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EXTERNAL REFERENCE / VERSION

Call For Tender Documents

ERB-Call For Nomination document

Call for Nomination document related to the Emergency Response Building Project

Design and Built of the Emergency Response Building

Call for Nomination

1 Purpose

This Call for Nomination is to seek companies interested in participating in the tender for a Design and Construction of the Emergency Response Building (ERB).

2 Background of ITER project

The ITER Project is a joint international research project that aims to demonstrate the scientific and technical feasibility of nuclear fusion power. The members involved in the ITER Project are China, the European Union, India, Japan, Korea, Russia and the United States. ITER is being constructed in Europe, in Cadarache in the South of France. The construction of the ITER Tokamak and its associated plant systems represent one of the world's largest and most ambitious projects in terms of scope, cost and schedule.

ITER is an international project located in Saint Paul lez Durance, Cadarache, in the south of France.

The ITER Organization (IO) is the nuclear operator, complying with the relevant French Laws and regulations, authorization, codes and standards applied to Basic Nuclear Installation (INB). IO is responsible for integrating the activities from the early stage of design, to the procurement, the assembly, commissioning and operation.

More details about the Project Organization, the Domestic Agencies, the IO location and other different aspects of the Organization are available on the website: www.iter.org.

The Iter Organisation intends to place a Design and Build lump sum contract for the Emergency Response Building (B70) using FIDIC suite of contracts, Green Book, under which IO will act as the Employer.

The Construction Contract will be signed between the Employer and the Constructor.

3 Requirements and main functions of the Emergency Response Building (ERB)

The nature of the ITER Facility and the nuclear material housed requires an Emergency Response Building on the ITER Site prior the first plasma phase to provide a suitable and sufficient emergency response against unexpected events.

Current building B06 built in 2012 which is currently housing the Emergency Response Team is not able to meet sufficiently the Host State and good practices requirements. Therefore, a

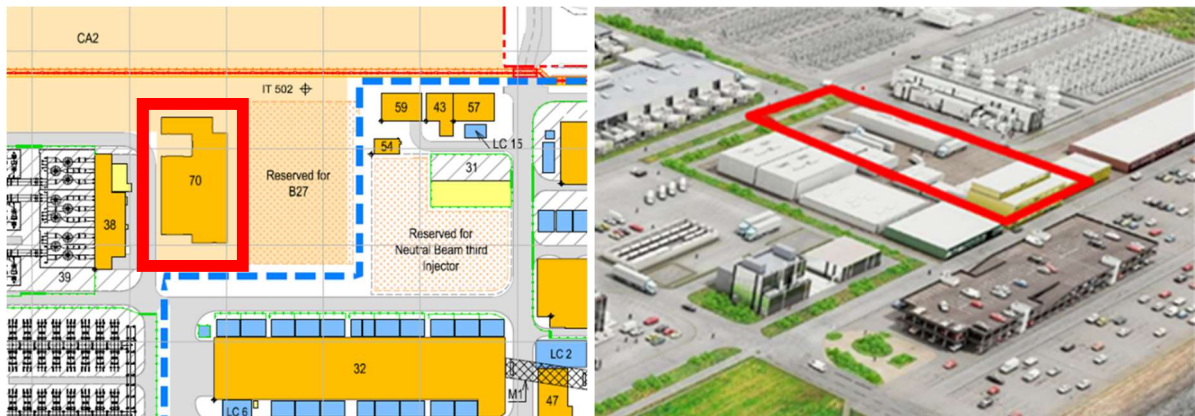
new Emergency Response Building (ERB) shall be built on the ITER platform within the High Security Fence (HSF), which will fulfil strict requirements in term of emergency response and provide an effective communication between the different parties involved in the emergency actions. Building B06 will remain as an outpost of the ERB and it will fulfil the function of infirmary and ambulance located outside of the platform.

ITER is a Nuclear Site (an Installation nucléaire de Base (INB)) and shall fulfil the relevant French regulations related to safety and security. Protection of people and goods requires safety and security, and therefore competent and professionally trained on-site first responders. They need to have an experience and ability to prevent any emergency from escalating into a major disaster while waiting for external services support.

The main purpose of the ERB is to house the personnel, equipment and vehicles of the Response Team.

3.1 Functions of the Emergency Response Building

The main function of the Emergency Response Building is to house security and fire safety first responders and their associated vehicles and equipment. The building will be occupied 24/7.



Picture 1: The ERB location.



