

外部委託業者の募集

References: IO/26/OT/10035512/FMR

“Works Contract for Design and Construction of Worksite 1 office building”

(作業サイト1の事務棟の設計と建設に関する作業契約)

IO 締め切り 2026 年 9 月 7 日(月)

〇はじめに

本事前情報通知 (PIN) は、作業契約の入札授与および実行につながる公開入札調達プロセスの最初のステップです。

〇背景

ITER は平和利用の核融合発電の科学的小および技術的な実現可能性の実証を目的とした、国際共同研究開発プロジェクトです。ITER 機構の 7 つのメンバーは、;欧州連合 (EURATOM が代表)、日本、中華人民共和国、インド、大韓民国、ロシア連邦、および米国です。

ITER の敷地はフランス南東部のブーシュデュローヌ地区にあり、ITER 本社 (HQ) もあるフランス CEA サン・ポール・レ・デュランス に近いところに位置しています。詳細については、ITER のウェブサイト <http://www.iter.org> を参照して下さい。

〇作業範囲

本件入札の範囲は、ITER サイト内に事務棟を設計・建設するターンキー工事契約を締結することです。建屋は2階建てとし、延床面積は約390 m² (オプションの3階を含める場合は585 m²) とします。建屋には約64名分の執務スペース (オプションの3階を含める場合は最大96名分) を設け、各階に32名を収容します。本仕様書に定める要求事項に従い工事を完成させるために必要なすべての活動を本契約範囲に含みます。これには以下の業務が含まれますが、これらに限定されるものではありません。

- ・すべての (下請) 契約者の活動管理
- ・造成・事前土木工事
- ・3階建てを想定した基礎、建屋本体および建築設備 (電力ネットワーク、照明、弱電ネットワーク、防火設備、HVAC [暖房・換気・空調設備] を含む) の設計および建設に関する検討・解析
- ・モジュール建屋、外部階段および建屋17 (B17) との接続用エアロック (SAS) の調達、搬入および設置
- ・屋根防水工事
- ・低圧電力および弱電設備用の配管・ケーブルトレイの調達および設置
- ・ケーブル、コンセント、盤類、パッチパネルおよび関連するすべての接続機器の調達および設置
- ・2階 (L2) へのアクセス用屋内階段の設置
- ・2階 (L2) の非常時避難用外部階段の設置
- ・建具工事
- ・試運転およびコミッショニング試験
- ・瑕疵通知期間および保証期間中に発見された欠陥または不適合の補修・交換

- ・竣工図書の完全かつ包括的な一式の提供

本工事により納入される建屋の設計寿命は10年とします。

業務範囲の詳細については、添付の技術仕様書FX74NX v1.2をご参照ください。

○調達プロセスと目的

目的は、競争入札プロセスを通じて供給契約を落札することです。

この入札のために選択された調達手続きは公開入札手続きと呼ばれます。

オープン入札手順は、次の 4 つの主要なステップで構成されています。

➤ ステップ 1-事前情報通知 (PIN)

事前情報通知は公開入札プロセスの第一段階です。IO は、関心のある候補企業に対し、以下の概略日程に示された日までに担当調達担当官に添付の関心表明フォームで以下の情報を提出し、競争プロセスへの関心を示すよう正式に要請します。

特に注意:

関心のある候補企業は、IO Ariba の電子調達ツール 「IPROC」 に登録してください（まだ登録していない場合）。手順については、

<https://www.iter.org/fr/proc/overview>

を参照してください。

Ariba (IPROC) に登録する際には、お取引先様に最低 1 名の担当者の登録をお願いしま

す。この連絡担当者は、提案依頼書の発行通知を受け取り、必要と思われる場合は入札書類を同僚に転送することができます。

➤ ステップ 2-入札への招待-提案依頼書 (RFP)

PIN の発行から 10 作業日経過後、提案依頼書 (RFP) を「IPROC」に掲載します。この段階では、担当の調達担当者に関心を示し、かつ IPROC に登録している関心のある候補企業は、RFP が公表された旨の通知を受けることができます。その後、RFP に詳述されている入札説明書に従って提案書を作成し、提出します。

このツールに登録されている企業のみが入札に招待されます。

➤ ステップ 3-入札評価プロセス

入札者の提案は、IO の公平な評価委員会によって評価されます。入札者は、技術的範囲に沿って、かつ、RFP に記載された特定の基準に従って作業を実施するために、技術的遵守を証明する詳細を提供しなければなりません。

➤ ステップ 4-契約授与

フレームワークサービス契約は、RFP に記載された評価基準および評価手法に基づき、技術

提案 60%、価格提案 40%の配点による「最良のコストパフォーマンス」に基づいて授与されます。

○概略日程

概略日程は以下の通りです：

マイルストーン	暫定日程
事前指示書（PIN）の発行	2026 年 8 月 26 日
関心表明フォームの提出	2026 年 9 月 7 日
iPROC での提案依頼書の発行	2026 年 9 月 8 日
入札提出	2026 年 9 月 17 日
契約授与	2026 年 10 月 14 日
契約調印	2026 年 11 月

○必要なスキルと経験

受注者は、本仕様書に記載された工事について、ユーロコード、適用される規格・標準、フランス労働法典および適用されるDTU（統一技術文書）に準拠して設計・建設を行うとともに、安全な運用を確保するために業界のベストプラクティスに従わなければなりません。

工事は、フランスおよび欧州で適用される関連する労働安全衛生規則に適合していなければなりません。受注者は、本工事の技術的性質および現場の所在地に適した優れた業界慣行）に従って業務を遂行しなければなりません。

ITERプロジェクトの公式言語は英語であり、すべてのコミュニケーション（口頭および書面）は英語で行われなければなりません。

また、入札参加者は、プロジェクトマネージャーおよび現場責任者の役割を担うことのできる人員を確保しなければならず、これらの人員は英語で十分にコミュニケーションできる必要があります。

○契約期間と実行

ITER機構は、2026年11月頃に本工事契約を発注する予定です。

契約期間は、工事実施期間として119暦日とし、その後に365日間の欠陥通知期間が続きます。

本調達に適用される契約条件は、FIDIC Short Form of Contract, First Edition (1999年初版)（通称「グリーンブック（Green Book）」）です。

これは比較的小規模または比較的単純な建設・土木工事向けに国際コンサルティング・エンジニア連盟（FIDIC）が策定した標準契約約款です。

○候補

参加は、個人またはグループ/コンソーシアムに参加するすべての法人に開放されます。法人とは、法的権利及び義務を有し、ITER 加盟国内に設立された個人、企業又は機構をいいます。ITER 加盟国は欧州連合(EURATOM メンバー)、日本、中華人民共和国、インド共和国、大韓民国、ロシア連邦、アメリカ合衆国です。

法人は、単独で、またはコンソーシアムパートナーとして、同じ契約の複数の申請または入札に参加することはできません。共同事業体は、恒久的な、法的に確立されたグループ又は特定の入札手続のために非公式に構成されたグループとすることができます。

コンソーシアムのすべての構成員(すなわち、リーダーと他のすべてのメンバー)は、ITER 機構に対して連帯して責任を負います。

コンソーシアムとして許可されるために、その点で含まれる法人はコンソーシアムの各メンバーをまとめる権限をもつリーダーをもたなければなりません。このリーダーはコンソーシアムの各目メンバーのために責任を負わなければなりません。

指名されたコンソーシアムのリーダーは、入札段階で、コンソーシアムのメンバーの構成を説明する予定です。その後、候補者の構成は、いかなる変更も ITER 機構に通知することなく変更してはなりません。かかる認可の証拠は、すべてのコンソーシアムメンバーの法的に授権された署名者が署名した委任状の形式で、しかるべき時期に IO に提出しなければなりません。

どのコンソーシアムメンバーも IPROC に登録する必要があります。

【※ 詳しくは添付の英語版技術仕様書「**Works Contract for Design and Construction of Worksite 1 office building**」をご参照ください。】

ITER 公式ウェブ <http://www.iter.org/org/team/adm/proc/overview> からアクセスが可能です。

「核融合エネルギー研究開発部門」の HP : <http://www.fusion.qst.go.jp/ITER/index.html>
では ITER 機構からの各募集 (IO 職員募集、IO 外部委託、IO エキスパート募集) を逐次更新しています。ぜひご確認ください。

イーター国際核融合エネルギー機構からの外部委託 に関心ある企業及び研究機関の募集について

＜ITER 機構から参加極へのレター＞

以下に、外部委託の概要と要求事項が示されています。参加極には、提案された業務に要求される能力を有し、入札すべきと考える企業及び研究機関の連絡先の情報を ITER 機構へ伝えることが求められています。このため、本研究・業務に関心を持たれる企業及び研究機関におかれましては、応募書類の提出要領にしたがって連絡先情報をご提出下さい。

PRIOR INDICATIVE NOTICE (PIN)

OPEN TENDER SUMMARY

IO/26/OT/10035512/FMR

for

Works Contract for Design and Construction of Worksite 1 office building

Abstract

The purpose of this summary is to provide prior notification of the ITER Organization's intention to launch a competitive Open Tender process in the coming weeks. This summary provides some basic information about the ITER Organization, the technical scope for this tender, and details of the Tender process for Works Contract for Design and Construction of Worksite 1 office building.

1 Introduction

This Prior Indicative Notice (PIN) is the first step of an Open Tender Procurement Process leading to the award and execution of a Works Contract.

2 Background

The ITER project is an international research and development project jointly funded by its seven Members being, the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA. ITER is being constructed in Europe at St. Paul–Lez-Durance in southern France, which is also the location of the headquarters (HQ) of the ITER Organization (IO).

For a complete description of the ITER Project, covering both organizational and technical aspects of the Project, visit www.iter.org.

3 Scope of Supply and Services

The scope of this tender is to place a turnkey works contract to perform the design and construction of office accommodation on the ITER Site. The building shall have two storeys and a total internal floor surface of around 390 m² (585m² with the third storey as an option) comprising of offices for approximately 64 people (up to 96 with the third storey as an option), 32 per storey.

The scope includes all activities necessary to complete the Works in accordance with requirements defined in this specification, including but not necessarily limited to:

- Management of all (Sub) Contractor(s) activities;
- Preparatory Earthworks;
- Design and construction studies of the foundations for three storeys, the building and the building services, including the electricity network, lighting, low current networks, fire protection, HVAC;
- Supply, delivery and installation of modular building including external stairs and junction airlock (SAS) to connect the building 17 (B17);
- Roof waterproofing;
- Supply and installation of the conduits and cable trays for low voltage and low currents;
- Supply and installation of the cables, plugs, cabinets, patch panels and all connections;
- Indoor Staircase for access to L2;
- External Staircase for emergency evacuation of L2;
- Joinery;
- Commissioning tests;
- Replacement or repair of any defects or non-compliances during the defects notification period and the warranty periods;
- Provision of a complete and comprehensive set of as-built documentation.

The design life of the buildings delivered under the Works shall be 10 years.

For the full scope of services, please see the attached Technical Specifications, ref. FX74NX v1.2

4 Procurement Process & Objective

The objective is to award a Framework Contract through a competitive bidding process.

The Procurement Procedure selected for this Tender is a so-called **Open Tender** procedure.

The Open Tender procedure is comprised of the following four main steps:

➤ Step 1- Prior Information Notice (PIN)

The PIN is the first stage of the Open Tender process. The IO formally invites interested Suppliers to indicate their interest in the competitive process by returning to the Procurement Officer in charge the attached “Expression of Interest and PIN Acknowledgement” by the date indicated in the procurement timetable below.

Special attention:

Interested tenderers are kindly requested to register in the IO Ariba e-procurement tool called “I-PROC”. You can find all links to proceed along with instruction going to: <https://www.iter.org/fr/proc/overview>.

When registering in Ariba (I-PROC), suppliers are kindly requested to nominate at least one contact person. This contact person will be receiving the notification of publication of the Request for Proposal and will then be able to forward the Tender documents to colleagues if deemed necessary.

➤ Step 2 - Invitation to Tender – Request for Proposal (RFP)

After 20 calendar days of the publication of the PIN, the Request for Proposals (RFP) will be published on our digital tool “I-PROC”. This stage allows interested bidders who have indicated their interest to the Procurement Officer in charge AND who have registered in I-PROC to receive the notification that the RFP is published. They will then prepare and submit their proposals in accordance with the Tender instructions detailed in the RFP.

