

Technical Specifications (In-Cash Procurement)**Technical Specifications - B55 large motorized door
creation**

This document is the Technical Specifications for B55 large motorized door creation

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1 Purpose

The purpose of this document is to provide the requirements for the design and the construction of a new large motorized door on the ITER Site for the creation of VVTS repair workshop in Building 55 (B55).

2 Scope

The scope of the Works covered by this document is to design and build the new large motorized door in the building 55. All necessary related works shall be included, in particular:

- Management of all the Contractors activities;
- Design and construction of the new large motorized door including the necessary modifications of the existing structure and the associated electrical works;
- Provision of a complete set of As-built files.

3 Acronyms

The following acronyms may be found in this document:

FFL:	Finished Floor Level
NF DTU:	Documents Techniques Unifiés, Unified Technical Documents (French standards)
PPSPS:	Individual Health Protection and Safety Plan (from French : Plan Particular de Sécurité et de Protection de la Santé)
PRE:	Environmental Requirements
PTW:	Permit to Work
GNT	Gravel Non treated
IO	The ITER Organization
NCR	Non Conformance Report
SPMT	Self-propelled modular trailer
SWL	Safe Working Load
HEL	Highly Exceptional Loads
VVTS	Vacuum-Vessel Thermal Shield
T&C	Test & Commissioning
PWD	Precipitation water drainage
BBSG	Béton bitumineux semi-grenu (type of Asphalt)

4 Reference documents

- [1] Basic views of the expected motorized door location in B55
- [2] Chemical product management procedure, (ITER_D_W6EREY)
- [3] CAD instructions for companies, (ITER_D_9PNNM4)
- [4] Permit to Work Procedure, (ITER_D_UBET39)
- [5] Access procedure, (ITER_D_6Z6SN9)
- [6] Internal Regulations, (ITER_D_27WDZW)
- [7] PGCSPS Volume 1 – Health and Safety General Coordination Plan for the construction of ITER Project,(ITER_D_T6V4RP); and, PGC Annex 1 - Specific measures for preventing the spread of Covid-19 on the worksite (ITER_D_36M2XY),
- [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_ Y4CTM6)
- [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, ref. (ITER_D_43UJN7)
- [14] Housekeeping instruction, (ITER_D_XJKR3R)
- [15] ICPE pre-screening memorandum, (ITER_D_XJ8K6C)
- [16] Environmental Respect Plan, English template, (ITER_D_9FUP5C)
- [17] Working instruction for intervention in case of Pollution or Overflow of the rainwater drainage network, (ITER_D_NEBB44)
- [18] Lifting Instruction (ITER_D_YJ9MBD)
- [19] Work at Height Instruction (ITER_D_Y5X8R7)
- [20] Input for structural design
- [21] Input for electrical design
- [22] ITER Procurement Quality Requirements (ITER_D_22MFG4)
- [23] Procedure for management of Nonconformity (ITER_D_22F53X)
- [24] Procedure for the management of Deviation request (ITER_D_2LZJHB)
- [25] Quality Classification Determination (ITER_D_24VQES)
- [26] Requirements for Producing Quality Plan (ITER_D_22MFMW)

5 Estimated duration

The Time for Completion of the Works is specified in the Contract. Below, the tentative schedule expected:

- T0 (beginning of January),
- T0+1weeks: motorized door ordered,
- T0+4weeks: design approved,
- T0+4weeks: (Beginning of February): start of works on site,
- T0+12weeks: Motorized door installation with T&C (Beginning of March),
- T0+13weeks: Removal of the temporary protection, finishing and cleaning,
- T0+14weeks: end of the works, taking over signed.

6 Works Description

6.1 B55 motorized truck door creation

A large motorized door, w.7.5xh.7m, is to be built on the North west wall of the building 55 (B55).

The aim of this works is to create sufficiently big access to the west side of the building 55 (B55) to be able to deliver all types of VVTS in the two first areas, which will be transferred to IO beginning next year. The aim is to create a workshop to repair the VVTS prior to send them to the B13 for assembly works.

The works shall be done with a certain methodology and with temporary protection means to not disturb the clean industrial works on going in the building 55 (B55).

The below figure is showing the location of the works.

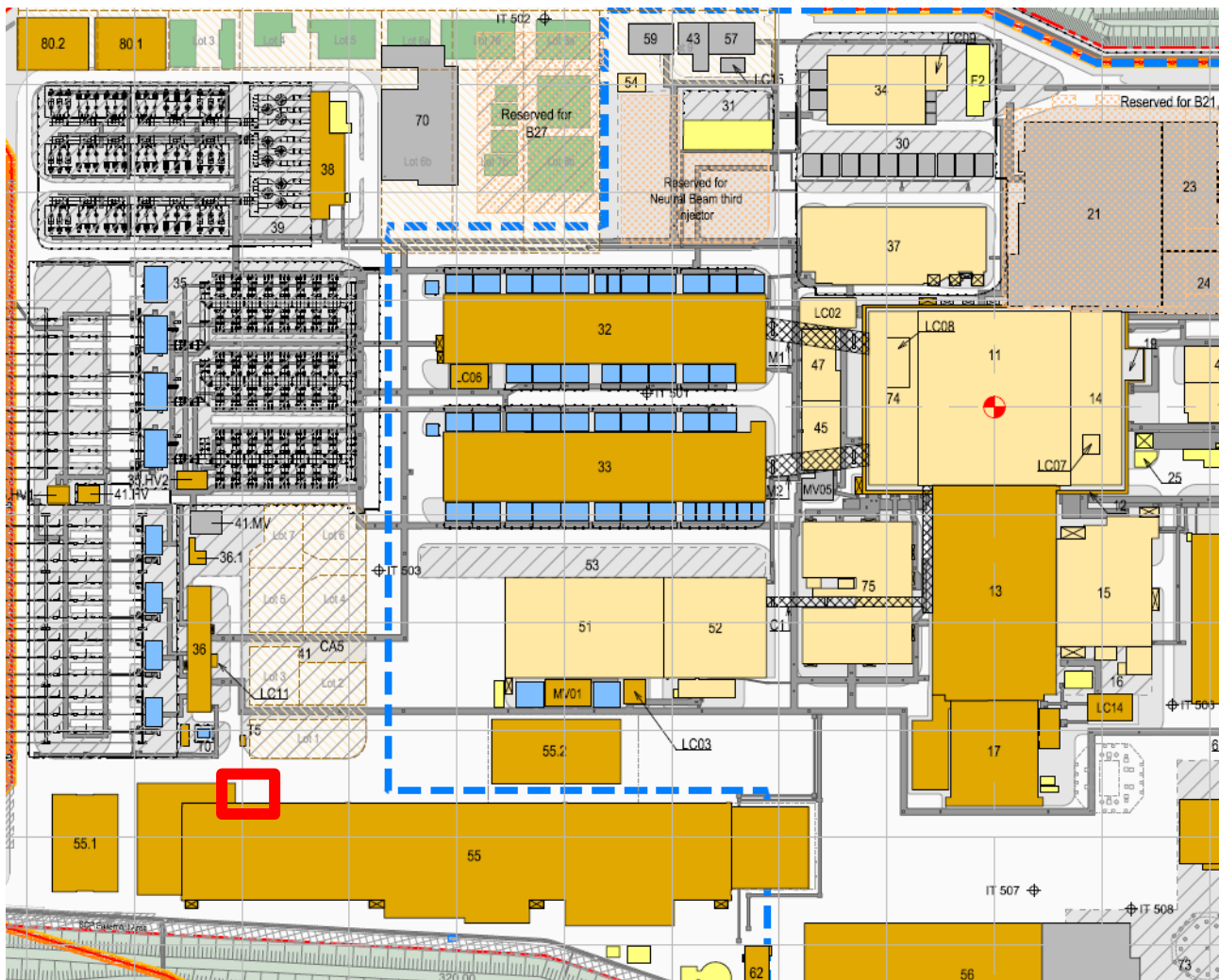


Fig.1- Location of works (red square)

6.2 General Requirement for the works

The Contractor 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. For any additional requirements, refer to the relevant sections in this technical specification.