Picture 2: Proposed ERB building

The expected functions of the ERB can be summarised as follow:

- Housing emergency first responder's vehicles and equipment;
- Supporting emergency business administration tasks
- Providing welfare facilities and Training Centre;
- Assuring that emergency and response vehicles will be operational even in the case of severe environmental or meteorological conditions;
- Replicating the Command Post in regards to the safety emergency detection systems;
- Providing on duty accommodation for armed security guards and their equipment.
- Providing Information and communicating with the Command post and emergency teams on security and safety topics.
- Ensuring the protection and availability of needed resources and means in all circumstances
- Ensuring an appropriate resistance to Safety hazards and Security threats.
- Ensuring the well-being of its occupants (allow for exercise, training, visits, additional operators in case of crisis, maintenance, etc. ;).
- Providing dedicated parking area for the visitors or Host State vehicles.
- Providing predefined operation autonomy for staff and equipment.

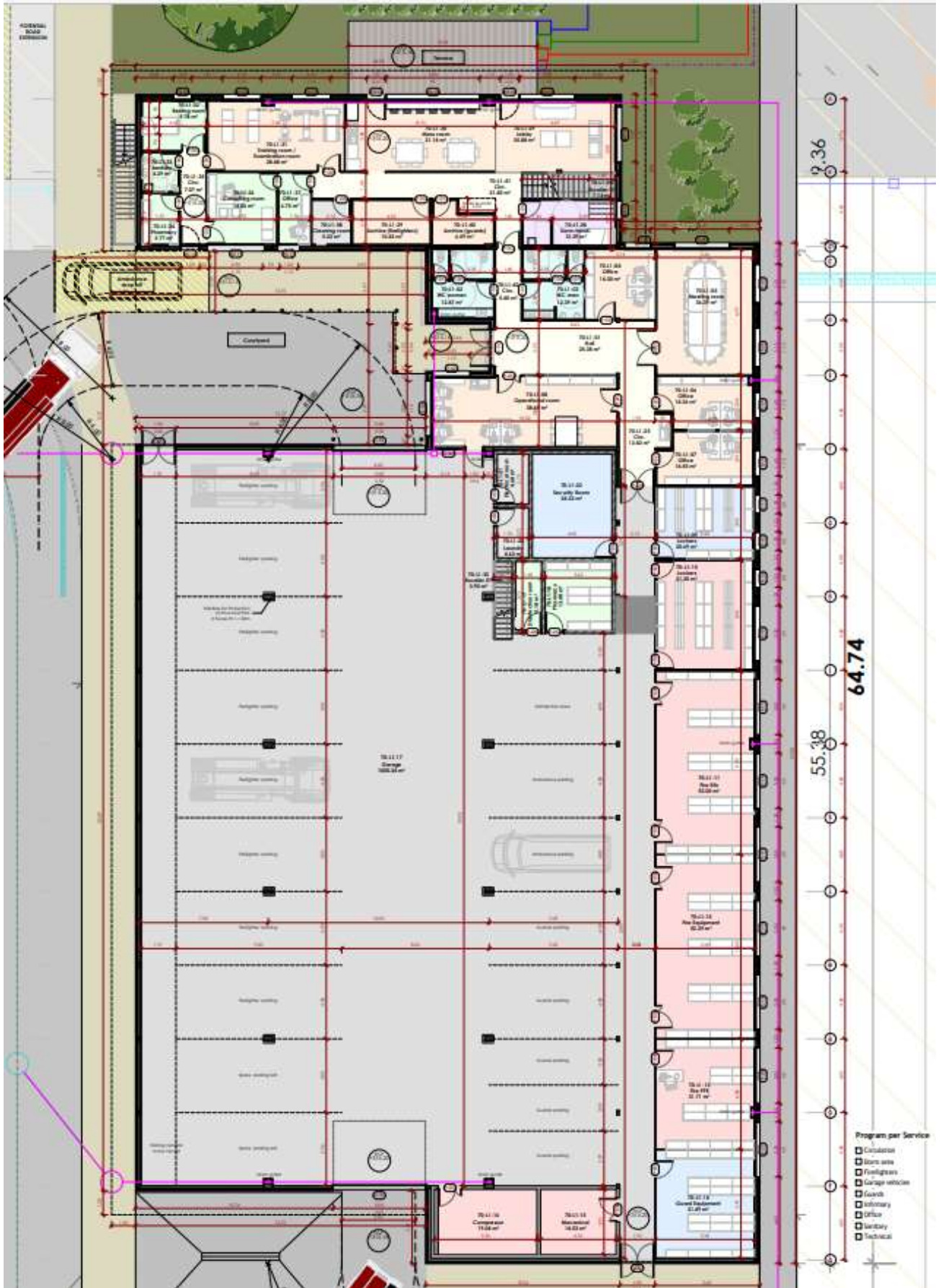
The building will be shared between the emergency, security and infirmary teams.