Only companies registered in the I-PROC tool will be invited to the Tender.

➤ Step 3 – Tender Evaluation Process

Tenderers’ proposals will be evaluated by an impartial evaluation committee of the IO. Tenderers must provide details demonstrating their technical compliance to perform the works in line with the technical scope and in accordance with the particular criteria listed in the RFP.

➤ Step 4 – Contract Award

A Framework Service Contract will be awarded based on lowest priced technically compliant offer according to the evaluation criteria and methodology described in the RFP.

Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN)	28 August 2026
Submission of expression of interest form	7 September 2026
Request for Proposal launched on I-PROC	8 September 2026
Site Visit – To be confirmed	17 September 2026
Tender Submission	14 October 2026
Contract Award	November 2026

Contract Signature	November 2026
Taking Over	Q1 2027

5 Quality Assurance Requirements

The Candidate shall have ISO 9001 (or recognized equivalent) else shall submit to the IO for approval its “Quality Assurance Program” in the Tender Submission for the IO’s review and acceptance.

6 Contract Duration and Execution

The ITER Organization shall award the Works Contract around November 2026. The contract duration shall be 119 calendar days for the works followed by a Defect Notifications Period of 365 days.

The conditions of Contract that will apply to this procurement is the FIDIC Short Form of Contract, First Edition – 1st edition 1999 (called: Green Book).

7 Experience

The Tenderer shall design and construct the herein described Works to comply with the Eurocodes, the applicable norms & standards, French Labour Codes and applicable DTU as well as follow the best industry practice to ensure their safe operation. The Works shall be compliant with the relevant health and safety regulations applicable in France and Europe.

The Tenderer shall undertake his activities in accordance with good industry practice relevant the technical nature of the Works and to the location of the Site

The official language of the ITER Project is English. All communication shall be in the English language (spoken and written). The Candidate shall ensure that he has the personnel who can carry out the roles of the Project Manager(s) and on-Site Manager(s) who will be proficient users of the English language.

8 Candidature

Participation is open to all legal entities participating either individually or in a grouping/consortium. A legal entity is an individual, company, or organization that has legal rights and obligations and is established within an ITER Member State, being: the European Union (represented by EURATOM), Japan, the People’s Republic of China, India, the Republic of Korea, the Russian Federation and the USA.

Legal entities cannot participate individually or as a consortium partner in more than one application or Tender of the same contract. 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 IO.

In order for a consortium to be acceptable, the individual legal entities included therein shall have nominated a leader with authority to bind each member of the consortium, and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of each member of the consortium.

It is expected that the designated consortium leader will explain the composition of the consortium members in its offer. Following this, the Candidate’s composition must not be modified without notifying the IO of any changes. Evidence of any such authorisation shall be submitted to the IO in due course in the form of a power of attorney signed by legally authorised signatories of all the consortium members.

All consortium members shall be registered in I-PROC.

9 Sub-contracting Rules

Subcontracting is limited to 40 % of the contract value and up to level 2.

All sub-contractors who will be taken on by the Contractor shall be declared with the tender submission in IPROC. Each sub-contractor will be required to complete and sign forms including technical and administrative information which shall be submitted to the IO by the tenderer as part of its tender.

All declared sub-contractors must be established within an ITER Member State in order to participate.

The IO reserves the right to approve (or disapprove) any sub-contractor which was not notified in the tender and request a copy of the sub-contracting agreement between the tenderer and its subcontractor(s). Rules on sub-contracting are indicated in the RFP itself.

Technical Specifications (In-Cash Procurement)

Technical Specifications for the Design and Construction of Worksite 1 office building

This document provides the Technical Specifications for the Design and Construction of Worksite 1 office building

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1 Purpose

The purpose of this technical specification is:

- To provide the technical requirements for the design and construction of a temporary office building at the ITER Site; The building shall have two storeys (with the option to add a third one) and a total internal floor surface of around 390 m² (585m² with the third storey) comprising of offices for approximately 64 people (up to 96 with the third storey), 32 per storey.
- To specify applicable norms and regulations that the Contractor shall respect in order to meet the project performance requirements of the ITER Organization.

2 Scope

The Contractor shall carry out all of the design, supply, installation and construction of the works without restriction; therefore, the Contractor shall leave the installations in a perfectly completed and 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 scope includes all activities necessary to complete the Works in accordance with requirements defined in this specification, including but not necessarily limited to:

- Management of all (Sub) Contractor(s) activities.
- Preparatory earthworks;
- Design and construction studies of the foundations for three storeys, the building and the building services, including the electricity network, lighting, low current networks, fire protection, HVAC;
- Supply and installation of a modular building including external stairs and junction airlock to connect to Building 17 (B17).
- Roof waterproofing;
- Supply and installation of the conduits and cable trays for low voltage and low currents;
- Supply and installation of the cables, plugs, cabinets, patch panels and all connections;
- Indoor staircase for access to and emergency evacuation of Level 2;
- External staircase for emergency evacuation of Level 2;
- Joinery;
- Commissioning tests;
- Provision of a complete and comprehensive set of as-built documentation.

The following items are not included in the scope of the Contractor:

- Removal of the barracks and other temporary facilities from the location of the Works;
- Provision of electrical supply to the building;
- Wi-Fi network;
- Fire detection system;
- Public address system;
- Access control system;
- Security camera system;

- Supply and installation of wayfinder signage;
- Supply and installation of furniture.

3 Acronyms and Definitions

The following terms and acronyms may be found in this document:

A.E.V.	French: <i>Le classement Air - Eau - Vent</i> / Air - Water - Wind classification
AIPR	French: <i>Autorisation d'intervention à proximité des réseaux</i> / English: Certification to work in the vicinity of networks.
APSAD	(Association Plénière des Sociétés d'Assurance Dommages - <i>Plenary Association of Damage Insurance Companies</i>);
BAES	French: <i>Bloc Autonome Eclairage de Sécurité</i> / English: Block Autonomous Security Lighting.
CRO	Contract Responsible Officer
CSTB	French: <i>Centre Scientifique et Technique du Bâtiment</i>
DESP	French: <i>Directive Equipments Sous Pression</i> / English: Pressure Equipment Directive.
DICT	French: <i>Déclaration d'Intention de Commencement de Travaux</i>
DN	French: <i>Diamètre nominal (intérieur)</i> / Nominal diameter (always interior).
EIC	Environmental Important Component
EOTA	French: <i>L'Organisation Européenne pour l'Agrément Technique</i>
FDS	Fire Detection System
FFL	Finished Floor Level
GNT	Gravel Non-Treated
HDMI	High-Definition Multimedia Interface
HVAC	Heating Ventilation and Air-Conditioning
HSPC	Health & Safety Protection Coordinator
HP	Hold Point
IDM	ITER Document Management System
IPEG	ITER Platform Earthing Gird Protection coordinator
HVAC	Heating, Ventilation and Air Conditioning
HV	High Voltage
IO	The ITER Organization
LC	Low Current
LV	Low Voltage (power lines of 400V and below).
LOTO	Lock-Out Tag-Out permit
MoM	Minutes of Meeting
MV	Medium Voltage ($\geq 15\text{kV}$)
NCR	Non-Conformance Report
(NF) DTU	(French Norm) Unified Technical Documents
NP	Notification Point
PAS	Public Address System

PDWS	Precipitation Drainage Water System
PEHD	High-density polyethylene.
PF/EP	French: <i>Permis de Fouille</i> / English : Excavation Permit.
PIA	Protection Important Activity
PIC	Protection Important Class
PLC	Programmable Logic Controller
PPE	Personal Protective Equipment
PPSPS	French: <i>Plan Particular de Sécurité et de Protection de la Santé</i> / English : Individual Health Protection and Safety Plan.
PRE	Environmental Respect Plan
PTW	Permit to Work
PWD	Precipitation Water Drainage
QA	Quality Assurance
RFI	Request For Information
RT2005	Réglementation Thermique 2005 / <i>French regulation related to the thermal insulation</i> ;
SAF	Subcontractor Acceptance Form
Site	Places provided by the ITER Organization where the Works are to be executed, and any other places specified in the contract as forming part of the Site.
SLAT	Regulated power supply.
SSI	French: <i>Système de sécurité incendie</i> / English: Fire safety system.
TGBT	French: <i>Tableau General Basse Tension</i> / English: Main Low Voltage Distribution Board
TNS	Terra Neutral Separate
TPC	French: <i>Tube de Protection des Cables</i> / English: Duct to protect cable.
UPS	An Uninterruptible Power Supply (a battery back-up)
VGA	Video Graphics Array
Works	The work and design to be executed by the Contractor, including temporary work and any variation(s), under the Contract.

4 Applicable documents and Codes and Standards

4.1 Applicable Documents

- [1] Conceptual design of Worksite 1 office building (ITER_D_GMNWFH)
- [2] Chemical Safety Management Tool - User Manual (ITER_D_W6EREY)
- [3] CAD instructions for companies (ITER_D_9PNNM4)
- [4] Permit to Work Procedure (ITER_D_UBET39)
- [5] Access procedure (ITER_D_S3893D)
- [6] ITER Internal Regulations (ITER_D_27WDZW)
- [7] PGCSPS Volume 1 – Health and Safety General Coordination Plan for the construction of ITER Project (ITER_D_T6V4RP);
- [8] Alert procedure (ITER_D_7LB8NY)
- [9] Environmental Management Plan (ITER_D_97W4PN)

- [10] Environmental requirements (ITER_D_97WRFP)
- [11] Global ITER Worksite Synthesis Drawing (ITER_D_2UFTW7)
- [12] In-Cash Procurement Technical and Management Documentation Exchange and Storage Procedure (ITER_D_G8UMB3)
- [13] ITER Policy on Safety, Security and Environment Protection Management (ITER_D_43UJN7)
- [14] Housekeeping instruction (ITER_D_XJKR3R)
- [15] Daughter PTW procedure for IO Areas under CNST/SIM coordination (ITER_D_2BW3ZV)
- [16] ITER Smoking policy (ITER_D_B7QCU8)
- [17] Lifting Instruction (ITER_D_YJ9MBD)
- [18] Work at Height Instruction (ITER_D_Y5X8R7)
- [19] ITER site meteorology (ITER_D_2UT36S)
- [20] ITER Procurement Quality Requirements (ITER_D_22MFG4)
- [21] Requirements for Producing a Quality Plan (ITER_D_22MFMW)
- [22] Procedure for management of Nonconformity (ITER_D_22F53X)
- [23] Procedure for the management of Deviation Request (ITER_D_2LZJHB)
- [24] Quality Classification Determination (ITER D 24VQES)
- [25] Appropriation phase - Equipment information required (ITER_D_25T7KP)
- [26] Subcontractor Acceptance Form (SAF) - template (ITER_D_4LXSY)
- [27] As built package of the area
- [28] Coordination drawing –Temporary Networks Approximate Layout
- [29] OHS events follow-up procedure (ITER_D_2CTZTP)

4.2 **Applicable codes and standards**

In performing the contract, the Contractor shall comply with applicable laws and standards, in particular those listed below.

- French decrees, laws and circulars;
- French Labour Code;
- The Construction Code (“Code de la construction”);
- The Town and Planning Code (“Code de l’urbanisme”);
- The Public Health Code (“Code de la santé publique”);
- Regulations applicable to the building accessibility for disabled persons (applicable only to the ground floor);
- The Highway and Roads Code (“Code de la route”);
- The Environmental Code (“Code de l’environnement”);
- The decree of 8 January 1965, relating to the protection measures applicable to the organisations whose personnel carries out building work;
- The Water Law (“Loi sur l’eau”);
- Prefectural orders 15-2007 and 45-2009;
- EU regulation 305/2011 concerning construction products and the CE requirements.

The Contractor shall comply with French design and construction standards or with European design and construction standards if such European standards exist and they are broadly equivalent to the French standards.

Unified Technical Documents (DTUs) and NF DTU specifications and calculation rules shall be considered as good industry practice and be applied by the Contractor.

In case the Contractor's manufacturing process is not compliant with the DTU specifications, it shall provide a European (or French) technical assessment from EOTA (or CSTB) it complies to.