The Contractor shall undertake his activities in accordance with good industry practice relevant 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 mean, temporary works, etc.).

All installations delivered under this Contract shall be undertaken in accordance with the manufacturers' recommendations and shall comply with the applicable norms & standards.

The buildings shall be designed to withstand the local climatic conditions e.g. earthquake, snow and wind according to the Eurocodes (mainly 0, 1, 2, 3, 7 and 8).

The secondary steel structure shall be designed to be perfectly integrated to the main existing building.

The storage facility 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 B55 new door shall be organized to minimize the impact on the existing B55 and to ensure the access and use of the existing building by the others. The clean industrial activities inside the current B55 building remain primary concern at all times.

The Site Supervisor(s) and the excavator driver(s) shall be AIPR certified to be able to work in the vicinity of the existing networks.

The Contractor shall be responsible for cleaning at his expense the Site access roads in case the Works make them dirty or soiled with regard to the weather conditions and the frequency of use. During the dry periods, the Contractor shall implement measures to limit the spreading of dust.

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 authorize landfill.

The Site shall be appropriately clean by the Contractor on completion of the Works on the ITER site.

In due course, the Contractor shall provide the IO with the required by the law and as detailed in this document control tests reports and results for the deliverables under the Works. All statutory initial inspections shall be performed by a 3rd party (independent checker) validated in advance by the IO. These records shall also form a part of the as-built documentation submitted on completion of the works.

6.3 Design works

Using the attachment [1] and [20], the contractor shall design the secondary structure to be inserted in between the files 5 and 6 of the main building 55 structure. This secondary steel structure shall be able to bear the loads coming from the motorised truck doors and shall be allow the fixation of the cladding complex.

The contractor shall provide a calculation note to demonstrate the design of the secondary steel structure and its fixation with a justification note granting that we are not damaging the existing structures: slab and main structures.

The Contractor has to integrate in its calculation note the input data coming from the selected supplier for the large motorized door. It is recommended to select the supplier very quickly and then to order the door as soon as possible at the beginning of the contract after the approval of the IO due to the current extended delivery time for such equipment.

The contractor shall then provide several drawings:

- Secondary steel structure drawings with details on the singular points and interfaces with existing structures. This set of drawings shall represent the modification of the bottom concrete wall,
- Cladding drawing with details views,
- Motorized door drawing,

Using the attachment [21], the contractor shall design the power line to supply the motorized doors including: CANECO calculation note, Electrical drawings and synoptic with the update of all the operational B55 documentation, which will be provided by the owner of the building. The contractor shall forecast the installation of a breaker dedicated to the motorized door in the existing electrical cabinet LV-CU-0003 located on the North west corner of the building. Using the existing cable tray, the length of the cable should be approximately 65ml.

Using the attachment [11], a dedicated external infrastructure drawing shall be produced to provide details for the gutter creation with its connection to the existing pluvial drainage manhole.

6.4 External works

6.4.1 Pluvial gutter creation

Before to start works inside the building 55, the Contractor shall create a continuous pluvial gutter all along the future location of the door, on the full width + 50cm on each side.

On completion of the Works, the new precipitation water drainage networks shall be checked to prove its perfect functionality. The Contractor shall performed a video inspection (ITV) and a tightness test of the network according to the method L (testing by the air). Network testing with the method W (testing in the water) shall be limited to control the manholes and pipelines in case of reported failures following the method L testing. These controls of the flow of water shall be carried out throughout the whole course of the PWD network. The ITV shall be performed up to the main collectors of the area. In case of any obstructions and/or solid materials presence, it will be the duty of the Contractor to clean the network and test it again.

The Contractor shall avoid to pollute the existing PWD – refer to [11].

PWD system requirements – refer to [1]:

- i. Proper removal of the asphalt on the footprint of the gutter and the collection pipe;
- ii. Installation following supplier recommendation of 8,5m of gutter with iron cast gird with a D400 class. The internal width of the gutter shall be minimum 150mm (150HD),
- iii. Installation of PVC CR8 D125 pipe to interconnect the new gutter and the existing pluvial drainage manhole number: 6355PD-RG-0004. Backfilling of the pipe using cement grave to allow heavy circulation on the top.
- iv. Proper finishing shall be done in the existing manhole,
- v. Creation of a water-collecting chamber 40x40cm with an iron cast grating D400 installed at the lowest point of the delivery platform to collect the rainwater.
- vi. Installation of D125 iron cast pipe, approx. length 15ml, to interconnect the new 40x40cm collecting manhole and the existing pluvial drainage manhole number: 6355PD-RG-0004. Backfilling of the pipe using cement grave to allow heavy circulation on the top.
- vii. On completion of the PWD network Works / section of the Works (as appropriate), the above requested tests shall be performed.
- viii. Refurbishment of the road capping layer with GNT and refurbishment of the asphalt,

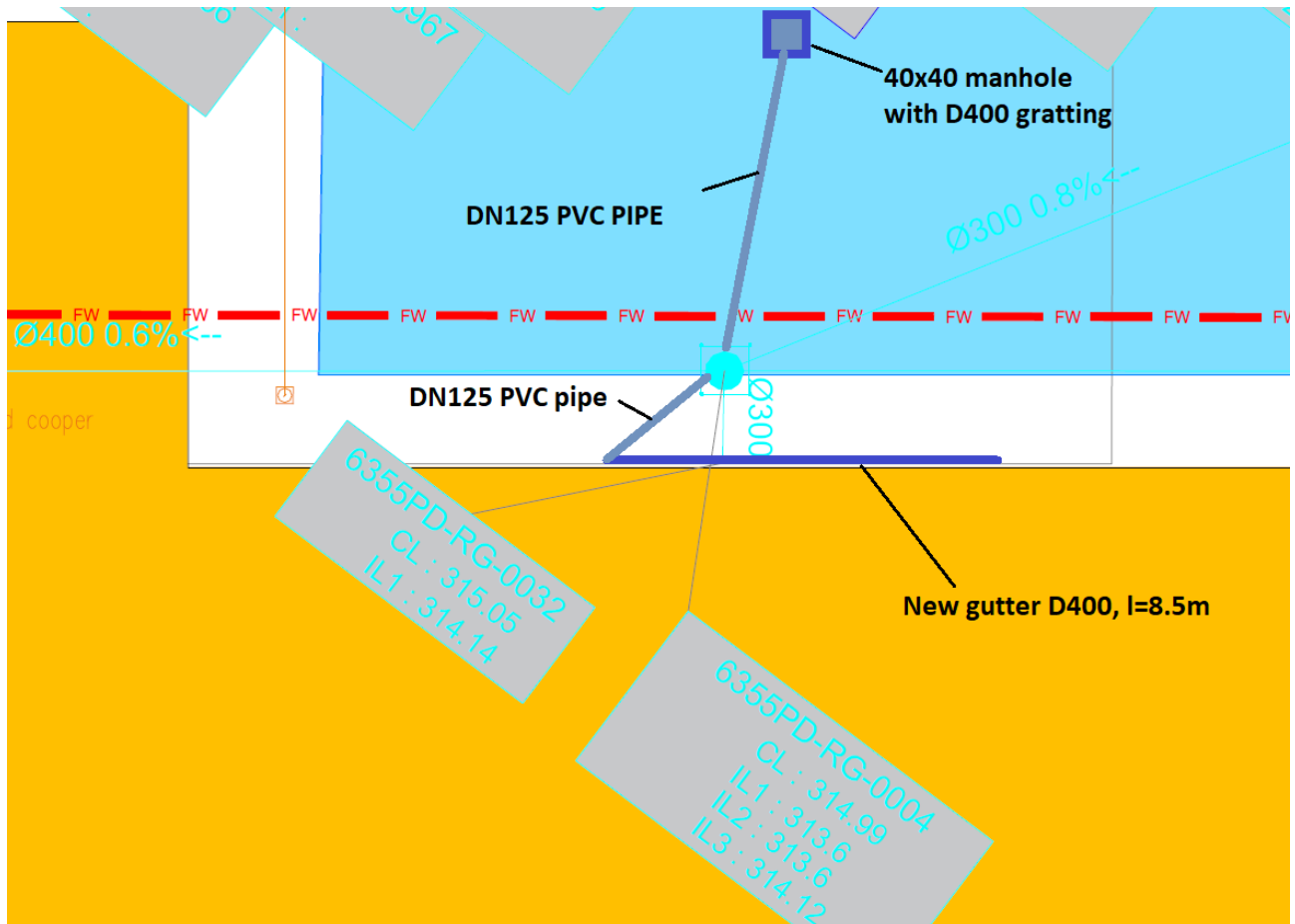


Fig.2- Schema of the pluvial drainage works to be done

6.4.2 Delivery platform area improvement

The contractor shall arrange the delivery area in front the motorized door to ease the truck access and rotation as follow:

Arrangement works requirements:

- ix. Lower 13ml of existing kerbs with a proper finishing,
- x. Removal of 100m² of existing backfilling against the current T2 kerbs with its spreading and compaction in the pathway next to the area,
- xi. Final levelling to direct the water to the new chamber to collect rain water and compaction of subgrade below the backfilling removed,
- xii. Realization of asphalt of 8cm of BBSG on the compacted subgrade,
- xiii. At the end of the works, a full cleaning of the asphalted area shall be done.

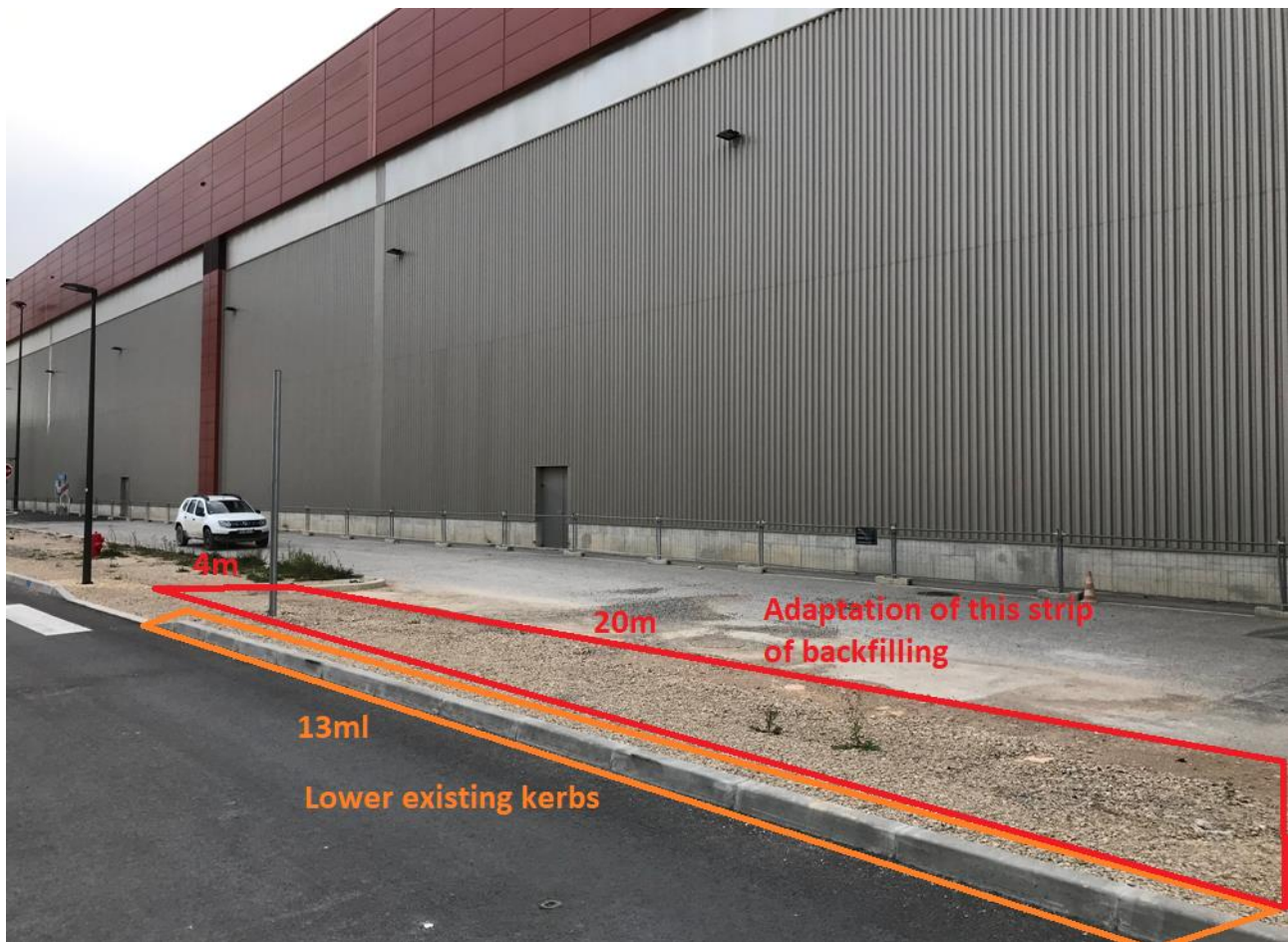


Fig.3- Schematic view of the platform works to be done

6.5 Preparatory works

6.5.1 *General requirement for the works*

The building is a clean environment building with important industrial activity on going. The Contractor shall forecast the works with a methodology minimizing the impact on the building users and the internal atmosphere of the building, below a proposal to be followed as much as possible:

1. Starting by external works to prevent any water and dust ingress inside the building,
2. Installation of an internal airlock to remove the lower reinforced concrete wall working from outside and then installing temporary wooden protection,
3. Realization of the secondary steel structure keeping the current cladding closed with only electrical equipment,
4. Hoovering of all the dust in case of drilling,
5. After door installation, opening of the cladding at the latest moment.

At the end of the works a deep cleaning of the area shall be performed.

The Contractor shall endorse the above proposed methodology and adapt it to its works and design. All additional temporary means to protect the building and its environment will be at the expense of the contractor.

6.5.2 *Lower reinforced concrete wall removal*

As described in the previous chapter, prior to start the works, the Contractor has to create a sufficient and robust clean airlock to prevent any ingress during the activity.

The Contractor shall then remove all the wall working from outside and using tools generating the less dust and vibration possible.

The contractor is responsible for the evacuation of all the concrete blocks in an authorized disposal area at its expense and shall clean the area continuously in accordance to the progress and again at the end.

Then, the Contractor shall perform finishing on the sides and on the bottom of the walls cut using appropriated technical mortar after the its validation by the IO.

Nota: In accordance to the progress of the works, an external solid wooden protection shall be installed waiting the installation of the door. This protection shall remain until the end of motorized door installation.

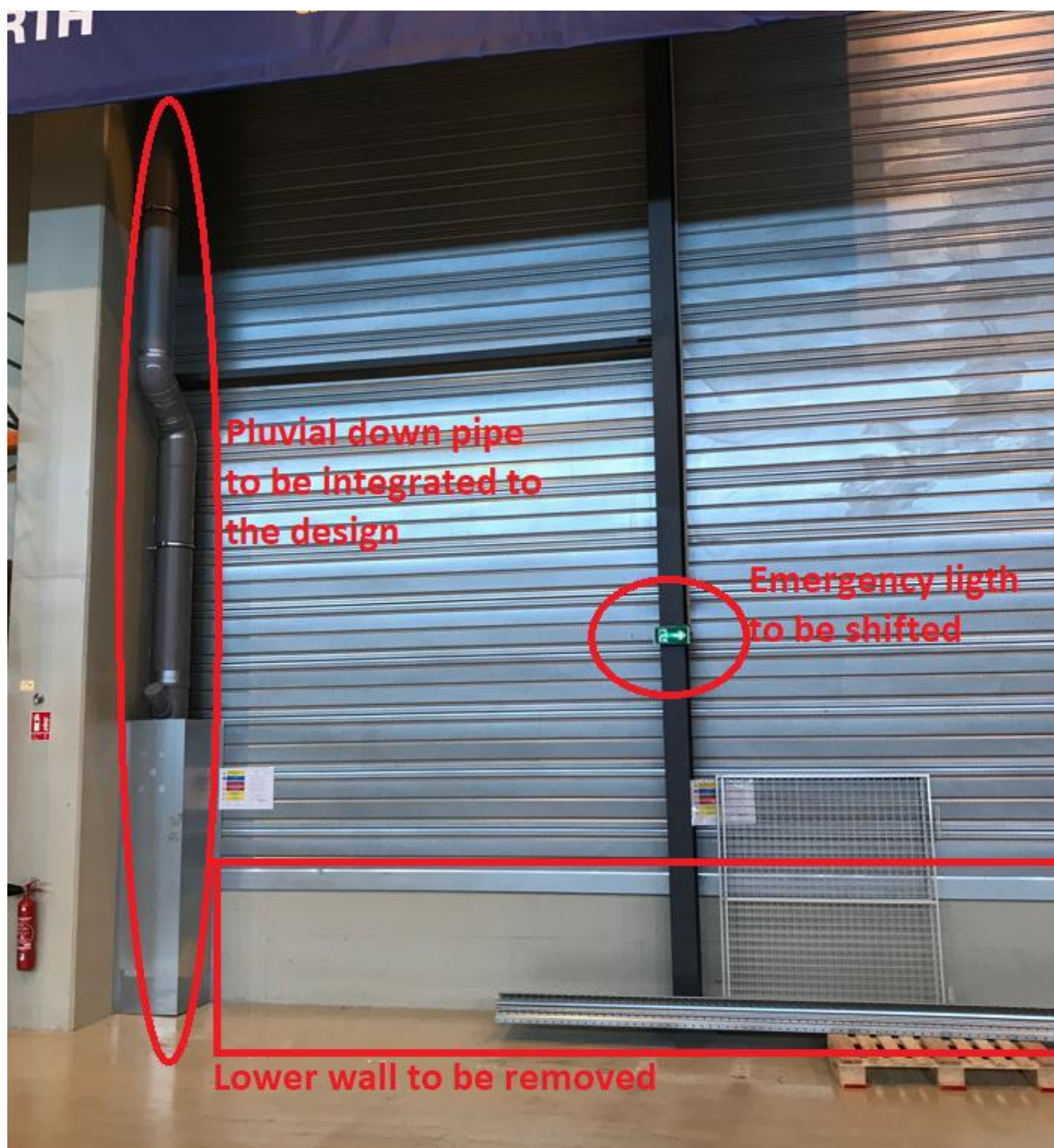


Fig.4- Schematic view of the internal fittings to be managed

6.5.3 *Internal fittings*

Prior to start the works, the Contractor has to definitely move the Emergency light panel on the concrete column of the file 6 of the building. For that purpose, the contractor is responsible for the rooting, the cable modification and the fixation of the device. This works shall be performed by a certified electrician under a dedicated lockout permit. At the end of the Works, a legal initial inspection shall be performed by an independent checker (Viel) to prove the good execution of the Works.

In addition, depend on the secondary steel structure design, the Contractor is responsible for the protection or modification of the pluvial down pipe of the building 55 roof located along the concrete column of the file 5.

6.5.4 *Removal of the existing secondary steel structure*

The contractor shall remove properly the existing structure trying to keep the existing cladding, at least the first skin to prevent exchange of air between indoor and outdoor.

For that purpose, the Contractor could have to remove the external cladding skin and the insulation to access to the fixation of the first skin on the steel column.

The cladding panels and the insulation shall be properly stored and protected against external condition to be able to reuse it at the end around the door.

The secondary steel structure once removed shall be taken out of the site by the Contractor.

6.6 **Installation and finishing works**

6.6.1 *Installation of the new secondary steel structure*

The Contractor is responsible for deliver and install the secondary steel structure inside the building using appropriate methodology and means to mitigate as much as possible impact on building users.

The external face of the new steel structure shall be perfectly aligned with the existing to grant the homogeneity of the façade once the cladding will be reinstalled.

The Contractor is responsible for its fixation on the existing structures (concrete slab, concrete column and main steel structure) as per the approved design justifying the absence of damages or weak point on the existing. The bolted fixation shall be privileged.

Nota: The steel structures shall be painted with an anti-corrosive protection coating system, RAL 7015 (slate grey), AFNOR classification: family I Class 4a, no particular fire resistance is requested.

The below figure is given an example of large motorized door integration in the north façade of the building – extract of drawings in reference [20].

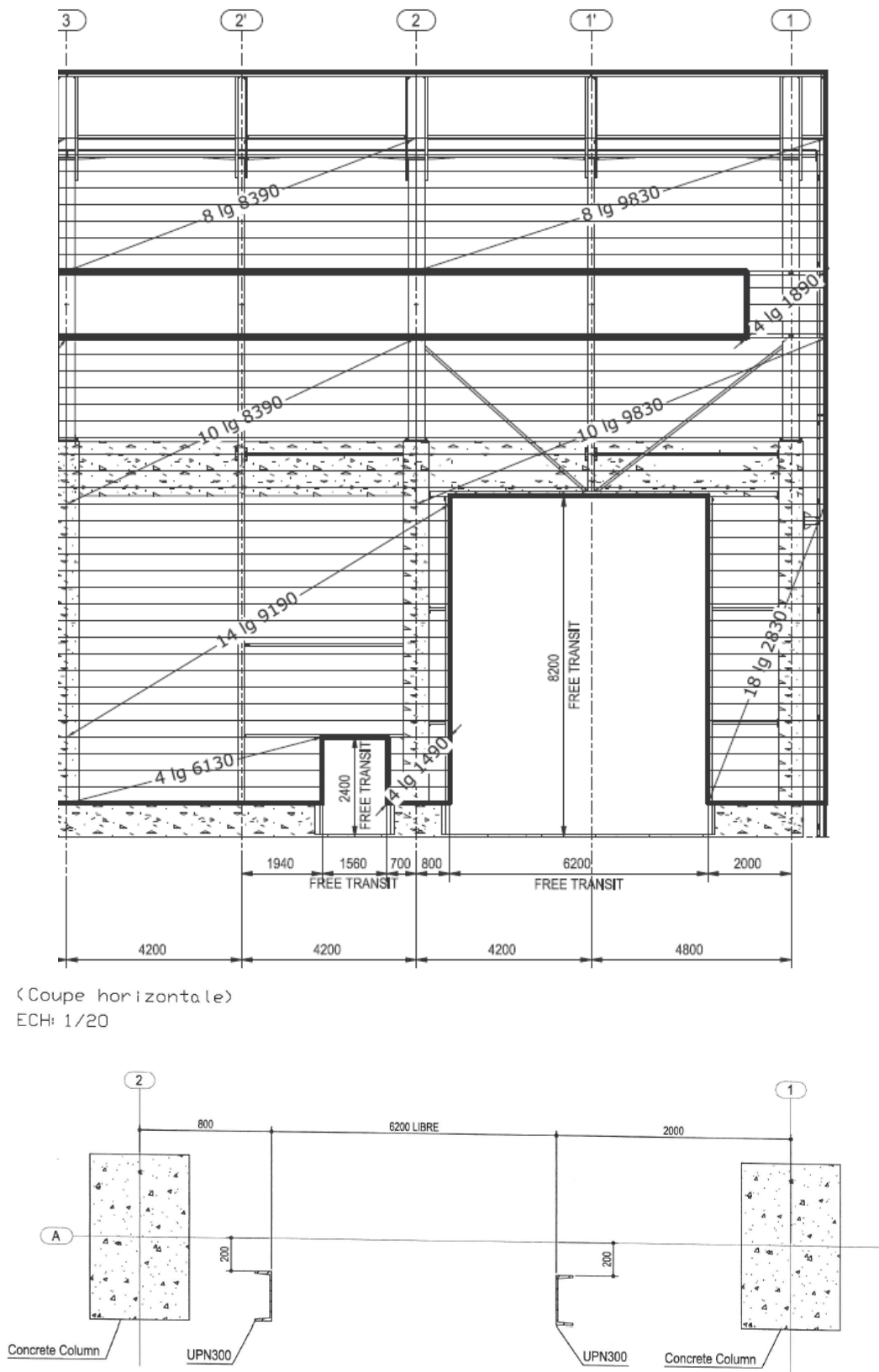


Fig.5- Example of Megadoor integration in the North facade

6.6.2 Large motorised door

The building shall be equipped with one (1) large motorised door providing an access for the vehicles delivering large components to the workshop as VVTS. It shall be installed in the North-West corner of B55 extension using the new secondary steel frame created for that purpose – between the files 5 and 6, see below figure.

The large motorised door shall meet the following requirements listed below:

- i. The clear opening dimensions shall be: W=7.5m x H=7m.
- ii. Essential Characteristics according to EN- 13241-1 + A1:2001:
 - o Thermal insulation shall be U-value < 2,4 W/m²K;
 - o Water tightness: Class III minimum
 - o Air tightness: Class II minimum
 - o Wind resistance: Class IV minimum
- iii. The flame retardant shall be C-S2-d0;
- iv. The colour shall be RAL 7004 (Grey) or similar, inside & outside,
- v. The structure shall be CE marked.
- vi. Tubular Motorization shall be 400V, 50Hz and 3 phases.
- vii. Protection level shall be IP 55.
- viii. Door shall be equipped with adequate strip seal/gaskets to prevent the ingress of water.
- ix. No floor rail type or sectional door will be acceptable.
- x. The door frames shall not extend into the internal building space and shall not clash with the overhead crane and any other equipment.
- xi. Operating mode shall be by a sustained pressure button for the descent/closing and a single push for the rise/opening of the door.
- xii. The door shall be potentially monitored (open/closed) and controlled via BMS in the future (out of the scope).
- xiii. An orange flash light (LED type) shall be installed on both sides (external and internal) of the door to indicate when the door is in operation. It shall turn on few seconds before the door's movements commence.
- xiv. A safety edge shall be installed.
- xv. A floor marking at the door way shall be painted with yellow & black strips (50cm minimum) with a required width in accordance to the applicable regulations.
- xvi. A spot lights (LED type, + 50 lux light) shall be installed outside the door to light the doorway area when the door is in operation, it shall turn on few seconds before the door movement commencement.

The Contractor shall make sure the doors are conformed with applicable norms and provide the suitable documentation & certificates in order to facilitate the statutory inspection, which is part of the Contractor's scope before taking over of the workshop (the report shall be free from comments from the third party) and according to all regulatory applicable standards (in particular NF EN 13241-1 and ART R4224-13 of the *Arrête 21/12/1993*). Start in service report without observation has to be provided by the Contractor. The statutory initial inspection shall be performed by a third party validated by the IO.

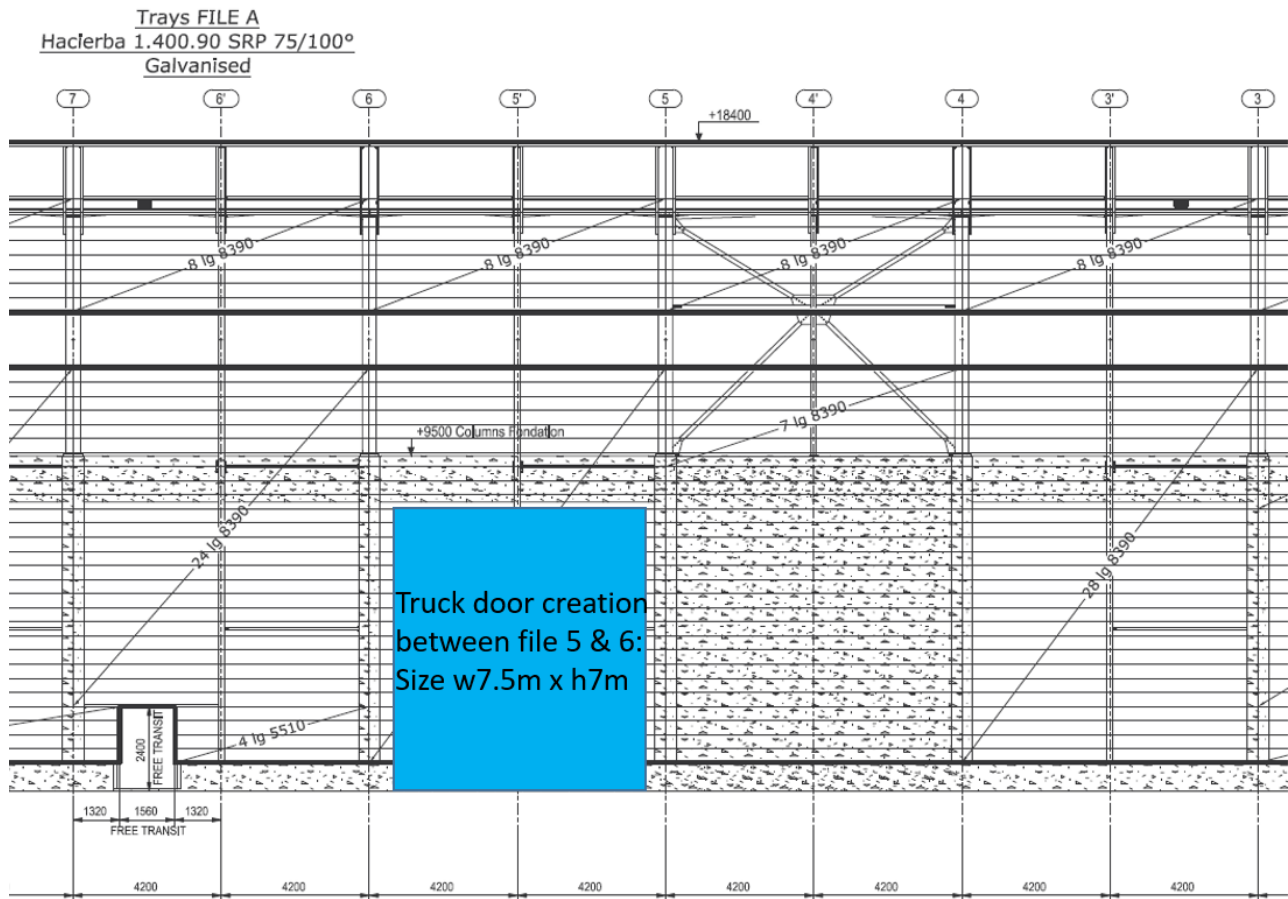


Fig.6- Schematic view of the motorized door inserted in existing wall

6.6.3 Reinstallation of the cladding complex

Using the existing cladding complex properly dismantled and stored previously, the Contractor is responsible for its reinstallation on the secondary steel structure from outside using appropriate fixation devices and methodology.

To keep a visual homogeneity, the cladding shall be perfectly aligned with the existing one, the cut shall be reduced at the maximum.

The Contractor shall follow the vertical cladding complex – refer to details given in [20]– with the main characteristic:

- i. First (inner) skin: galvanized steel tray cladding: HACIERBA 1.400.90 SRP perforated ep. 75/100,
- ii. Intermediate: 90 mm insulation,
- iii. Second (outer) skin: Vertical cladding RAL 1733 (champaign): Hacierba 5.180.44 HB ep.75/100,
- iv. Ribs positioned vertically,
- v. Same fixation than used initially in particular the rigth coloris for the outer skin.

Details about the cladding complex are given in reference [20].

In addition, in between the files 6 and 6', the Contractor has to create a fume exhaust hole with caps on the both side to connect the smoke exhaust pipe for thermal engine. The diameter of the duct shall be 315mm with an extra length of 300mm inside the building, rigid duct in galvanized steel, height

of installation: above the concrete wall at approx. 1m. The crossing of the wall by the duct shall be properly sealed to grant the airtightness and the waterproofing of the solution.

On the external size, the gird shall be an anti-rain gird made of a galvanized steel with an anti-intrusion net.

On the internal side, a resistant removable airtight cap shall be installed on the duct to prevent external air ingress when the aeration system is not used.

6.6.4 Electrical works

As described in the chapter 6.3, the Contractor is responsible for the design, supply and installation of the power line to supply the motorized door from the existing electrical cabinet LV-CU-0003 located on the North west corner of the building.

Electrical works requirements:

- xiv. After a lockout permit delivered by the building owner, the contractor shall add a new breaker in the electrical cabinet following the electrical calculation note done with the electrical load given by the door supplier,
- xv. Pulling and fixation of the cable from the existing electrical cabinet to the new motorized door cabinet using as much as possible. When necessary, in the absence of existing cable tray, the contractor shall protect the electrical cable using inox tube with its appropriate fixation.
- xvi. 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.
- xvii. All installations and equipment shall be CE marked.
- xviii. Each equipment shall be tagged with an ITER numbering provided by the IO and the owner of the building.
- xix. At the end of the Works, a legal initial inspection shall be performed by an independent checker (Viel) to prove the good execution of the Works. The updated electrical cabinet drawing shall be printed and positioned in the electrical cabinet.

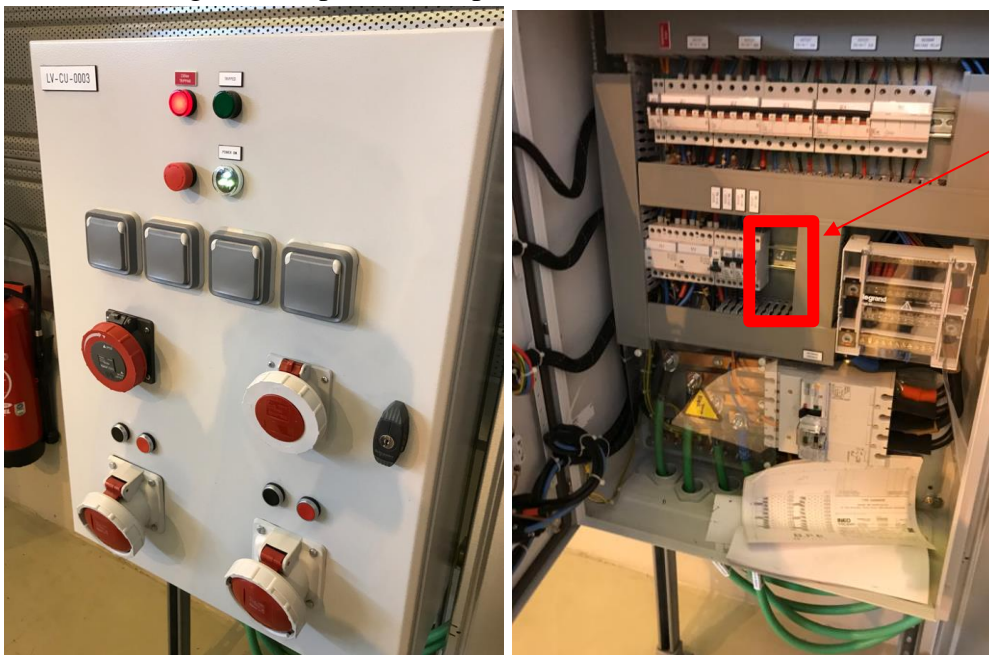


Fig.7- Site Pictures of the electrical cabinet LV-CU-0003

7 Site Constraints

7.1 Road access

Access to the worksite area will be possible via the existing roads located on the South of the ITER worksite; entrance B and D can be used.

Accesses on the ITER platform is subject to frequent modifications with temporary closures.

7.2 Interfaces

The works area location is surrounded by different areas with constraints:

- The North side of the area is a dead-end road accessing to one B55 extension delivery door (use very limited),
- On the south side, it is the main work hall of the building 55 where clean industrial activities are ongoing,

A coordination meeting will be held on a weekly basis to adapt the contractor works to the site constraints.

Due to the constraints listed above, the Contractor shall forecast as much as possible to perform their different works with a methodology minimizing the impacts on surrounding areas, building 55 users and building 55 atmosphere.

Any impact on a surrounding area shall be addressed as soon as possible and shall be validated by the Health & Safety Coordinator, the owner of B55 and the coordinator of the area.

The figure below summarizes the above points:

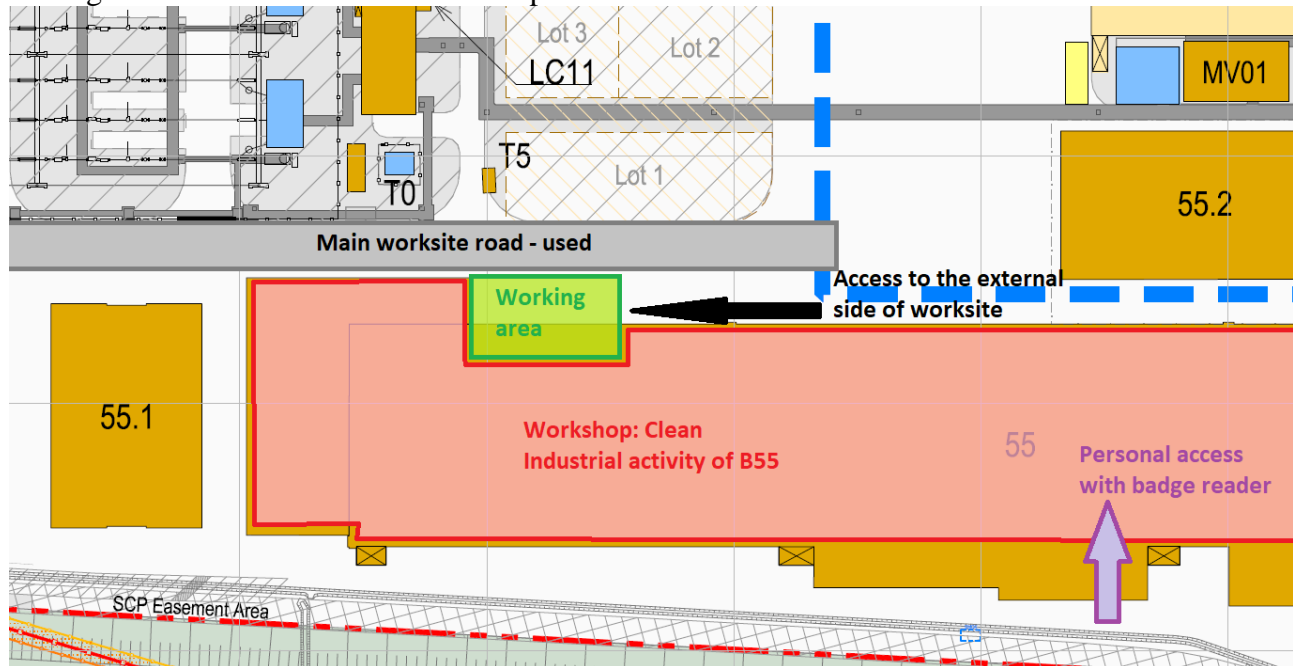


Fig.8- Schematic view of the working area and the surrounding activities

7.3 Electricity provision

The Contractor will be required to provide its own power generator. In the case the IO can provide an electrical connection to a nearby transformer, the temporary electrical worksite installation shall be foreseen in the scope of the Contractor. The IO will notify the Contractor about the electricity provision at the design phase. Same goes for the supply of raw water.

7.4 Installation

The Contractor is fully responsible for the design, delivery, implementation and test of the new motorized door, including but not limited to:

- Assessment of the suitability of access to the location of the door to be constructed and preparation of the works area;
- Any administrative formality to enter and work on the ITER Site;
- The supply of all the furniture and all necessary tools and equipment for the works until the taking over;
- Any container or temporary office to allow the workers to gather, drink and study the layouts of the structure, as well as chemical toilets if necessary. Potable water provision is also in the scope of the Contractor. The IO will provide access to sanitary block with shower and toilets but no lockers and the access to the worksite cantine which is at 10 minutes walking from the working area.

8 General conditions and requirements

8.1 Applicable codes and standards

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 industry practice and are applicable to the Contract.

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).

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 only use products and materials that comply with said standards and be able to present evidence of compliance on ITER Organization request.

8.2 Coordination of the works

Coordination meetings shall be held at the ITER Site on a weekly basis, at which the Contractor, the ITER Organization and the Health & Safety Coordinator shall be represented.

At the meeting, the Contractor shall present a report showing its current and foreseen activities (with 2-week look-ahead) versus the current Schedule of Works. The Contractor shall record the minutes of the meeting and distribute them to all Parties who attended the meeting within 2 working days following the meeting.

8.3 Site facilities, cleaning and maintenance of the site

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 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 ITER Organization with the direct contact details of this person and/or an on-call duty telephone number.

The temporary site facilities shall be located in the area close to the working area. In the case where the Contractor plans to connect its facilities to the existing networks, it 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 observation.

The roads and the areas around the worksite footprint shall be maintained in a constant state of cleanliness. The Contractor will take all necessary measures (scrubber, scraper, sweeper, karcher...). Should any said cleaning fail to be performed, it shall be done by a third party at the expense of the Contractor.

The Contractor shall be in charge to ensure:

- The permanent site clean and tidiness sustainability pavement used and rehabilitation of the site after work and dismantling of facilities;
- Removal, as and when they are produced, of the improper cuttings, rubble, demolition products, packaging, etc., produced by itself or by its subContractors;
- The cleaning of its Works and existing structures damaged by its work (cleaning or restoration with appropriate products) during the works period;
- Thorough general cleaning prior to Taking-Over.

The Contractor shall, prior to Taking-Over by the ITER Organization, ensure that all the Contractor's temporary facilities and plant are removed from the Site.

8.4 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 existing facilities.

In case of any damages to the existing facilities and/or third party assets caused by the Works execution, the Contractor shall cover the cost of the remedial works.

8.5 Health and safety requirements

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:

- Internal Regulations [6];
- General health and safety coordination plan (PGC SPS) Vol. 1 - IO&F4E [7];
- Housekeeping Instruction [14];
- Lifting Instruction [18];
- Work at Height Instruction [19];

The ITER Organization has placed a contract to provide the services of a Health and Safety Protection Coordinator (HSPC) during the construction works. This contract is under the authority of the ITER 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 site, reviews the specific health and safety plans (PPSPS) and co-ordinates activities from a health & safety perspective.

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

The Contractor and its subContractors 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 subContractors) prior to the start of the Works.

Prior to the start of the on-site works, the HSPC performs a Common Inspection with the Contractor and its subContractors, in accordance with R4532-13 and R4532-14 of the French Labour Code.

All the Contractor and subContractor staff must follow a newcomer's safety training within 6 working days after the issuance of a permanent access badge. It does not relieve the Contractor of its responsibilities with regards to the training of its staff for their work stations and the general safety rules in accordance with articles L4141-1 and following of the 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.

In case the works involve the use of chemical products, the Contractor shall comply with the Chemical product management procedure [2] and fill in a chemical product acceptance form.

8.6 Nuclear Safety - Environmental protection

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

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

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

This contract work is PIA since it is part of PIC preservation.

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 makes the necessary provisions for training in order to maintain the required skills and qualifications for its staff and, whenever necessary, to develop them, and – in case these activities are carried out by sub-Contractors – ensures that its sub-Contractors make analogue provisions for their own staff.

Furthermore, the ITER Policy on Safety, Security and Environment Protection Management – refer to [13], presenting the strategical objectives of the ITER Organization 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 and its sub-Contractors.

An Environmental Respect Plan (PRE) shall be produced using the ITER template [16] 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 submit a monthly environmental report, at the latest, on the 5th day of each month forming part of the monthly report, containing the information for the previous month.

8.7 Access to the site

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

Regular access hours for the ITER construction site are from 5:30 to 22:30 (Monday to Saturday).

Access to the ITER Site outside regular access hours shall be possible for specific activities.

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

8.8 Permit To Work

Prior to the start of any Works on the ITER Site, a Permit To Work must be obtained in accordance with the Permit To Work Procedure [4].

8.9 Language

All communication with the ITER Organization shall be in the English language.

The Contractor shall ensure that there is at least one person present on the construction site at all times capable of communicating in English.

8.10 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 [22].

Prior to commencement of the Works, a Contractor's Quality Plan must be submitted for the IO's approval. It shall provide the evidence of the above required quality system and describing the Contractor's organisation for the Works; the skill of their personnel involved in the Works / project; any anticipated sub-contractor(s) and their scope; and give the details of who will be the independent checker of the activities / deliverables – refer to [Procurement Requirements for Producing a Quality Plan](#) [26].

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 [23] and [Procedure for the management of Deviation Request](#) – refer to [24]. 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 9.5.3.

The project will be realised under Quality Class 3 as described in [Quality Classification Determination](#) - refer to [25].

9 Contractor Deliverables

9.1 List of planned document deliverables

At the start of the contract, a list of planned document deliverables shall be established between the ITER Organization and the Contractor. For this purpose, at the latest 2 weeks after the signature of the contract, the Contractor shall submit a draft list of deliverables and their planned issue date using the ITER template.

9.2 Document and data exchange

All deliverables (except drawings and diagrams in PDF format) shall be transmitted through the ITER Document Exchange Area in IDM.

Drawings and diagrams in PDF and native format shall be exchanged too.

9.3 Document format

All deliverables shall be provided in electronic format (PDF and native file) through IDM or SMDD. The as-built file shall also be provided on CD-ROM or USB key and in paper format (3 copies). Drawings shall comply with reference document [\[15\]](#).

PDF documents shall have text recognition and include bookmarks.

All drawings produced by the Contractor shall comply with the CAD instructions for companies [\[3\]](#).

All documents shall be provided in English, unless stated otherwise in this document. The ITER Organization shall provide the Contractor with the AutoCAD files of the up to date version of [\[12\]](#) which on completion of the Works shall be updated by the Contractor accordingly.

9.4 Document review and approval

The Contractor shall allow for a review period by the ITER Organization of 20 working days. The review period shall start after the upload and the Contractor's signature of the document in IDM.

In case the ITER Organization disapproves the document or requests a revision, the Contractor shall update and resubmit the deliverable within 10 working days, taking into account the comments issued by the ITER Organization.

9.5 Preliminary list of deliverables

9.5.1 Pre-design stage

The Contractor shall provide the following documents prior to the start of the design works:

- Operational flow chart;
- Environmental Respect Plan (refer to [\[10\]](#));
- The documentation schedule;
- Detailed Schedule of Works;
- Quality plan;
- List of subcontractor(s), if any;
- Independent checkers for the regulatory check,

9.5.2 Preliminary design stage

The Contractor shall provide the following documents prior to the start of the Works (design phase):

- Safety Plan (PPSPS) for the Contractor and each sub-contractor(s) - submitted to the ITER Organization no later than 8 working days prior to the Works commencement;
- Access requests for personnel – submitted to the ITER Organization minimum 8 working days prior to the Works commencement;
- Permit to Work Request including all the construction documentation - submitted to the ITER Organization no later than eight (8) working days prior to the Works commencement;
- Test study reports;
- Control plan;
- Design report / technical specification for all civil Works;
- Preliminary design drawing for the civilworks;

The construction work shall not start before the above documents have been approved by the ITER Organization.

9.5.3 Construction design and works

The Contractor shall provide the following documents during the execution of the construction works:

- Detailed Schedule of Works – updated accordingly to the Works progress on a monthly basis;

- Approved construction design drawings;
- Documentation defining the materials used and origin and justification of their characteristics;
- Results of control tests performed by the Contractor during the execution of the work;
- Reports of tests (external body) and approvals;
- Statements relating to the hold points for control by the ITER Organization;
- Non-Conformance Reports (NCR) register and status - to be updated and issued on a monthly basis;
- Request for Information (RFI) reports register and status - to be updated and issued on a monthly basis;
- Monthly progress reports;
- All required documents concerned with the Contractor Quality Plan and Safety Plan or the environmental specifications of the ITER Organization or necessary to the traceability of the work.

Works construction without ITER Organization approval or in the absence of approved documents and samples shall be sanctioned by a stop work order until the situation has been rectified. All consequences of the work stoppage shall be borne by the Contractor.

A Monthly Report shall be submitted by the Contractor for acceptance by the ITER Organization 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 (refer to Section 7.11.3 below) showing actual progress against planned progress;
- In the case where 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 Deviation Requests submitted by the Contractor;
- A list and status of all NCRs affecting the Works;
- A list and status of all ITER Organization requested Variations to the Works;
- A list of health and safety statistics;
- A number of worked hours on the Site;
- All accidents (including environmental issues / observation sheets) occurring on the Site (or elsewhere if connected to the Project);
- 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;
- Total number of workers curves as well as the number of hours worked per week;
- A list of environmental statistics 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.

9.5.4 *As-built file*

After the execution of the Works, and prior to Taking-Over, a complete as-built file shall be provided by the Contractor, including:

- Detailed as-built drawings taking into account any change implemented during construction. The plans shall be revised as a final "as-built" version;
- Final design calculations;
- Register of all NCRs and RFIs reports raised during the execution of the contract (including the reports);
- Results and statements of the tests on site;
- Final topographic surveys, with DWG versions and statements of the Works carried out;
- Auto control tests showing the results of the control tests performed by the Contractor during the execution of the Works;
- Commissioning report showing the results of the control tests performed by the Contractor during the execution of the work;
- Worksite pictures folder documenting the as-built status of the Contractor deliverables.

The documents listed above shall be formally submitted to and approved by the ITER Organization. The Contractor shall allow for a review period by the ITER Organization of 10 working days.

9.5.5 *Number and format*

All deliverables shall be provided in electronic format (PDF and native file) through IDM.

Drawings shall comply with reference document.

All documents shall be provided in English, unless stated otherwise in this document.

10 Taking-over

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

The Works shall not be considered as to be completed for the purposes of taking-over until the as-built documents have been provided by the Contractor.