It will have some dedicated exclusively for each group as well as some common areas.

The building will host the following personnel:

- Security & Safety Brigade and its Leader;
- Site safety Manager
- Site Security Manager
- Standard operators
- The firefighter brigade and its Leader on shift;
- The security guards on shift ;
- A nurse.

All personnel accommodated inside the building will follow different working systems, from normal working hours to shift system on duty.



Picture 3: Proposed ERB building layout

3.2 Layout and the different sections of the ERB

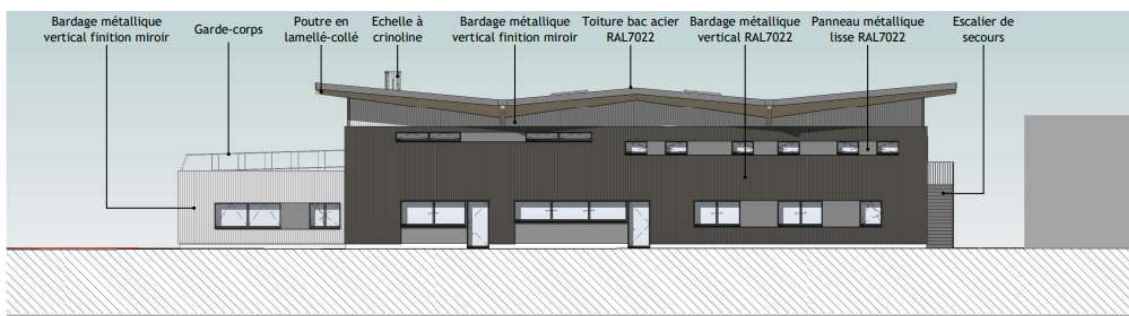
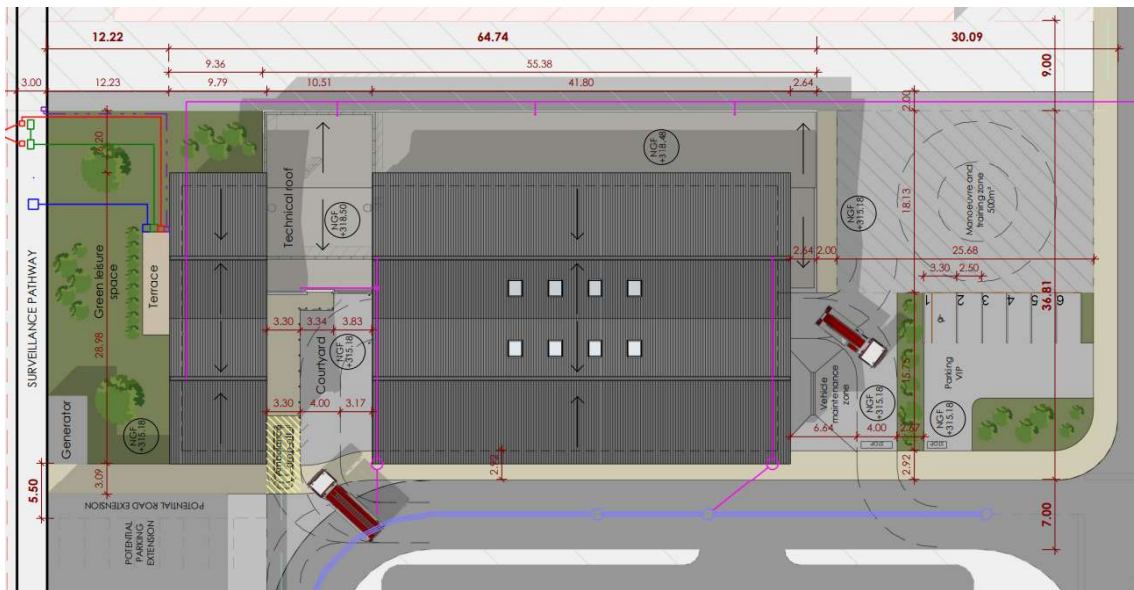
The ERB (B70) stand at the Nord West part of the site inside the High Security Fence zone. It will host security, infirmary and fire services 24/7.

The site layout is composed of:

- Office building and welfare facilities for first responders;
- Manoeuvring area/ outdoor parking
- A garage for emergency vehicles.

The estimated total floor surface of the building is around 2000m².

The building should be in harmony with the structure and design of the B30.



Picture 4: ERB Roof Plan and Elevations

An entrance courtyard gives access to the different programmatic spaces of the B70 emergency response building:

- A vast garage space houses all vehicles, with an interior road serving all the parking slots. The garage is placed in the southern part of the site, where the exit is best connected to the site roads.
- The inhabited spaces occupy two building wings

Opposite the garage, a two-story wing houses the infirmary and living spaces. This higher volume allows for protecting the courtyard and garage entrance door from weather conditions.

Central to the courtyard, a lower building houses the main entrance, all the operational functions and all the additional storage and technical spaces linked to the garage itself.

Structural Design:

Both buildings have timber-framed external walls with metal cladding sitting on concrete slabs, and timber framing supporting steel pan roofs (either apparent on the higher building or supporting the insulation and waterproofing on the lower part).

The first floor in the northern wing is also timber based slab. Only the technical volumes (gunroom, technical rooms, compressor, etc.) require concrete or blockwork walls and slabs to accommodate the fire safety requirements.

In the low volume, a row of solid timber posts, arranged on a 4-meter grid, supports a laminated timber beam, which carries the ridge of the low roof. Above the storage spaces adjoining the garage, solid timber beams arranged on the same grid support the roof. Above the office spaces, load-bearing CLT (cross-laminated timber) walls extended by solid timber beams fit into this grid to support the roof.

The roof is waterproofed by a membrane on a metallic steel tray.

In the two high volumes, two central rows of laminated timber posts follow an 8-meter grid in order to support the steel deck roof by a system of porticos in the central part (12m centre-to-centre), and side half-porticos (7m centre distance + ~1.50m cantilevered). Porticos and half-porticos follow a 4-meter grid. The half-porticos rest on metal posts themselves resting on the timber-frame walls. Solid timber purlins placed approximately every 2 meters support the roof itself.

The first floor of the north wing is a CLT (cross-laminated timber) slab, carried in two spans from facade to facade thanks to a load-bearing CLT wall extended by solid timber beams along the circulation on the ground floor.

The building depends on the French Code du Travail and is classified as a " bâtiment dont le plancher bas du dernier niveau est situé à moins de huit mètres du sol".

4. Scope of Work

The Contractor shall carry out all of the design, supply, installation and construction of the works without restriction and shall leave the installations fully completed and in safe working order.

The Works shall be carried out with the appropriate equipment, complying with the applicable regulations in force at the time of the Works. The Works shall be carried out in full compliance with the Technical Specification and all the drawings and appendices provided at the Call for Tender Phase.

The scope of the Works includes but not limited to:

- The production of the Final Design (Structural, Civil Works and Building Services design)
- Final Design Review Approved
- Execution Design Review Documents
- Execution Design Review Approved
- Detail Construction Design
- Mobilisation and Site Office set up including temporary site services
- The supply of all the building equipment and materials
- Enabling Works (diversion of the maintenance road on the north side, introduction of a road access on the South side; possible adjustment of the underground networks' connections to suit building layout)
- Earthworks, Foundations and underground networks installation (electrical power, low current, fibre optics, potable water, sanitary drainage, industrial and precipitation drainage);
- Supply and installation of waste collection area and bicycle shelter;
- Transport and the assembly on Site (including handling);
- Supply and installation of the conduits and cable trays for power and low currents;
- Supply and installation of the cables, plugs, cabinets, patch panels and all connections;
- HVAC equipment and connections in fluids, power and controls;
- All internal fittings including power supply, fibre optic, security, sanitary facilities, water supply and safety and evacuation route fittings;
- Staircases for access to L1 and the roof;
- Joinery;
- External finishing works (cladding, waterproofing, etc.);
- Supply and installation of the office furniture;
- Commissioning tests;
- Replacement or repair of any defects or non-compliances during the defects notification period and the warranty periods.

The Emergency Response Building footprint falls in the location, which is currently occupied by other building/ services. Therefore, the works include all the adjustments and modifications necessary to suit new structure and current surroundings (earthworks, foundations, roads, services, façades, finishes, landscaping, etc.) and if needed removal of underground obstructions.

5. Schedule Outline

The tentative timetable is as follows:

| Call For Tender | |
|--|------------|
| Call For Tender Launch | 26/06/2023 |
| Call For Tender Submission | 19/09/2023 |
| Call For Tender Evaluation | 24/10/2023 |
| Call For Tender Evaluation Report Approved | 31/10/2023 |
| Contract Award | 29/11/2023 |
| Contract Signature | 04/01/2024 |
| Contract Commencement | |
| Design | |
| Kick Off Meeting | 06/02/2024 |
| Final Design Review Launch | 10/06/2024 |
| Final Design Review Approved | 12/08/2024 |
| Execution Design Review Launch | 11/12/2024 |
| Execution Design Review Approved | 20/02/2025 |
| Construction | |
| Start of Construction (Civil Works) | 21/02/2025 |
| Commissioning | 20/10/2026 |
| Completion | 25/11/2026 |

6. Experience

The Emergency Response Building Contractor shall provide a well-organized, highly skilled team, with in-depth knowledge and experience of the following topics:

| Nuclear civil engineering of complex large scale project | Demonstrable skills and experience | Main features of the ERB facilities |
|--|---|--|
| | Strong links with industry and potential manufactures | The building is not a standard Iter site structure. It has timber-framed external walls with metal cladding sitting on concrete slabs, and timber frame roof supporting steel roofing panels. In order to avoid risk of change during suppliers manufacturing design the Contractor shall review the potential suppliers and advise if the issue arise. |
| | International projects | ITER stakeholders are China, the European Union, India, Japan, Korea, Russia and the United States. It corresponds to 35 different nations. The project language is English and safety documentation to be delivered to the French safety authority shall be in French and English. |
| | Engineering/design | Design and overall integration of: The building is not a standard Iter site structure. It has timber-framed external walls with metal cladding sitting on concrete slabs, and timber frame roof supporting steel roofing panels. - Building systems, e.g. Heating, Ventilation, and Air Conditioning (HVAC), fire protection, electrical distribution, Instrumentation & Control (I&C), CODAC; Mechanical heavy handling, e.g. cranes, doors, trolleys. |
| Safety | French Nuclear Regulator | <p>Nuclear safety and Environmental protection requirements ITER is a basic nuclear facility (in French: “Installation Nucléaire de Base”) identified in France by the number INB-174 and subject to the French Order of 7 February 2012 relating to the general technical regulations applicable to basic nuclear facilities.</p> <p>In the performance of the Contract, it is anticipated that Contractor will perform or participate in so-called “Protection-Important Activities” as defined by the above-mentioned Order. The Contractor shall ensure that suitably qualified and experienced persons carry out these activities.</p> <p>For this purpose, the Contractor makes the necessary provisions for training in order to maintain the required skills and qualifications for his staff and, whenever necessary, to develop them, and in case these activities are carried out by sub-contractors ensures that his sub-contractors make analogue provisions for their own staff.</p> |
| | Safety Report (RPrS) Requirements | <p>In the Preliminary Safety Report (RPrS) the ERB design shall consider intervention of the ITER Rescue team on site bearing in mind the nuclear safety requirements and procedures.</p> <p>Achieve security objectives identified in the Project Requirements (27ZRW8) [9.2 Security].</p> |

| | | |
|---------------|---------------------|--|
| Design | Seismic requirement | The ERB shall be designed to provide the conventional-level of protection against earthquake in accordance with Eurocode-8 and with <i>ITER Structural Design Code for Buildings Part I Design Criteria</i> [3]. Within this context, and in order to limit the damage in case of seismic event, the building shall be classified with the importance class III and shall be designed considering a low ductility class (DCL) according to the Eurocode 8. Soil class assumed to be determined. |
| | Design | not be identified as "hard core component" in the ITER stress test analysis; |

7. Candidature

Participation is open to any legal entity either an individual or a group (consortium) which is established in an ITER Member State. A legal entity cannot participate individually or as a consortium partner in more than one application or tender. A consortium may be a permanent, legally-established grouping or a grouping, which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization.

The consortium groupings shall be presented at the pre-qualification stage. The tenderer's composition cannot be modified without the approval of the ITER Organization after the prequalification.

Legal entities belonging to the same legal grouping are allowed to participate separately if they are able to demonstrate independent technical and financial capacities. Candidates (individual or consortium) must comply with the selection criteria. The IO reserves the right to disregard duplicated reference projects and may exclude such legal entities from the pre-qualification procedure.

8. Appendices

Appendix 1: Architectural Design.