The Contractor shall comply with the machinery directive 2006/42/CE. The equipment, when required, shall be CE marked.

For all products and materials subject to quality standards, the Contractor must use only the products and materials that comply with said standards and be able to present evidence of compliance on the IO's request.

Note: The building is considered to be a temporary facility directly necessary for the construction of ITER. Therefore, in accordance with R421-5 of French Urban Planning Code, it will be exempt from building permit.

5 Work Description

5.1 Location

This building will be located on the southeast side of Building 17 (B17).

This surface is currently a worksite area covered by non-treated compacted gravel (GNT).

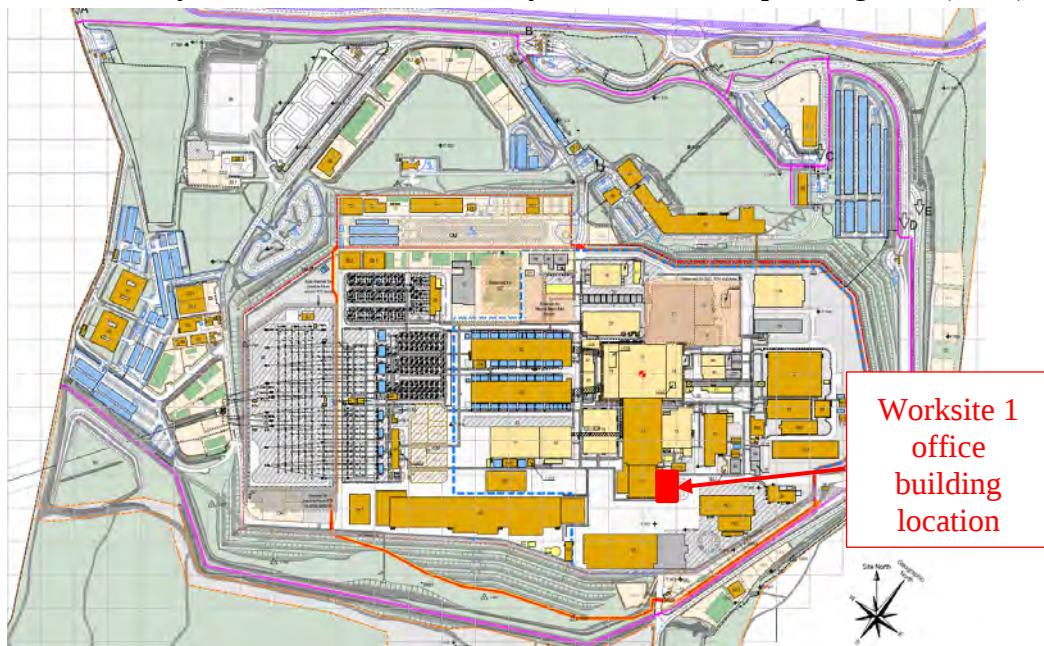


Figure 1 – Location of the Works

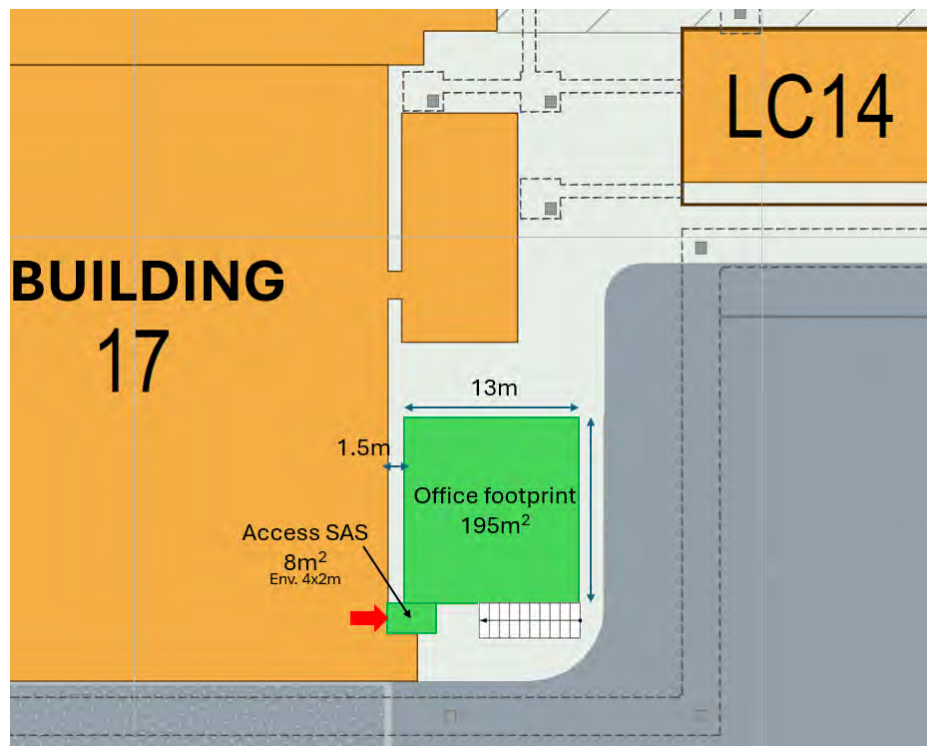


Figure 2 – New building footprint

5.2 General requirements for the Works

The Contractor shall undertake his activities in accordance with good industry practice relevant to the technical nature of the Works and to the location of the Site. His performance shall include all supplies and services necessary for the Works (including specialized plant, tools, qualified labour, power supply, transportation and handling means, temporary works, etc.).

All installations delivered under this Contract shall be undertaken in accordance with manufacturers' recommendations.

The design life of the building delivered under the Works shall be 10 years, and, its Importance category is II.

The building and its foundation shall be designed to withstand the local climatic conditions e.g. earthquake, snow and wind according to the Eurocodes (mainly 0, 1, 2 and 8). The foundation shall be directly designed and sized for three storeys of modules.

The building structure shall be designed to be structurally independent from the existing Building 17.

The building shall be secured and durable to protect the ITER activity against the risk of damage, theft, or loss.

The Contractor shall obtain IO's approval of their design before commencing the Works on the ITER Site.

The construction of the building shall be organized such as to minimize the impact on the surrounding areas.

The Contractor shall aim to re-use the removed/recovered materials on the project as much as possible. The Contractor is responsible for an appropriate sorting and evacuation of all old, unused and temporary materials generated during the Works and their disposal from the Site to an authorized landfill.

The Contractor shall provide all the control tests reports and results required at the end of the Works. All statutory initial inspections shall be performed by a third party (independent checker),

validated in advance by the IO. These records shall form a part of the as-built documentation submitted on completion of the Works.

5.3 **Functional requirements**

5.3.1 *Building design*

The Contractor shall develop the construction design of the offices building to meet the needs specified below and taking into account the conceptual design provided in attachment [1].

The building will be designed to accommodate at least 64 workstations which will be spread over 2 levels.

In the offices, the minimum floor space per workstation shall be 6.5 m² net.

The drawing [1] is a basis of design. It shall be adjusted (the size and the arrangement of the rooms, location of the building on the available surface) in order to optimize space and cost. For this purpose, the office arrangement can be slightly modified in terms of number and capacity if necessary, but, the location of the building footprint on the existing land cannot.

The proposed configuration shall allow an easy implementation of partition walls (structure, openings, outlets, HVAC...).

5.3.2 *Building use*

The building shall provide the following rooms [1]:

- Ground floor (32 desks):
 - o Closed and isolated connection airlock (SAS) to Building 17 (B17) – Entrance of the office building;
 - o 1 closed utilities room for building services (LV and LC);
 - o 1 open space to accommodate up to 32 workstations;
 - o 1 indoor staircase to access L2 and associated passageways.
- First floor (32 desks):
 - o 1 closed utilities room for building services (LV and LC);
 - o 1 open space to accommodate up to 32 persons;
 - o 1 indoor staircase to access L1 and associated passageways.

5.3.3 *Building location*

The distance between the building and the existing Building 17 (B17) shall be 1 m minimum to allow sufficient access and space for temporary aerial networks in between the two facades.

The east facade of the building shall not clash with the cooling water pipes existing from chiller production units on the northeast side.

5.3.4 *Passage ways in the building*

The number, width, design and location of passage ways and exits shall be in compliance with provisions from the French Labour Code safety section. The distance to reach stairways from elevated floors shall not exceed 40 meters.

5.3.5 *Interior staircase*

Interior steel staircases, designed in compliance with the French labour Code, shall be provided and set up for accessing level L2.

The steps shall be equipped with non-slip treads.

5.3.6 *Accessibility*

The adapted access for disabled persons is required on the ground floor for the B17 evacuation only.

Approach ramps complying with the standards shall be installed outside as necessary.

5.3.1 *Building entrances*

The main entrance shall be located on the southwest corner of the building. People will access only from Building 17, passing through the airlock (SAS).

The other building doors going directly to the exterior are reserved for emergency evacuation only and shall be equipped as such.

A double door facing directly the exit door of Building 17 shall be installed in the airlock to allow direct emergency evacuation for the people working in Building 17.

All ground-floor windows shall be equipped with anti-intrusion bars to prevent unauthorized access to the building.

5.3.2 *Exterior staircase*

The external staircase shall be located on the south east side of the building. It shall allow the emergency evacuation of Level 2. Its usable width shall be compliant with the French labour code related to passage units for evacuation in accordance to the number of person using Level 2, without being less than 1500 mm.

The staircase shall meet the applicable norms and standards, in particular NF E85-015 and EN ISO 14122-3. The Blondel's formula shall be used for the calculation of the stairs dimensions considering that the step tread shall be between 280 mm – 320 mm and the step riser/height shall not exceed 160mm. The usable width of the stairs shall be minimum 1500 mm. The service loads to be considered in the staircase design is minimum 350 kg/m².

The staircase shall have a dedicated foundation.

The steel structure and its protection (treatment and painting) shall be adapted to the external conditions.

Handrails shall be installed on both sides of the staircase.

The steps shall be equipped with non-slip treads.

5.3.3 *Roof waterproofing*

The roof shall be perfectly waterproof.

In case of modular building, particular attention shall be brought to the junctions of each of the units, commonly affected by leaks.

Waterproofing tests prior to Taking-Over will be required.

The following measures shall be taken to prevent water ingress in the building:

- Downspouts dimensioned such that loading of the roof is limited in case of storm;
- The presence overflows, sufficient in number and size;
- Supply and installation of strainers.

At the bottom of the downspouts, a common concrete gutter (type CC1) shall be installed to collect each rows and direct the water to South or East side of the building.

5.3.4 *Electrical installations*

Electrical installations shall be in conformity with the French standard NFC 15100.

5.3.5 *Emergency lighting*

The buildings shall be equipped with a fixed installation of emergency lighting (autonomous emergency lighting) in corridors and staircases, in accordance with the decree of 26 February 2003 relating to the circuits and installations of safety and circular DRT n° 2003_07 of 2 April 2003 concerning the application of the decree of 26 February 2003.

5.3.6 *Heating - Ventilation - Insulation*

The installations shall be in conformity with the French Labour Code and RT2005 as a minimum. All the external HVAC units shall be fixed to the bottom part of the façades at a maximum height of 50 cm from the ground. No units on the roof or on the upper façade of the building are allowed.

5.3.7 *Safety systems*

The design of the building shall be compliant with the labour code.

The corridors, emergency exits and stairs shall be dimensioned accordingly.

5.3.7.1 *Audible alarm of evacuation (PAS)*

Out of the Contractor's scope.

5.3.7.2 *Fire extinguishers*

Sufficient extinguishers shall be installed according to the APSAD R4 rules.

The extinguisher types shall be adapted to the type of fire risk.

5.3.7.3 *Fire instructions*

Emergency evacuation instructions shall be clearly displayed on each floor level, near each exit and according to NF X08-070.

The instructions shall be bilingual (English and French) and based on information provided by the ITER Organization

5.3.7.4 *Lightning protection*

The Contractor shall ensure a proper equipotentiality between the building structure, the modules (in case of modular construction), the equipment and the ground.

The Contractor is responsible to procure, install and connect copper cables as per their design.

5.4 **Building foundations**

The Contractor is fully responsible for the design of the foundations.

The foundation design shall be duly justified based on the geotechnical and physical characteristics of the area. Preliminary geotechnical information of the area is provided in section 6.1.1 and in appendices [27] and [28]. If necessary, the Contractor shall perform the appropriate geotechnical mission(s) to validate its hypothesis and justify its calculation.

All foundations shall be designed and constructed below the frost depth applicable at the project location and in compliance with the relevant codes, standards, and regulations.

The scope of the foundation works shall include, without limitation, the building foundations, the foundations of external staircase and the slab supporting the airlock (SAS). The foundations

shall be designed and sized for a three-storey-building (in anticipation of the construction of a third storey even if the option 2 is not selected).

For the modular construction, the Contractor shall embed in the foundation the necessary steel plates to allow a proper connection and rigidity between modules and the foundation to prevent any displacement.

The foundation design shall take into account the presence of the existing reinforced concrete slab and networks – refer to [27]. Subject to verification of its suitability and load-bearing capacity, the Contractor may use the slab for the anchoring or fixation of structural and non-structural elements, where required.

Design information relating to the existing reinforced concrete slab is provided in Appendices [27].

To manage rainwater collected through the multiple downpipes and in the absence of a buried stormwater drainage network, the Contractor shall incorporate open concrete drainage channels (Type CC1) into the foundation design. These channels shall collect runoff from each row of downpipes and convey the water beyond the foundation footprint towards the south and/or east side of the site.

In addition, a geotextile membrane with a minimum mass of 200 g/m², overlain by a 100 mm layer of gravel, shall be installed throughout the foundation footprint.

Where required by the foundation design, adequate natural ventilation of the subfloor void shall be incorporated into the foundation system. During the execution of the foundations, the Contractor shall implement all the necessary measures to:

- Ensure the stability of the embankments.
- Prevent any settlement or collapse of the existing structures and utilities.
- Reinforce the existing structures if and where necessary (including during the temporary works stage).
- Manage the evacuation of rainwater using a dedicated temporary network - it shall be composed of a pump and settlement tank.
- Always keep a safe access for pedestrians and vehicles.
- Implement a proper fencing off for the working area / excavation zone in accordance to the progress and the risk related to the Works.

Any ground movement linked with the excavations and modelling of the existing platform shall remain within the Site boundaries. The surplus materials shall be evacuated by the Contractor from the ITER site to a dedicated deposit area.

The cleaning of roads around the Site shall be at the expense of the Contractor based on the weather conditions, the roads cleanliness and the frequency of their use. During dry periods, the Contractor shall implement measures to limit the spreading of dust.

Note: The main power line to supply the new building will arrive by electrical buried ducts on the North East side of the building.

5.5 Requirements for modular construction

5.5.1 Principles of construction

The building modules shall be assembled in array.

The choice of the structure is at the responsibility of the Contractor, respecting the following conditions:

- Construction durability (10 year guarantee);
- Uniform metallic cladding;
- Sufficient soundproofing and thermal insulation of the building shell.

Whatever the system chosen, it must have received technical approval from the building inspection body (according to French Standard NF P 03-100) concerning the solidity of the structure, in particular taking into account climatic and seismic loads.

The units shall also comply with the health and safety conditions for maintenance operations.

The colours of all elements constituting the visible parts of the building will be subject to prior approval of the ITER Organization.

5.5.2 Installation of the modules

The conditions of delivery and installation of the modules shall be evaluated by the Contractor.

The services of the Contractor include in particular:

- The transport of the modules to the Site;
- Unloading and handling to final destination by an independent mobile crane, for which each module shall have embed lifting/handling arrangements within its structures. The delivery and lifting shall be done only from the south side of the working area due to site constraints;
- Methods shall be adapted to the presence of B17 building on the west side of the office building with the impossibility to access with any cherry picker there;
- All protection necessary during the installation of these modules.

5.6 Structure of the building

The buildings are of mixed composition: steel frame and sandwich panel covering or double-layer cladding.

5.6.1 Frame

The building frame shall comply with load stress and stability requirements of the regulations in force for a two-floor building.

A detailed technical note showing the characteristics of the frame shall be provided.

5.6.2 Floors

Waterproof structure and panels with sufficient bearing capacity defined by the Eurocodes and adapted to the housed equipment.

The flooring rigidity shall be ensured.

The floor covering shall be of thermoplastic type, equipped with matching skirting and compliant at least with the U2P2E2C2 classification in all rooms. It shall be built with fungistatic and bacteriostatic sanitized treatments.

5.6.3 Cover

The cover shall be made of galvanized steel-profiled panels.

All metallic parts of sealing (flaps, raised...) shall be included for a perfect completion. The connection elements, with the structure and the facades, shall be particularly neat, including – in case of modular construction – the connection parts between modules horizontally as well as vertically (including the downspouts).

The roofing shall be designed for maintenance access.

5.6.4 Ceilings

The height of the ceilings with regards to the finished floor shall not be less than 2.4 m.

5.6.5 Exterior walls

The exterior walls are composed of self-supporting sandwich panels with insulation and integrated joineries or double-layer cladding:

- Outside face: galvanized and shop-painted steel sheets;
- Interior face: shop-painted steel sheets.

Assembly of the exterior wall panels by a system for complete flatness of the facade.

5.7 Access airlock (SAS)

The Contractor shall design and build an access airlock (SAS) connected to the existing door of Building 17 at the southwest corner of the office building. The airlock (SAS) shall provide a suitably clean environment, protected from external conditions.

The airlock shall meet the following requirements:

- Have minimum dimensions: 4 m long x 2 m wide x 2.5 m usable height.
- The foundations shall be designed respecting requirements of Section 5.4.
- The airlock shall be air- and watertight.
- The shelter shall be closed on three sides by insulated cladding adapted to the climatic conditions. The main structure shall be adapted and protected against external weather conditions. No fire resistance is requested.
- The roof shall prevent water ingress and shall have one slope directed away from Building 17 wall. A proper waterproofing junction shall be performed between Building 17 and the airlock roof.
- The entrance to the office shall be via a closed staircase, as shown in reference document [1].
- In front the B17 emergency door, in the East wall of the airlock, an emergency door shall be installed, respecting the requirements given in Section 5.9 and sized to allow the safe evacuation of all person working in Building 17 and in the office building.
- The airlock access shall be designed to prevent any corrosion and to withstand the outdoor climatic condition.
- The airlock structure shall be connected to the earthing system.
- The indoor floor shall be made of a reinforced concrete slab (*Note: It could be constructed directly on the existing platform*) with a slope of 0.5% away from Building 17 and have a smooth finishing. The floor slab bearing capacity shall be 350 kg/m² minimum. There

shall be no step in front of the emergency door of Building 17 (between the B17 indoor and airlock external floor).

- The airlock shall not impede the full opening of the B17 emergency door.
- Concrete steps or ramps are allowed to enter the office building, respecting the Blondel law and the requirements of Section 5.3.2.
- The service penetrations for any pipes and cable in between the office and the airlock shall be watertight and airtight.
- The airlock shall be equipped with services described in Sections 5.15, 5.16 and 5.17.

5.8 External windows

The Contractor shall supply and install external windows following the below main requirements:

- PVC or aluminium windows with double glazed insulation compliant with RT2005;
- Sliding windows – for the ground floor all the windows shall be equipped with metallic bares to avoid any entrance/ exit by windows;
- Rolling shutters PVC, isolated, with crank command. The aluminium trunk shall be insulated and invisible from the outside;
- Windows dimensions and location to be validated by the ITER Organization;
- Ventilation rulers built-in;
- Windows selection shall follows the A.E.V. classification in accordance to the region, the site and the exposition.

The size and the number of windows shall comply with the NF X 35-102 and the circular of 11 April 1994, especially:

- The glazed surface representing at least $\frac{1}{4}$ of the largest external wall;
- No workstation in a zone located at more than 6 m from a window (considered as “blind rooms”).

5.9 External pedestrian doors

The buildings shall be equipped with the insulated doors to allow the ingress and exit of the pedestrians in the building; they shall have all the function of emergency exits. The quantity, size and locations of the pedestrian doors (emergency exits) shall be designed by the Contractor to be compliant with the applicable norms and regulations as well as the French Labour Code. The units of passage shall be designed regarding number of people and implemented strictly on site.

The required minimum number of the pedestrian doors and their proposed positions are given in [1]:

- One (1) emergency double-leaf door, located as close as practicable to the existing double-leaf door of Building 17, to provide the most direct evacuation route from Building 17. The door dimensions shall be identical to those of the existing Building 17 door.
- One (1) emergency door for Level 1 in the southeast corner;
- One (1) emergency door for Level 2 in the southeast corner.

The double-leaf pedestrian doors shall meet the requirements listed below:

- Design and devices adapted for intense use;

- Each door shall be equipped with a door closer and door stopper (located as far as possible from the hinge side to avoid an arm lever effect).
- Key hole for European cylinder: The locks to be provided by the Contractor after validation of the key chart by the IO (Bricard brand);
- Thermal insulation shall be designed in accordance with RT2005 and in line with the defined indoor conditions;
- Fixing devices shall be in steel and base plates in galvanised steel;
- Doors shall be equipped with a strip seal to prevent the ingress of water except for the indoor doors. The strip seal shall be compatible with / allow disabled access. The door seal shall avoid tripping hazard. If not possible, appropriate safety marking and signage shall be provided;
- An autonomous emergency-lighting unit shall be installed minimum 10 cm above each door frame.

5.10 Fire extinguishers

The Contractor shall define the type, number and location of the fire extinguishers according to APSAD R4 regulations. A dedicated fire protection mission shall be performed by the Contractor at the design stage to confirm the building design and to position the devices appropriately. The Contractor shall take into account the investment protection aspect in the definition of extinguishing agent (i.e. CO₂ preferred to the powder ABC where possible according to the risks). Provision and distribution of the fire extinguishers shall be in the scope of the Contractor. The signalization panel of each fire extinguisher shall be fluorescent. All fire extinguishers shall be equipped with the identification plates providing the key details (unique ID number, type, size and date of fabrication as a minimum).

5.11 Fire instructions

The building shall be furnished with intervention and evacuation plans in accordance with the French standard NF X08-070. These plans shall be bilingual (English and French).

The safety register shall be provided and installed by the Contractor (the location to be confirmed by the IO at the design phase).

An emergency stop button to switch off the electricity inside the building shall be available next to the intervention plan.

5.12 Smoke exhaust system

The building shall be equipped with an adequate smoke exhaust system for the inner staircase fitting for purpose of an office building. The systems shall be compliant with all statutory requirements and the French Labour Code, in particular the Decree No. 92-332 of the 31st of March 1992.

The smoke exhaust system shall follow the below requirements:

- Smoke exhaust hatches shall:
 - o Be properly thermally insulated to avoid any condensation on their surfaces;
 - o Be installed with a fixed steel grating (1200 Joules resistant);
 - o Be equipped with individual sensors indicating their position (Open/Closed);
 - o Have the opening panel made of translucent polycarbonate of 20 mm minimum thickness;

- o Open automatically in the situation when the indoor temperature reaches 140°C at the roof level.
- Smoke exhaust control panel shall be manual type.

The location of the smoke exhaust panel in the building shall be at the main entrance next to the intervention plan, its exact location shall be agreed with the IO during the design stage.

The final site acceptance test for the smoke exhaust system shall be performed with the IO and the concerned authority to ensure that the system works properly and meets the above requirements.

5.13 **Lightning protection**

The Contractor shall provide an adequate lightning protection to the building, to their equipment (cubicles, HVAC system...) and the electrical supply and controls installed under the Works.

The design of the lightning protection systems shall provide a safe environment for personnel and avoid electrical hazards.

The Contractor shall take into consideration the requirements listed in Section 5.5 above for the design and implementation of the extended lightning and earthing protection networks.

5.14 **Internal arrangement**

5.14.1 *Interior walls*

The interior walls shall follow the below requirements:

- The interior partitions shall be designed to provide a minimum of 42 dB (A),
- The wall's claddings shall be shock resistant and easily cleanable,
- For the indoor utilities rooms, the walls shall be fire resistant 1 hour: EI60.

Internal partitioning walls are expected:

- Around the stairs to create a staircase isolating the noise from the two levels,
- On the north East corner of the building, one per level, to create an utilities room for LV & LC networks. Minimum size of the room: 2.5m x 1.5m.

5.14.2 *Internal pedestrian doors*

The buildings shall be equipped with the internal pedestrian doors.

The quantity and locations of the pedestrian doors shall be designed by the Contractor to be compliant with the applicable norms and regulations as well as the French Labour Code. The size of the doors shall comply with the safety requirements in terms of the number of occupants of the room.

The double leaf pedestrian doors shall meet the requirements listed below:

- The door shall be isoplane acoustic type 42dB, full core with shop-painted metallic joinery. The colour shall be chosen by the IO at later stage;
- Each door shall be equipped with door stopper;
- Doors shall not be equipped with a strip seal;
- Doors of the utilities rooms shall be fire resistant 1 hour: EI60.
- Internal doors to isolate office volumes shall have half of the leaf with transparent window,
- The locks to be provided by the Contractor after validation of the organigram by the IO (Bricard brand);

- An autonomous emergency-lighting unit shall be installed minimum 10cm above each door frame.

5.15 Heating, ventilation and air-conditioning (HVAC)

The heating, ventilation and air conditioning systems (HVAC) implemented under the Works shall be electrical (no gas or fuel sources allowed), and, they shall be designed according to the total electrical power capacity of the building. The HVAC system proposed by the contractor shall be in accordance with RT2005 rules, no standard electrical heater is allowed.

The systems shall be compliant with all statutory requirements, the applicable norms and standards and the French Labour Code. The equipment shall be CE marked.

The HVAC units shall be installed on supports at maximum 50cm from the ground. No unit on the roof or on the upper façade of the building is allowed. An access to the different parts of the systems shall be ensured to allow a safe and appropriate maintenance.

The design shall mitigate as much as possible the noise and vibration disturbance generated by the HVAC systems. The duct lagging shall be implemented accordingly.

All HVAC units shall be supplied with a cooling gaz with GWP lower than 675 (GWP of R32). The installations shall be designed for the following target temperatures, for outside temperature of + 35°C in summer and - 10°C out in winter and a relative humidity of 80%: winter, 21+/-2°C, summer, 24+/-2°C;

The systems shall be air-conditioning heat pump inverter type.

The interior units shall be wall-mounted type with one remote control or control panel.

The number of units shall be optimized at the maximum to not exceed more than 4 units per level.

5.15.1 Ventilation

The Contractor shall design the natural ventilation of the building according to the French labour Code, supply and install simple flow ventilation systems ensuring optimum indoor air quality and energy savings in the building as follows.

5.16 Electrical power installations

5.16.1 Design hypothesis and constraints

- TNS is the nominal electrical system to be applied.
- The electrical source will be the LV switchboard of the Load Center 14;
- During the design phase, the Contractor shall provide the IO with the total power balance and the calculation notes (in CANECO and pdf versions) of the electrical equipment to be installed in the building;
- The Contractor shall make sure the electrical installations are compliant with applicable norms (e.g. NF C15-100 in particular). All electrical installations shall meet the statutory requirements;
- An equipotential belt (with copper braids or cables) shall be implemented between all the metallic columns;
- All LV/LC electrical cabinets installed in the building under the Works shall be appropriately earthed;
- The design and the data sheets of the products used for the earthing protection shall be approved by the IO at the design stage prior to their installation.

- All installations and equipment shall be CE marked.

Input data related to the main power line will be provided by the IO to contractor at design stage.

5.16.2 Power balance and sizing

The Contractor shall provide the following documents:

- Building Power Balance with a spare capacity of 30%;
- Electrical calculation notes developed with Caneco in PDF and native version;
- The block diagram of the complete electrical network.

5.16.3 Main electrical switchboard and distribution cabinets

The Contractor shall supply and install the main electrical switchboard in the utilities room, as well as all necessary distribution cabinets.

The ratings and time current tripping curves will be defined based on the appliances to be protected. The installation will be calculated to guarantee total selectivity. An insulation fault on an electrical circuit shall not cause isolation of more than a ¼ of the facilities per sector.

The switchboard, the boxes and the cabinets shall be designed to receive at least 30% of additional equipment.

The main electrical switchboard shall be equipped with a lightning protection.

NOTA for all the above points:

Respect $L1+L2+L3 \leq 500$ mm thus consider having a surge arrester including its protection.

The Contractor shall forecast the connecting switchboard columns in between columns to connect the breakers passing by electrical terminals until a wire section of 25 mm².

5.16.4 Cabling and marking

All the LV links will be carried out in copper U100R2V wiring.

All the switchgear (protective devices, relaying, terminal boards, cables etc.) will be tagged.

5.16.5 Equipment and electrical plugs

The Contractor shall supply, install and connect all the plugs 16 A 2P+pin earth. The fittings shall be of standard brand Legrand Mosaic 45 with screws or equivalent.

The plugs shall be embedded in white conduits. They shall be positioned depending on the chosen location of equipment and furniture for ease of access, and against risk of trips and falls.

The Contractor shall plan for a feeder of 16 A from the cubicles with a differential of 30 mA, for maximum 8 socket-outlets.

The distribution of low current and low voltage networks shall be uncoupled. The interference problems shall be considered in the routing of cables. The dimension of the conduits shall allow a space reserve of 30%.

This feeding system shall be easily adaptable for new connections.

The estimated numbers of normal outlets are the following:

Location	Number of normal outlets	Number of uninterruptible outlets
Offices	3 / desk	Ø
Corridors	1 / 10m	Ø

Staircase	2	Ø
Utilities rooms	2	2
Building Entrance	2	Ø
Airlock (SAS)	2	Ø

Table 1 – Minimum number of electrical outlets

The setting out of the plugs shall be submitted to ITER Organization approval by the Contractor on the basis of the final furniture arrangements.

5.16.6 Distributions and cable trays

The distribution is laid out on cable trays of type: Cable basket or under tubes IRO in common areas.

When more than 2 cables follow the same path, they shall be laid out on cable trays, at a rate of 2 maximum layers of cables placed side by side. They shall be fixed by collars of the Rilsan type or equivalent.

The cable trays are of a certain dimension so as to leave a reserve of 30% of the width and have a wing of 5cm.

Each element of the cable shelf is supported by at least two cantilevers, with a deflection of less than 2cm per meter.

In the zones at risk of shock, the mechanical protection of the cables - by cover or tube - is maintained until 2.00 m above floor level.

5.16.7 Internal lighting

The lighting shall be compliant with the French Labour Code, be designed in accordance to NF EN 12464-1 and meet the below listed requirements:

- The installation shall be CE marked.
- LED Colour shall be of natural tone: 4,000.
- LED lifetime shall be minimum 50,000 hours.
- The protection level in accordance to the areas (wet or dry).

Lighting levels will respect the recommendations from the standard NF EN 12464-1 and will be calculated according to the NFC 71.121:

Room type	Minimum lighting level (lux)
Corridor & Covered airlock area (SAS)	100
Staircase	100
Office area	500
Utilities rooms	500

Table 2 - Minimum lighting levels

The Contractor shall include in the Works:

- Calculation of the number of lights;
- Supply and installation of economic lighting of LED type;
- Supply and installation of small equipment / fittings, of MOSAÏC type from Legrand or equivalent;
- Controls of simple switch type in the office area and the utilities rooms;

- Control by presence detectors in the corridors and stairs;
- PVC conduits fixed against the walls for apparent routes. The routes shall be covered as soon as possible.

During the test and commissioning period, the illuminances of the different areas shall be checked by the third party (an Independent Checker). For the Taking-Over by the IO, a global report shall be submitted to the IO to confirm that the requirements are met without observation. The lights shall be positioned to grant an immediate and easy access for maintenance works.

5.16.8 *Emergency lighting*

The buildings shall be equipped with a fixed installation of emergency lighting (autonomous emergency lighting) in corridors and staircases, in accordance with the decree of 26 February 2003 relating to the circuits and installations of safety and circular DRT n° 2003_07 of 2 April 2003 concerning the application of the decree of 26 February 2003.

The Contractor shall supply, install and connect safety lighting, as follows:

- Autonomous blocks of emergency lighting “Emergency exit” 60 lumens;
- Operate by remote control blocks “Emergency exit”;
- Displayed in conformity with the NFC 71800;
- 2 blocks separated by a maximum of 15m shall be used to mark out the direction to the outside exit (written in English);
- 1 block above each fire exit;
- 1 block spaced every 15m in corridors;
- 1 block above each workshop or laboratory room in the level 1.

5.16.9 *Earthing and lightning protection*

The Contractor shall provide a calculation note justifying the earthing and lightning protection of the building.

The Contractor shall provide and install the earthing of the installations and all metallic bodies (modular structures, roof cover, staircases, guard railing, and electrical cupboards...) which shall be installed in the ground network buried in a trench.

The Contractor shall include a lightning protection for the electrical equipment in compliance with standards and recommendations for protection against the direct and indirect effects linked to lightning.

5.16.10 *Emergency shutdown button*

The Contractor shall supply and install in the entrance hall, an emergency shutdown button ensuring the electrical isolation of the entire building. It shall be key lockable and of LEGRAND 38098 type or equivalent.

5.17 Low current

The building will be connected to the existing Low Current (LC) network available from Building 17 with a monomode type fiber.

The LC network shall be connected and distributed for provision of the following systems in the building:

- IT network,
- Wi-Fi network (out of Contractor scope),
- Fire Detection System (out of Contractor scope),
- Public Address System (PAS) (out of Contractor scope),
- Access control system (out of Contractor scope),
- Security cameras system (out of Contractor scope),

5.17.1 IT network

The Contractor shall design, supply and implement the entire distribution of the IT network in the building.

For this purpose, the “server type” rack(s) of the utilities room of each floor shall be sized with a spare capacity of 30% to house the following components:

- Optical patch panels with input fibre is out of the contractor scope,
- Necessary quantities of RJ45 patch panels for the patching of all required RJ45 plugs including a spare capacity of 30%;
- The Contractor shall supply and install all necessary RJ45 and optical fibre patch cords which will be required to achieve the patching;
- The manageable IT switch(es), Cisco 2960-X type, equipped with SFP and PoE stackable modules including links if several switches are needed in the LC room. These manageable IT switches will be provided and install by the ITER Organization;
- All cables shall be properly sorted using a specific rack in the cubicle.
- All plugs and cables shall be uniquely numbered in the cubicles and at their connection points in the patch panels for identification.

The Contractor shall supply, install and connect the totality of the installations for data processing and the telephone with RJ45 plugs category 6, for the following requirements:

Location	Number of RJ45 plugs	Other IT link
Offices	2 / desk	Ø
Corridors	1 / staircase access (wall mounted) 4/ floor on ceiling for wireless access points	Ø
Utilities rooms	2	Ø
Airlock (SAS)	2	Ø

Table 3 – Number of IT plugs

5.18 Option 1 – Design and install a robust waterproofing solution for the roof (in case of modular construction)

The contractor shall design, supply and install a global robust waterproofing solution covering all the junctions of modules and removing the evacuation of the water by the columns inside down pipes. Water shall be directed on the sides of the building before to be evacuated out of the footprint of the building by down pipe going till the ground level.

Example of solution could be external covered skeleton or waterproofing membrane complex.

It shall be noted that during the works, temporary access and temporary guard rails shall be installed to protect workers against risk of falling.

5.19 Option 2 – Supply and installation of an additional storey (Level 3)

The Contractor shall supply, install and commission an additional third storey to create a Level 3 of the building, identical to Level 2, thus increasing the capacity of the building up to 96 persons. The external and internal staircase shall be raised accordingly.

6 Site constraints

6.1 Site data

6.1.1 Geotechnical data

The soil characteristics of the Site for the project can be found in the reference documentation [27].

In summary, it is recommended to consider the following characteristics of the ground for the project and the design of the foundation:

- The building is located on an area composed of 1 to 5m of compacted fill materials (started at 1m on the north western side going to 5m at the south eastern side). This fill material is directly laid on limestone rocks. So the rockhead is between 1 to 5m -refer to the figure 3 below;

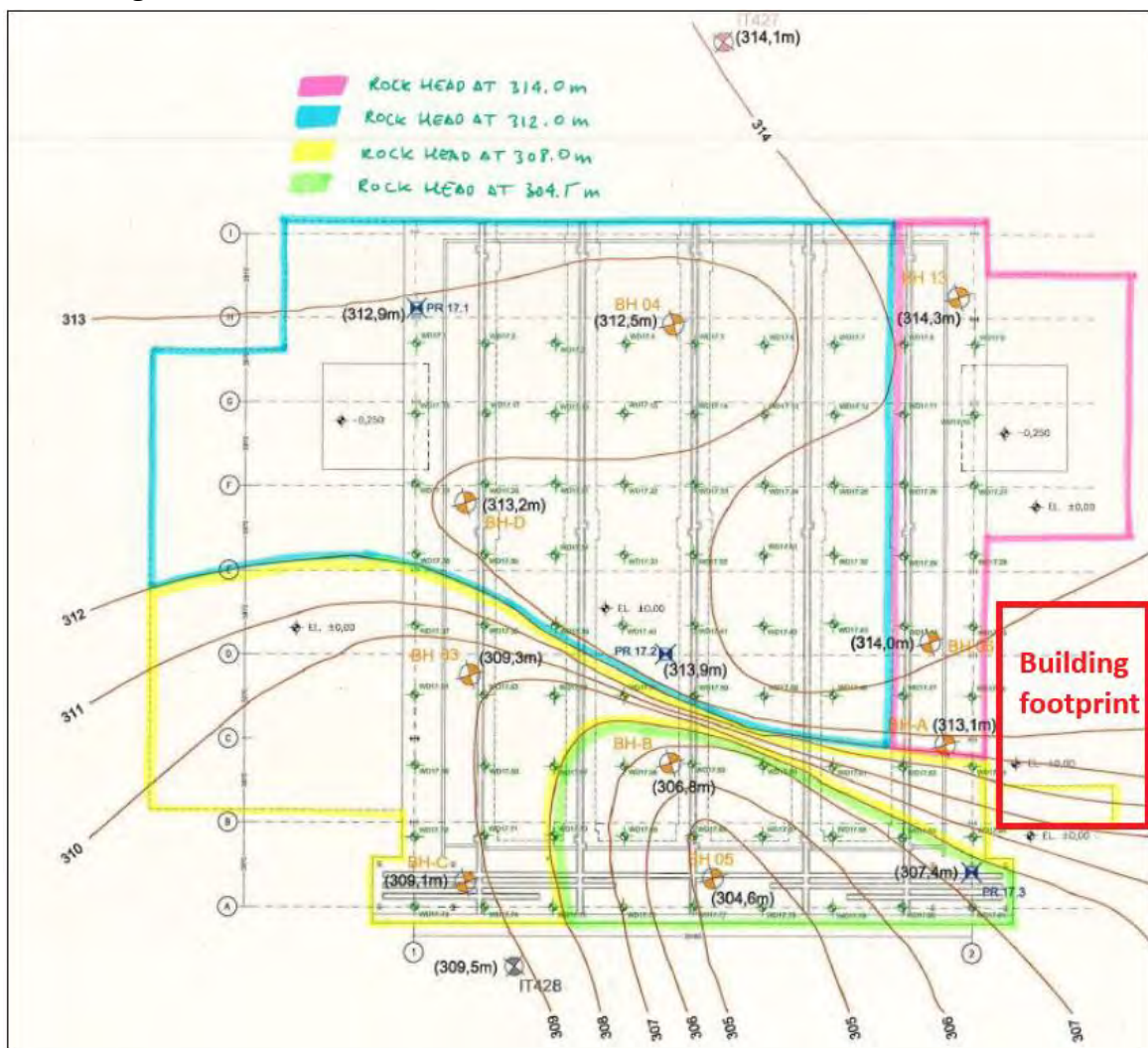


Figure 3 – Rockhead levels in the area

- Groundwater was not found in any of the boreholes carried out in the vicinity of the building 17;
- No sulphates were encountered during the chemical test carried out in the samples tested and therefore no additional measures are required for protecting concrete against aggressive ground conditions;

- The following table summarises the design parameters to be adopted for the geotechnical design of the building – refer to figure 4:

Material		Y (kn/m ³)	C' (kPa)	Φ' (°)	PI (MPa)	Em (MPa)	E (MPa)	UCS (MPa)	ν
Fill	Sand gravel	19	6	30°	1.2	12	40	-	0.3
Miocene	Marly Sandy clay	20	20	25	3.9	89	178	-	0.3
Marl	Marly clay/marl	20	15	23	4.0	660	1000	-	0.3
Limestone		26	-	-	4.0	-	6000	60	0.3

Figure 4 – Soil design parameters

- For the Bearing pressure (ULS), the following table summarises the results of the calculations carried out following the recommendations given in NF P 94-261 for unit bearing pressure of q_{net} , and ultimate bearing pressure using the model factor $\gamma_{R,d,v}=1.2$, Annex D NF P 94-261 and partial factor $\gamma_{R,v}=1.4$ 9.1 NF P 94-261. Values of ultimate bearing pressure on the fill should be limited to approximately 400kPa whereas for the Miocene and limestone rock, a maximum value of 800 and 1000kPa should be adopted.

Material	PI (MPa)	kp (D2.3)	unit bearing pressure of q_{net} (MPa)	ultimate bearing pressure (kPa)
Miocene	3.9	0.8	3.1	1800
Limestone	4.0	0.8	3.2	1900
Fill	1.2	0.8	0.96	570

Figure 5 – ULS bearing pressure

- For the Limit pressure (SLS), based on a unit bearing pressure of q_{net} of the fill, Miocene and limestone rock and taking into account the model factor $\gamma_{R,d,v} = 1.2$, Annex D NF P 94-261 and partial factor $\gamma_{R,v} = 2.3$, 13.4 NF P 94-261 the following net design values of ground resistance $R_{v,d}$ are derived. Net design values of ground resistance ($R_{v,d}$) of 500kPa and 1000kPa should not be exceeded for the Miocene and limestone rock respectively.

Material	PI (MPa)	kp (D2.3)	unit bearing pressure of q_{net} (MPa)	Net design values of ground resistance ($R_{v,d}$) (kPa) Section 13 of NF P 94-261
Miocene	3.9	0.8	3.1	1120
Limestone	4.0	0.8	3.2	1150
Fill	1.2	0.8	0.96	350

Figure 6 – Limit pressure SLS

- For the Seismic classification of the ground type based on Eurocode 8 EN 1998-1:2004 and the recommendations given in table 3.1 of EN 1998-1:2004, the material at the site can be classified as ground type B.

Average shear wave velocity $v_{s,30}$ for the site has been derived following the expression given in EC8:

$$v_{s,30} = \frac{30}{\sum_{i=1,N} \frac{h_i}{v_i}}$$

The following average ground profile has been considered:

0-5m fill material, $V_s=300\text{m/s}$

5-30m Limestone rock: $V_s = 1000\text{m/s}$

❖ 1,5 m of fill for 20% of the footprint $\rightarrow V_{s,30} = 895,5 \text{ m/s}$

❖ 3 m of fill for 20% of the footprint $\rightarrow V_{s,30} = 810,8 \text{ m/s}$

❖ 5 m of fill for 60% of the footprint $\rightarrow V_{s,30} = 720 \text{ m/s}$

$\rightarrow V_{s,30}\text{Ave} = 773 \text{ m/s}$

So, $V_{s,30}\text{ Ave} < 800\text{m/s}$, soil class to be considered is B.

If necessary, the Contractor shall perform a geotechnical mission during the design phase at its expense to justify its design hypothesis and to ensure the stability of the building's structure. Based on the above and following the recommendations given in table 3.1 of EN 1998-1:2004, the material at the site can be classified as ground type B.

6.1.2 *Existing buried networks*

The existing buried networks in the Site of the Works are illustrated in [11], [27] and [28].

The Contractor shall ensure that the existing buried networks are not altered or damaged by the Works.

Prior to the commencement of any Earthworks, the Contractor shall first properly identify the existing networks located in the area using the drawings, then, after the Site investigation(s) and detection campaign, the Contractor shall mark on site all the existing networks positions (X, Y, Z) prior to start any excavation.

6.2 Interfaces and Site constraints

The Contractor will face the interfaces with other contractors and users during the Works on the ITER site.

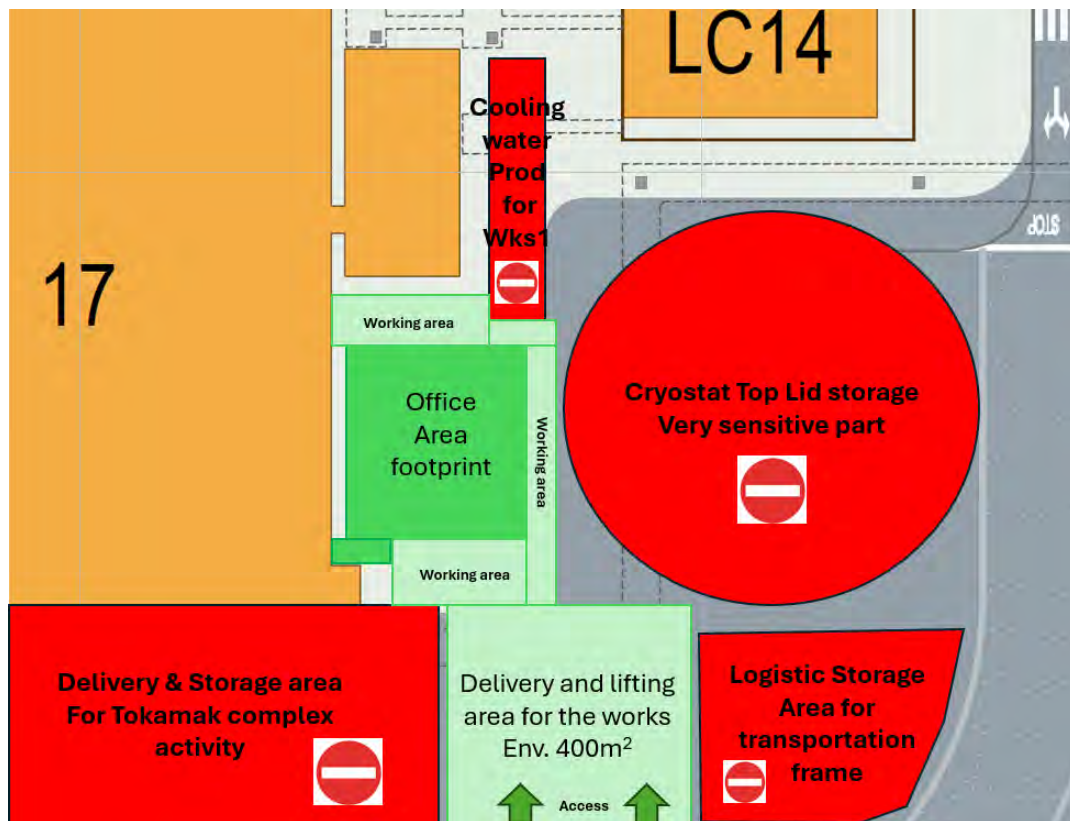


Figure 7 - Main interfaces to be considered in the Site.

The Site of Worksite 1 office project is surrounded by different areas with high constraints – refer to Figure 3 above:

- On the south side, there is the main south delivery road of ITER where access shall be granted at any time. The contractor will access to the working area by this road (refer to green arrows on the figure 7).
- On the North side, there is Building 17 annex building and the Cooling water production units for the building 13, so, the access is impossible by this side and no impact is allowed there. The emergency evacuation way shall be maintained during the whole duration of the works (north of the working area).
- The West side of the Site is Building 17 where the airlock needs to be connected. The Contractor shall propose a working methodology avoiding any impact on or damage to the structure of Building 17 and the temporary aerial services running in ducts along the East façade of Building 17.
- On the east side, there is the storage of a first of a kind components of ITER: the Cryostat top lid. No access or lifting above is allowed on this side. The Contractors has to propose a working methodology avoiding any impact or damage on the part and its preservation envelop.
- Due to the constraints listed above, the Contractor shall forecast as much as possible to erect building within the Site with a methodology minimizing the impacts on surrounding areas. All these points shall be considered in the design proposal of the Contractor.

Particular conditions could be requested, such as working outside of normal working hours or during the weekends. The additional cost shall be borne by the Contractor.

All the temporary means to mitigate the impacts on the other entities shall be forecasted by the Contractor.

The Contractor is expected to have a very proactive approach to ease the coordination of this busy area. A particular attention is necessary on the signalization and the closure of the worksite in particular during the delivery and the lifting of the steel frame or the modules (in case of modular construction).

Any impact on a surrounding area or the existing IO's assets shall be notified to the IO and Health & Safety Coordinator as soon as possible.

6.3 Facilities provided by the IO

6.3.1 *Work areas and access*

The below listed areas and accesses will be provided by the IO to the Contractor during the Works (refer Figure 7 above):

- Access to the ITER construction platform and the Site will be possible by entering the ITER site via Entrance B from the North and /or Entrance D from the East;
- The Site is formed of the planned office building footprint and the working area around it (approximate surface of 120 m²).
- Vehicle access, storage, delivery area and lifting area (approximate surface of 400 m²).
- Several pedestrian paths are available between the Site and Contractors' Area 2 (CA2) where common welfare facilities (refectory and infirmary) are located, at approximately 15 min by foot.

6.3.2 *Electricity provision*

The Contractor will be authorised to use the LV electrical sockets network available on the ITER Site required for the Works at ITER's expense under condition that its consumption is considered as normal (no abusive use by the Contractor).

Any temporary electrical worksite installation (the connection works and provision of any required equipment) shall be foreseen in the scope of the Contractor.

However, in the case it is not feasible for the IO to provide the electrical power supply to the Site, the Contractor shall provide its own power generator at his own expense.

6.3.3 *Water provision*

No water point is provided.

6.3.4 *ITER site welfare facilities*

The IO will provide to the Contractor an access to the existing welfare facilities on the ITER site. This includes the sanitary buildings with showers and toilets facilities (but no lockers) and the worksite canteen, all located at CA2 which is next to the worksite.

6.4 Facilities provided by the Contractor

The Contractor shall provide and manage the following facilities during the Works on the Site:

- Temporary fences (type HERAS / 2m high panels) to fence off the Site perimeters.
- All temporary Works measures required for the delivery of Worksite 1 office project including but not limited to:
 - o any mitigation measures to reduce the impact of the Works on the Site surroundings (e.g. solid fence panels / tarpaulin to reduce a dust spread during the excavation activities / earthworks).
 - o mobile traffic lights, road signs, GBA concrete block, etc., to ensure the safety and security of the Site and its surroundings.
- Any temporary office / gathering facilities and portable chemical toilets for the Contractor's team on the Site.
- Provision of the potable / drinkable water for the Contractor's team on the Site.

6.5 Coordination of the Works

The Works shall be coordinated to ensure that they do not affect or are affected by any other contractors' activities in new worksite 1 office and its surroundings.

The relevant coordination meetings are held by IO CRO at the ITER site on a weekly basis, at which the Contractor shall be present.

6.6 Contractor's site facilities

The Contractor shall provide its own temporary Site facilities in conformity with the decree of January 8th, 1965, modified by the decree n°95608 of May 6th, 1995. The Contractor shall secure the Site with a perimeter fence.

The temporary Site facilities shall be located in the area close to the working area. In case the Contractor plans to connect its facilities to the existing networks, it shall seek the IO's agreement first. The Contractor shall be responsible for all necessary studies and works to implement these connections. The Contractor shall install relevant meters to ensure accurate monitoring of the consumptions.

The ITER Organization shall not provide waste and wastewater connections to the Site.

The Contractor shall be able to present the regulatory control reports of its premises without observations.

6.7 Cleaning and maintenance of the Site

The roads and the areas around the Site footprint shall be maintained in a good condition and a constant state of cleanliness. The Contractor shall take all necessary measures (e.g. using a scrubber, scraper, sweeper, karcher...) to mitigate them appropriately clean. Should any said cleaning fail to be performed, it will be performed by a third party on the IO's request at the expense of the Contractor.

The Contractor shall manage and be in charge of the necessary actions to ensure:

- An appropriate housekeeping on the Site and the areas provided to the Contractor by the IO for the Works duration including keeping clean and tidy the pavements and access paths leading to those areas used by the Contractor.

- Systematic removal, as and when they are produced, of any waste (e.g. improper cuttings, rubble, demolition products, packaging, etc.) from the Site and any working area, produced by itself or by its subcontractor(s).
- Performing of the Works in a clean manner.
- Reinstatement of the Site after the Works completion.
- Removal of the Contractor's plant and equipment as well as dismantling of any temporary facilities implemented on the Site and in the areas provided to the Contractor by the IO.
- Thorough general cleaning of the areas affected by the Works prior to the Taking-Over.

6.8 Protection of existing facilities

The Contractor shall ensure that existing facilities are not damaged by the Contractor while executing the Works and that suitable protection is put in place when working in the vicinity of the existing facilities.

In case of any damages to the existing facilities and/or third party assets caused by the Works execution, the Contractor shall reinstate them to their original condition (using the same materials as much as possible) or cover the cost of the remedial works performed by others.

6.9 Security of the Site

The Contractor shall be responsible for the security of the Site and his belongings on the ITER site.

The Contractor shall secure the Site with a perimeter fence.

The Contractor shall establish a point of contact within his organisation that shall be available 24/7 (including weekends, bank holidays and site closure days) to deal with any incidents concerning the Contractor's Site in a fast and effective manner. The Contractor shall provide the IO with the direct contact details of this person and/or an on-call duty telephone number.

6.10 Access to the Site

The Contractor shall follow the procedures and any administrative formality to enter the ITER site and to carry out the Work on the Site.

Access to the ITER Site is subject to the entrance and exit control measures, as defined in the ITER site access procedure – refer to [5]. The Contractor shall manage his accesses using HELIOS system in a timely manner.

Specific controls are applied to personnel entering the site. For security purposes, access may be refused or withdrawn for any Contractor's representative without justification.

Regular access hours for the ITER construction site are from 05:30hrs to 22:30hrs (Mondays to Saturdays).

Access to the ITER site outside regular access hours could be possible but only for specific activities – subject to the IO's discretion.

6.11 Permit To Work

Prior to commence any Works on the ITER site, some Permit To Works (PTWs) will be required to be raised by the Contractor for the IO's representatives validation in accordance with the Permit To Work Procedure - refer to [4] and [15].

7 Health and safety requirements

7.1 Conventional health and safety

The Contractor shall respect the French Labour Code and apply the nine general safety principles listed in article L4121-2 thereof.

The Contractor shall also comply with the following documents and all proceedings arising therefrom:

- ITER Internal Regulations – refer to [6];
- General health and safety coordination plan (PGC SPS) Vol. 1 - IO&F4E – refer to [7];
- Housekeeping Instruction – refer to [14];
- Lifting Instruction – refer to [17];
- Work at Height Instruction – refer to [18];
- Chemical product management procedure – refer to [2];
- Alert procedure – refer to [8];
- Smoking policy – refer to [16].

The IO has placed a contract to provide the services of a Health and Safety Protection Coordinator (HSPC) during the ITER construction works. This contract has been established with APAVE under the authority of the IO Safety Department. The HSPC is mandatory for construction projects performed under the French Decree 94-1159. The HSPC defines the health & safety rules applicable on the ITER site, reviews the specific health and safety plans (PPSPS), perform the common inspections and co-ordinates activities from a health & safety perspective.

The Contractor's Work will be subject to regular inspections by the HSPC (APAVE) and/or the IO Safety Representative(s) to ensure compliance with the health & safety practices, including but not limited to working at heights, housekeeping and storage of hazardous materials.

In case the Works involve the use / and or storage of chemical products on the ITER Site, the Contractor shall comply with the chemical product management procedure [2] and fill in a designated chemical product acceptance form minimum ten (10) working days in advance of planned used/delivery on the Site.

The Contractor and its subcontractor(s) shall establish a specific health and safety plan (PPSPS) using the ITER template (in French) and transmit it to the HSPC at least 15 working days (8 working days for subcontractor) prior to the planned commencement of the Works on the Site.

The on-Site Works cannot start before a Common Inspection is carried out by the HSPC with the Contractor (and its subcontractor, when applicable), and the inspection report is issued by the HSPC, in accordance with R4532-13 and R4532-14 of the French Labour Code.

All Contractor and subcontractor's staff must follow a newcomer's safety training course within six (6) working days after their permanent access badges to the ITER site are issued. The newcomer's safety training course is held by HSPC (APAVE) on the ITER site at least once a week. Failure to attend to this course within the required period of six (6) days by the Contractor's staff granted the permanent badges will result in an automatic blocking of their access to the ITER site until the course is taken.

This training course does not relieve the Contractor of his responsibilities with regards to the training of its own staff for their work stations and the general safety rules in accordance with articles L.4141-1 and following of French Labour Code.

The Contractor shall pay specific attention to the safe and respectful behaviour of its on-Site personnel. This includes supplying and wearing of appropriate personal protective equipment

(PPE). The IO draws the Contractor's attention to the fact that sanctions may be applied to the Contractor's staff contravening the safety rules.

All the required equipment to create a safe environment for the Works shall be provided by the Contractor.

7.2 Nuclear safety - Environmental protection

ITER is a licensed nuclear facility (in French: "*Installation Nucléaire de Base*") identified in France by the number INB-174 and subject to the French Order of 7th February 2012, relating to the general technical regulations applicable to licensed nuclear facilities.

In the performance of the Contract, it is anticipated that the Contractor will perform or participate in the following so-called: "Protection-Important Activities" (PIA), as defined by the above mentioned Order:

- Activities for the protection of the environment;
- Waste management.

For these activities, the Contractor shall comply with environmental protection requirements and procedures applicable at the ITER Site, as described in [9] and [10].

The Contractor shall ensure that these activities are carried out by Suitably Qualified and Experienced Persons. For this purpose, the Contractor shall make the necessary provisions for training course(s) in order to maintain the required skills and qualifications for its staff and, whenever necessary, to develop them. In case these activities are carried out by the sub-contractor(s), the Contractor shall ensure that its sub-contractor(s) make analogue provisions for their own staff.

Furthermore, the ITER Policy on Safety, Security and Environment Protection Management – refer to [13] - presents the strategical objectives of the IO for protecting the interests mentioned under Article L593-1 of the French Environmental Code, must be circulated, known, understood and applied by all staff of the Contractor and cascaded down in the managerial lines of the Contractor's organisation and its sub-contractor(s)'.

An Environmental Respect Plan (PRE) shall be produced using the ITER template and provided by the Contractor at a minimum of ten (10) working days prior to the start of the on-site Work.

The Contractor shall issue a monthly environmental report, by the 5th day of each month, forming part of a monthly report, containing the information for the previous month – refer to Section 8.4.2. This report shall be submitted to the IO and HSPC representatives.

8 Contractor deliverables

8.1 List of planned document deliverables

At the beginning of the Works under the contract, a list of planned document deliverables shall be established between the IO and the Contractor. For this purpose, the Contractor shall submit a drafted list of deliverables and their planned issue dates within one (1) week after the signature of the contract, using the ITER template (Excel table) – to be provided by the IO in due course. The list shall be updated by the Contractor during the course of the Contract.

8.2 Documents formats and data exchange

All documentation delivered to the IO shall be in English (unless requested otherwise, as stated in this specification) using Microsoft Office standards or Adobe PDF. For any specific software used (e.g. CANECO, AutoCAD, etc.), the deliverables shall be provided in their native and pdf versions.

Adobe PDF documents shall have the texts recognition and include bookmarks.
The electrical diagrams shall be delivered in See Electrical Expert format.

The Contractor shall ensure that all documents' deliverables are uniquely identified and traceable (provided with the project unique reference numbering system including their revision and the issue dates, were applicable).

All deliverables (except the drawings and diagrams in Adobe PDF format) shall be transmitted through ITER Document Management System (IDM) / Contractor's Document Exchange Area, as detailed in ref. [12].

Drawings and diagrams in Adobe PDF format shall be exchanged in the System for the Management of Diagrams and Drawings (SMDD).

8.3 Documents review and approval

The Contractor shall allow ten (10) working days for a review period by the IO.

In case the IO disapproves a document or has comments and requests its new revision, the Contractor shall update and resubmit the deliverable within five (5) working days, taking into account the IO's comments. For each following-up review period by the IO, the Contractor shall allow five (5) working days.

The review period shall start the following day after the uploaded deliverables have been signed in by the Contractor in IDM and/or SMDD.

The Works performance without the IO's approval or in the absence of approved relevant documents shall be sanctioned by a stop of the Work order until the situation has been rectified. All consequences of the Work stoppage shall be borne by the Contractor.

8.4 Contractor's deliverables

8.4.1 *Early Deliverables*

8.4.1.1 *Schedule of Works*

The Contractor shall submit a Schedule of Works (Programme) which shall show as a minimum the main activities to be carried out for the design, procurement, mobilization, preliminary design, construction design, on-Site construction, commissioning, preparation of as-the built documentation and the Taking-Over.

The time required by ITER Organization to review the deliverables shall be taken into account by the Contractor when preparing the Schedule of Works. The Schedule of Works shall be compatible with the Time for Completion of the Works.

The Schedule of Works and its updates (if required) shall be provided to the IO's approval.

8.4.1.2 *Performance Security*

The Contractor is to provide the Performance Security to the IO within two (2) weeks since the Commencement Date, as specified in the Contract.

8.4.2 *Monthly Reports*

A Monthly Report shall be submitted by the Contractor for acceptance by the IO five (5) working days after the end of each calendar month.

The Monthly Report shall contain:

- A narrative description of activities that have taken place over the period including photographic evidence of the progress of the Works.

- An update of the Schedule of Works (if required) showing the actual progress against the planned progress.
- In the case the Works are not progressing in accordance with the Schedule of Work, the report shall contain a detailed explanation of how the Contractor intends to recover the Schedule.
- A list and status of all RFI's submitted by the Contractor.
- A list and status of all DRs submitted by the Contractor.
- A list and status of all NCRs (raised by the Contractors or others) affecting the Works.
- A list and status of all IO requested Variations to the Works.
- A list of health and safety statistics including:
 - number of worked hours on the Site;
 - total number of workers curves as well as the number of hours worked per week;
 - all accidents (including environmental issues / observation sheets) occurring on the Site (or elsewhere if connected to the Works);
 - the number of accidents with lost working days;
 - the number of lost working days per accident;
 - a brief report of the causes of accidents or incidents as well as the corrective measures implemented following the accidents or incidents;
 - an assessment of the training and safety awareness courses carried out during the month.
- A list of environmental statistics - refer to [9] - including:
 - electricity consumption;
 - potable water consumption;
 - raw water consumption;
 - fuel consumption;
 - quantities of waste generated, distinguishing between hazardous waste, non-hazardous waste, inert waste, concrete laitance and the overall percentage of recycled waste.

8.4.3 *Deliverables required prior to Commencement of Works at the Site*

The documents listed below shall be submitted by the Contractor (and where appropriate each sub-contractor) for approval by the IO no later than ten (10) working days prior to the Commencement of Works at the Site (unless stated otherwise):

- Environmental Respect Plan (PRE) – in the ITER template – refer to [10].
- The documentation list including their deliverables schedule (1st draft, to be updated during the course of the Contract) .
- List of subcontractor(s);
- Third party control entity selected for the independent self-control and acceptance tests performance (for approval by the IO).
- General layouts of building, airlock access and external staircase: the facades and top plan views of the building including their expected foundations system, the networks routings.
- Permit to Work (PTW) request(s) – refer to [4].
- Access requests for personnel to the ITER Site – refer to [5].

- The Contractor Site installation plan (French: *Plan d'Installation de Chantier*).
- List of subcontractors and relevant Subcontractor Acceptance Form (SAF) – using ITER template – refer to [26].
- List of suppliers.
- PPSPS for the Works performed by the Contractor and each sub-Contractor(s) – in the ITER template (bilingual – English & French) – refer to [7].
- *Note:* The submission shall be minimum 15 (8 for the subcontractors) working days prior to the planned Works on the Site.

8.4.4 Construction design deliverables

The IO requires the Contractor to submit the construction design deliverables in order to ensure that the accepted preliminary design has been developed accordingly and that the as-built records of the Works will meet the IO's requirements.

The Contractor shall submit the following documents for acceptance by the IO (non-exhaustive list):

- All construction design drawings suitable for the execution of the Works on the Site.
- Final Design Report - updated with the calculation notes and material definitions for the structural, insulation and fit-out elements of the Works. The report shall include all electrical calculations (in both, CANECO and pdf formats), load lists and one-line diagrams and other information necessary for the future statutory inspections prior to the commissioning.
- Updated Contractor's Quality Control Plan (if necessary).
- Evacuation Plans and an Intervention Plans of the building.

The construction design deliverables can be submitted to the IO in phase manner to suit the planned construction schedule. However, no construction activity shall start before the relevant construction design deliverable has been approved by the IO.

Below a non-exhaustive list of expected documents to be provided by the contractor:

- For civil works:
 - Layout plan;
 - Plan of spoil/fill and assessment of quantities;
 - Calculation of the building design loads (exploitation, climatic and of seism) and load take down, for design of foundations and checking of structures;
 - Detailed design of the foundations, setting out and reinforcement plan;
 - Design and plans of the modular building, external staircase and the airlock access: offices, roof-covered areas, staircases; if prefabricated, supply of the products design loads;
 - Checking of the arrows and the Eigen frequencies under working loads of the floors of the offices;
- For the HVAC:
 - Note for heat balances according to the Thermal balance of the building,
 - Dimensioning of the equipment and technical documentation;
 - Execution drawings of the networks and terminals;
 - Power loads estimates and plans for electric connections.
- For the electrical power:

- o Notes for the assessments of power requirements;
 - o Notes of calculations using the software Caneco BT;
 - o Setting out plans of electrical sockets;
 - o Calculation note of the cables and the electrical control panels and technical documentation;
 - o Line diagrams.
- For low current:
 - o Setting out plans for RJ 45 sockets;
 - o Line diagrams;
 - o Diagrams of connection.
- Applicable to all disciplines:
 - o Nomenclature of the Works;
 - o Execution drawings or detailed workshop drawings of the Works;
 - o Reports of tests and approvals;
 - o Samples of materials at the request of the ITER Organization;
 - o All required documents for the execution of the work.

8.4.5 *Deliverables required during the execution of the Works*

The Contractor shall provide the following documents during the execution of the Works:

- Results of all control tests performed by the Contractor during the execution of the Work.
- Reports of tests and their results approvals (performed by the external body / independent checker).
Note: In the case of negative results, the Contractor shall provide a written explanation of the corrective actions the Contractor intends to undertake to the IO's satisfaction.
- Contractor's Quality Plan status statements relating to the controls by the IO (HPs/NPs).
- Monthly progress reports – refer to Section 8.4.2 above.
- All required documents regarding with the Contractor Safety Plan or the environmental specifications of the IO or necessary to the traceability of the Work.

8.4.6 *As-built documentation*

Upon completion of the Works, and prior to Taking-Over, a complete as-built files shall be provided by the Contractor, including (non-exhaustive list):

- Detailed as-built drawings for all Works executed taking into account any changes implemented during the construction Works. The drawings shall be revised as a final "as-built" version.
- Final design report including all calculations notes.
- Registers of all NCRs, RFIs, DRs and Variations raised during the execution of the Contract (including the reports).
- Results and statements of all controls, checks and tests executed during the Works including the commissioning legal inspection reports issued by the independent checkers for the followings:
 - o Electrical installations,
 - o Lightning protection,

- o Illuminance levels check,
- o DESP (HVAC system).
- Technical notes and materials technical data sheets with precise references of all equipment installed under the Works (e.g. manufacturer, types, and precise references) – filled in the Excel table, refer to [25]**Error! Reference source not found..**
- Material & equipment guarantees, compliance certificates attesting that the installations are in conformity with the provisions of the safety regulations.
- All necessary documents for the *operational and maintenance folder* defining the activities that are required to comply with manufacturers' recommendations, including the user manuals and operation instructions, the general schedule of maintenance inspections, the list of spare parts, etc. for all equipment.
- As-built update of update existing installation documents,
- Worksite pictures folder documenting the as-built status of the Contractor deliverables.

All as-built deliverables shall be provided by the Contractor in an electronic format (Adobe PDF and native file) through IDM and SMDD – refer to Section 8.2 and [12]- as well as on an external hard drive / USB key.

The Contractor shall endeavour to provide all required as-built documentation prior to an issue by the IO the Taking-Over Certificate.

The Contractor shall allow for a review period by the IO of twenty (20) working days.

9 General Management Requirements

9.1 Language

All communication with the IO shall be in the English language, unless otherwise stated.

The Contractor shall ensure that his management team is represented by at least one (1) person who can effectively communicate in English (orally and in writing).

Also, there shall be at least one person (1) capable to communicate in English present on the Site at all times.

9.2 Quality Assurance

The Contractor shall have an ITER approved Quality Assurance (QA) Program or an ISO 9001 accredited quality system.

The general requirements are detailed in ITER Procurement Quality Requirements - refer to [20].

The Contractor shall obtain written agreement from the IO to any modifications to the design, scope and/or the requirements described in this specification. Deviations and non-conformities shall be processed in accordance with Procedure for management of Nonconformities – refer to [22] and Procedure for the management of Deviation Request – refer to [23]. The Contractor shall commit to process non-conformities reports (NCR) and associated remedial and corrective actions expeditiously. The list of the NCRs and the deviation requests (DRs) shall be included in the monthly report issued by the Contractor – refer to Section 8.4.2.

The project will be realised under Quality Class 4 as described in the Quality Classification Determination – refer to [24].

9.3 Meetings

During the execution of the Contract, the Contractor shall participate in all meetings to which he is invited by the ITER Organization or its representatives. The Contractors' representative(s)

shall have the appropriate level of responsibility and expertise for the purpose of the meeting. During the design phase, these meeting may be held remotely (via Microsoft Teams), but during the construction phase, they will be held on the Site.

A non-exhaustive list of meetings is provided below.

9.3.1 *Contract kick-off meeting*

After signature of the contract, a contract kick-off meeting is organised by the ITER Organization in the ITER premises. At the meeting the Contract shall present its implementation plan for the ramp-up phase.

The minutes of the meeting shall be drafted by the ITER Organization.

9.3.2 *Weekly follow-up meetings*

Weekly meetings shall be held between the parties to discuss any topic related to the activities.

The minutes of the meeting shall be drafted by the Contractor in the form of an action list and issued for approval to the ITER Organization no later than 2 working days following the meeting.

9.3.3 *Monthly progress meetings*

Monthly progress meetings shall be held between the parties before the 15th day of the following month, aiming to follow-up the performance of the Contractor and discuss any technical or contractual issues that have arisen during the past month.

The Contractor shall present the content of the corresponding monthly report, refer Section 8.4.2.

The minutes of the meeting shall be drafted by the Contractor and issued for approval to the ITER Organization no later than 2 working days following the meeting.

9.3.4 *Safety meetings*

The Contractor shall attend all meetings organised by the ITER HSE officers/coordinators considered necessary for Health, Safety or Environmental issues, including common inspection meetings, CISSCT meetings etc.

9.4 **Taking-Over by the IO**

The Works shall be taken-over by the IO when they have been completed in accordance with the Contract, except for any minor outstanding works and defects, which will not substantially affect the use of the Works for their intended purpose.

The Works shall not be considered as completed for the purposes of Taking-Over until the required as-built documents have been submitted (via IDM / SMDD) by the Contractor to the IO.

ANNEX I

EXPRESSION OF INTEREST & PIN ACKNOWLEDGEMENT

To be returned by e-mail to: floriane.moynier@iter.org,

copy: mukamanaaline.nsengiyumva@iter.org

TENDER No.

IO_26_OT_10035512_FMR

DESIGNATION of SERVICES:

Design and Construction of Worksite 1 office building

OFFICER IN CHARGE:

Floriane Moynier - Procurement Division ITER Organization

☐ WE ACKNOWLEDGE HAVING READ THE PIN NOTICE FOR THE ABOVE-MENTIONED TENDER

☐ WE INTEND TO SUBMIT A TENDER

Are you registered in Iproc (only entities registered in iPROC will be invited to tender):

☐ YES

Please indicate your registration number:

☐ NO, but we shall register before the indicated tender launch date

Please list the users of ARIBA/IPROC that you wish to add as response team for this tender:

Name	E-mail
...	...

.....

ANNEX I

Signature:

COMPANY STAMP

Name:

Position:

Tel:

E-mail

Date: