from the public LV distribution network
- ✓ lighting circuits: 3%
- ✓ other uses: 5%

10.5 EARTH NETWORK

The grounding network will consist of the following components:

- ✓ bare copper at the bottom of excavations ($S = 25 \text{ mm}^2$)
- ✓ grounding bars in the low-voltage switchboard room:
- ✓ connection to the building's general ground via a bar to be installed

in the low-voltage switchboard room

The grounding network consists of a grounding belt at the bottom of the building excavations made of bare copper conductor with a cross-section of 25 mm².

The **maximum** resistance will be 10 Ohms with a 500 mA differential device.

The facility will be connected to the network at the bottom of the excavation pit for building E/F.

The service includes the grounding of the following masses:

- ✓ Lighting fixture supports and frames
- ✓ Sockets and power outlets
- ✓ The implementation of a main equipotential bonding

The main equipotential bonding must be connected to conductive elements such as water pipes and metal elements of the building.

The cross-section of this connection shall be between 6 and 25 mm², but shall not be less than half that of the main protective conductor.

The equipotential bonding in bathrooms connecting the following elements included in volumes 1, 2, and 3:

- ✓ Pipes,
- ✓ All electrical appliance masses
- ✓ Metal door frames that will be visible but as discreet as possible, located for example in the door frame bolts.

10.6 GENERAL ELECTRICAL SUPPLIES

10.6.1 LOW VOLTAGE MAIN BREAKER SUPPLY

The main low-voltage switchboard will be powered:

- ✓ Source: VRD network brought to the edge of the work zone,
- ✓ Distribution: via TPC conduits under the building
- ✓ Cabling to be installed in conduits and connected to the low-voltage switchboard.
- ✓ Permissible voltage drop: 1%

10.7 GENERAL LOW VOLTAGE PANEL - TGBT

The low voltage switchboard will be located in the dismantling area (low voltage switchboard), as shown in the plans; it will be equipped with the following components:

Accessory:

- ✓ Ammeter
- ✓ Voltmeter

Construction:

- ✓ IP43 IK07 cabinet
- ✓ head switch with MX type current emission coil
- ✓ differential branch circuit breakers
- ✓ Three-phase power supply for VRV unit
- ✓ Single-phase power supply for equipment in all premises
- ✓ Power supply to exterior facade lighting controlled by timer and presence detector
- ✓ Power supply for all lighting
- ✓ Power supply to all sockets

The contractor must install a type 1 surge protector at the head of the electrical installation (parallel connection on the main low-voltage switchboard power supply) with appropriate protection. The company will be responsible for connecting the low-voltage switchboard to the cables installed.

10.8 ELECTRICAL CONDUITS

The contractor shall be responsible for installing all internal electrical power supplies for all equipment and connections from the low-voltage switchboard or distribution board in accordance with:

- ✓ Main distribution on cable trays
- ✓ Terminal distribution in flush-mounted boxes - under ICTA

✓ H07VU or A05VVU, U1000 R2V type cabling for power and outdoor supply.

The service includes the installation of conduits for equipment in partitions.
or in peripheral walls.

10.9 TERMINAL POWER SUPPLIES AND EQUIPMENT

10.9.1 ELECTRICAL EQUIPMENT

10.9.1.1 SWITCHES / SOCKETS

Name:

✓ SAGANE type from LEGRAND, flush-mounted or waterproof, or similar.

Note:

✓ Specific power supplies such as air conditioning are provided via cable outlet boxes.

10.9.1.2 LIGHTING

This item includes the supply, installation, and connection of:

Double LED neon pendant lights – length 150 cm. Max. power 2x36W, aluminum and glass, silver gray color, including G13 socket LEDs

10.10 MINIMUM LIGHTING FOR PREMISES

Normal artificial lighting will be provided by fluorescent and incandescent lighting.

✓ Dock 250 lux ambient

Normal artificial lighting will be provided by fluorescent and incandescent lighting.

The lighting levels given above are applicable for a working height of 0.80 m after 500 hours of operation.

10.11 SAFETY LIGHTING

The contractor for this work will be responsible for the entire safety lighting network in accordance with current regulations; it will enable:

- ✓ Marking traffic routes,
- ✓ Enable obstacles to be recognized,
- ✓ Indicate the exits and routes for evacuating the premises.
- ✓ Enable security personnel to intervene,
- ✓ Provide minimum ambient lighting based on 5 lumens per square meter
- ✓ Safety lighting shall be non-permanent and provided by autonomous units with standardized pictograms or directional arrows, as appropriate, on a green background.

The emergency lighting will be non-permanent.

Evacuation units shall be installed at exits and in circulation areas, as well as at all changes of direction and at each obstacle.

Ambient blocks will be installed in large public areas.

The autonomous safety units will comply with standard NFC 71 800, be NF BAES-approved, be of the scalable memory type, be testable when connected to the mains, be of the surface-mounted type, and be equipped with an interchangeable battery unit that does not require the mains to be disconnected. Testing will be fully automatic.

The minimum luminous flux will be:

✓ Autonomous evacuation unit: minimum luminous flux 45 lm - autonomy 1 hour - light sources spaced at a maximum of 15 meters apart

SECTION 11 - PLUMBING WORK

11.1 – SUPPLY – DISTRIBUTION – EVACUATION

11.1.1 - DRINKING WATER SUPPLY

From the networks installed, supply to the EF distribution manifold via 25 mm semi-rigid PE polyethylene pipes, special drinking water pipes, including connection sleeve. Penetration and internal route in duct under the floor slab, including shut-off valve for individual isolation.

11.1.2 – COPPER MANIFOLD

The cold water distribution terminal networks will be created from the copper manifold located in the foundry room.

This item includes valves and their identification by labels engraved in white on blue background for cold water, indicating the initial of the equipment supplied. Includes all supply, installation, connection, and perfect sealing requirements.

11.1.3 – COLD WATER DISTRIBUTION

From the manifold, small-diameter pipes for connecting sanitary appliances, made of copper or PVC pipe of appropriate diameter, will be installed:

: minimum Ø 14 for taps

The embedded pipes will be installed under "Cintroplast" type sheathing and will not include any non-accessible connections.

Includes all accessories and all installation and fitting requirements. Hot water pipes will be placed under heat-insulated sheathing.

Includes elbows, tees, fittings, clamps, screws, bolts, etc., as well as all installation and fitting requirements.

11.2 – TAP

Installation of a 1/2" tap with a ¼-turn ball valve,
placed 1.10 m above the finished floor

SECTION 12 – FITTED CONTAINERS

12.1 DESCRIPTION OF EQUIPMENT:

These are fitted containers, similar to shipping containers. Five 20-foot containers are planned, each measuring approximately 6.05 m x 2.44 m x 2.59 m (L x W x H).

4 Containers are planned for the firm tranche and one for the optional tranche. The supply may be made:

- ✓ Either through the purchase, transport, and delivery of the containers
- ✓ Or by reusing containers already on site provided by the operator.

If the containers are provided by the operator, the company cannot issue any purchase invoices. The containers provided may be used subject to their structural compliance.

The cost of painting or cleaning to restore the containers to a clean condition must be taken into account, as well as the cost of lubricating the doors.

Installation on a pre-cast slab, using a mobile crane as a lifting device.

12.2 LOCATION:

Spare parts stock:

The area consists of:

- ✓ From a 20-foot shipping container located northwest of the eastern spare parts storage area shared with the dismantling dock. Note that these containers will serve as the structure for installing the framework. The openings will be retained. This container is included in the conditional tranche.
- ✓ Two containers will be stacked on top of each other on the west side of the storage area and the southwest corner of the dismantling area so that they can be used structurally as a facade and to replace the corner post. They will be used to store spare parts. The two containers are included in the firm tranche.

Dismantling area:

The dismantling area requires four containers:

- ✓ A converted sanitary container.
- ✓ A container converted for storage.

The two containers will be stacked on top of each other at the southwest corner of the dismantling area so that they can be used structurally as a facade and replacement for the corner post. They can be used for storage.

Both containers are included in the firm estimates.

12.3 CONTAINER CONVERSION

12.3.1 SANITARY CONTAINER

The sanitary container must include:

- A shower
- A toilet
- A sink
- Changing room
- Lighting

It must be connected to the EU, EP, and Elec networks

12.3.2 STORAGE CONTAINER

The three containers used for storage must be equipped with certain materials:

- Metal storage shelves 0.6 m wide, with a length and spacing of 0.7 m
- Ceiling lighting

12.3.3 CONTAINER USED AS A STRUCTURE

As its name suggests, the container serves as a structure for the dismantling building.

At, on Company
signature: