

Summary of renovation works for Building E

The United Nations Office in Geneva (UNOG), Switzerland, located at the Palais des Nations, is the largest United Nations Office in Europe, providing conference support and facilitating the multi-lateral international diplomacy of the worldwide community. It is located within the 46-hectare Ariana Park.

The United Nations General Assembly approved the establishment of the Strategic Heritage Plan (SHP) which includes three major components; the construction of a new office building (building H); the renovation of the Historical Buildings of the Palais des Nations (Buildings A, B, C, D and S) which were all constructed before 1950; and the refurbishment and partial dismantling of building E which was originally constructed in the early 1970's.

Building E is an independent, free standing building consisting of a 3-storey and basement Podium and a ten storey Tower structure totaling approximately 79,725 m². The Podium, the predominant use of which is as a conferencing facility, consists of a 3-storey building and ancillary basement area totaling approximately 47 000m². It contains 11 conference rooms ranging in size and capacity from approximately 100 seats up to approximately 800 seats, together with support and ancillary areas. The Tower is an 11-storey office building which currently houses workspaces for approximately 800 staff. As part of this project the upper eight floors (Levels 4-11) of the office tower will be carefully and progressively dismantled and a new roof provided at the third-floor level to leave only a fully renovated 3-storey conference building.

Building E, with the exception of the Print Shop on Level 0, will be entirely closed for the full duration of the renovation and partial dismantling works, which will be undertaken whilst fully maintaining the business activities of the remaining areas of the Palais des Nations campus, particularly in regard to the adjacent new office building H, the building E underground car park and the existing Print Shop on Level 0, all of which will continue to remain fully operational throughout the works.

Levels of Intervention

The renovation and partial dismantling work of Building E cover four primary elements of works that will be complemented by further secondary elements of architectural renovation works and the renovation/upgrading of technical installations.

The four primary elements of works consist of:

Asbestos removal throughout the building (Podium and Tower)

The works to Building E will start with Asbestos removal in both the Tower (Levels 04 to L11) and the Podium (Levels 02 and 03) and will be followed by the installation of a protective scaffolding on the two sides of the office Tower to allow for the dismantling works to be undertaken.

The presence of asbestos-containing material is known in both the Tower and the Podium structures of Building E predominantly in the fire protection coating of structural steel elements, pipe insulation, expansion and construction joints and certain fit-out elements (for example the glue used for floor finishing materials contains asbestos). Extensive surveys have been carried out in this regard.

In the Tower, structural beams of Levels 11 to 4 and half of the primary and secondary beams on the ceiling at L03 will be treated for asbestos removal. In the Podium section, the fire coating of the steel framing on the ceiling at L02 also contains asbestos, except for the conference rooms and a small area over the Serpent bar. For these elements, the depollution operations will start by dismantling the suspended ceiling in order to access to the contaminated elements.

Measures for asbestos removal and demolition works will comply with SuvaPro requirements.

Dismantling of 8 levels of the Tower and construction of a new roof slab at top of Level 3

Dismantling works will start after asbestos is removed at all floor levels. The structure to be dismantled is made of steel frame, composite steel deck floors with concrete topping and reinforced concrete cores and corresponds to an area of approximately 20,624 m² or a volume of approximately 69'300 m³.

Before structural dismantling, all heating, plumbing, ventilation installations as well as electrical and data infrastructure serving the 4th and higher floors of the Tower will be disconnected/dismantled, including the Plant Room and installations on the roof. All HVAC equipment (13 Air Handling Units, 1 Extractor) located in the plant room of the 11th floor as well as 3 Cooling Towers and 8 solar preheating panels positioned on the roof will be removed and disposed of prior to dismantling. 172 photovoltaic panels currently positioned on the roof of the Tower will also be removed and stored for re-installation on the new roof to be created at Level 3.

Dismantling will be carefully carried out floor by floor commencing from the roof level, steel and concrete debris will be removed by small machinery.

Fire protection of the existing structure

Following removal of asbestos fire protective materials, any areas of the structure which are to be fire protected up to modern building codes will be done using either board or spray applied modern fire protection materials.

Replacement of the entire Lake Side Façade

Immediately after its construction in the early 1970's, the lakefront façade of Building E was recognized as an engineering achievement with its 13-metre high clear spanning glass panels among the largest ever made in Europe. The glass was held in place by a sophisticated suspension system. Due to the aging of the materials used in the installation (namely the glue) and in order to improve thermal efficiency and to meet modern safety requirements, these glass façade panels will be entirely replaced with laminated double-glazed insulating glass panels of the same size. This work is to be Contractor designed. The solar shading will also be renovated / replaced.

The further secondary elements of architectural renovation work to Building E correspond to an area of approximately 60,000 m² and mainly consist of:

Conferencing Facilities

Building E contains eleven conference rooms, the main four circular Conference Rooms each with a capacity in excess of 600 seats are:

- **Salle XVII** which was fully renovated by the United Arab Emirates in 2016;
- **Salle XVIII** which will be fully renovated as part of the SHP project is approximately 862 m² and has a capacity of 641 seats, it will be renovated as a “preserved heritage room” to preserve the original interior scheme used in the construction of all the original large conference rooms. Audio visual installations will be upgraded to current specifications and the lights will be changed. Asbestos removal and additional fire protection for the metal frame will also necessitate dismantling and reinstallation of the original designed aluminum suspended ceiling light diffusers
- **Salle XIX** which was recently fully renovated by the State of Qatar and completed in 2019; and
- **Salle XX** (the Human Rights and Alliance of Civilizations room, which is utilized by the United Nations Human Rights Council), which was renovated in 2008 and the ceiling of which, is entirely covered with a sculpture created by the prominent contemporary Spanish artist Miquel Barceló consisting of many layers of coloured paints composed of pigments from across the globe, sprayed across the ceiling to create stalactites.

Rooms XVII, XIX and XX identified above, remain out of the scope of the project but are to be fully protected throughout the duration of the renovation and dismantling works to ensure they are not damaged. Of the remaining conference rooms in Building E, the following works are envisaged:

- **Salles XXI to XXVI**, these smaller conference rooms comprising between approximately 2,000m² to 1,400 m² in size, and located on the first floor will undergo only minor changes. Audio-visual installations and lighting fixtures will be up-graded and carpets will be changed to achieve fire code compliance.
- **Salle XXV** is approximately 264 m² and has a capacity of 185 seats, it will also be renovated as a “preserved heritage room” to preserve the original interior scheme used in the building’s construction. ed as a “witness room” for the smaller Conference Rooms. Only Lighting fixtures above the original designed aluminum ceiling grid will be improved, walls will also be treated for fire code compliance.
- **Salles XXII and XXIII** will be fitted out for the use of the Office of the High Commissioner for Human Rights (OHCHR) to replace the current facilities that they have in their current off-site location. The furniture will be adapted, and the podiums re-arranged to be fully accessible to persons with reduced mobility and to allow use for interpreters using sign language.

Internal reconfiguration of walls and partitions for various functions (offices, commercial areas, public areas).

To avoid having to move the heavy printing machinery, the Print Shop in Level 0 (occupying an area of approx. 2 500 m²) will remain functional throughout the Building E renovation works and minor electrical upgrade and architectural touch-up works will be carried out around the activities in this space. Maintaining the business activity of the Print Shop is an important requirement to be met during both demolition and renovation phases.

Approximately 500 m² of catering spaces including the main Bar Serpent and the Pasta Bar on level 01 and the Bar Escargot on Level 02 will be refurbished with minimal intervention to comply with applicable accessibility and fire safety codes.

The remainder of the Building E floor area is predominantly comprised of public spaces that are to be upgraded only to a lesser extent to comply with applicable accessibility and fire safety codes.

Conference Support Spaces, Offices, Public Areas

With the recent addition of Building H to site the Palais des Nations, Building E has gained a more centralized position in the overall Campus. This change has necessitated the consolidation of several amenities dispersed in others building of the Palais des Nations into a “shopping mall” of new commercial spaces, adding up to approximately 4,400 m² which is located at Level 0 of Building E as part of the renovation works.

The corridor currently linking Building A and Building E will end in a new hallway in Level 0 of Building E. This hallway will be connected to Level 1 via two new escalators. A structural opening in the floor slab of Level 1 is to be formed to install these escalators and to extend the existing vertical escalators connection down a further level.

Approx. 820 m² of office space and approx. 800 m² of Conference support spaces will also be refurbished, with minimal structural work and minor or medium-level interventions (minor wall demolitions, replacement of electrical systems, renewal of suspended ceilings and floors, painting of walls, etc.). The remainder of Building E Tower floor area is composed of predominantly public spaces that are to be upgraded to comply with current accessibility and fire safety codes.

Accessibility upgrade works.

On Level 1, Conference Rooms XXII and XXV dedicated to the use of OHCHR will be renovated to achieve full accessibility. Furniture will be revised; stage ramps will be added. New accessible WCs will be created throughout the building. As in the rest of the Palais, interior and exterior accessible paths will be installed.

A specific Intercom System connecting lifts, disabled toilets, refugee areas and main entrances will be installed, and the accessibility of the lifts will be improved.

Fire zoning works (creation of fire compartments, addition of fire-resistant partitions/doors).

New EI60 fire resistant walls and new EI30 fire doors will be installed in different key areas for the closure of the fire compartments.

Further secondary elements of works relating to the renovation and replacement of technical installations, again corresponding to an area of approximately 60,000 m² include:

Mechanical, Engineering and Plumbing (MEP) Backbone

From a technical point of view, one of the main objectives of the SHP project is to bring the Palais des Nations up to the current standards required for Swiss building code compliance. Consequently, the Renovation of the Building E includes the replacement and/or renovation of most of the mechanical, electrical and plumbing systems.

Mechanical Systems

Most of the existing secondary pipework distribution systems of Building E are to be replaced. Ventilation plant and distribution ductwork serving conference areas E shall be largely maintained as they currently are with local replacement and upgrades as necessary. Limited interventions to allow for code compliance are envisaged for Plant Rooms at basement level.

All Air Handling Units (AHU's) are to be replaced with modern Air Handling Systems with Heat Recovery Units. Ductwork is to be modified according to new areas to be serviced.

Control and regulation equipment in the Plant Rooms are to be linked to the existing BMS of the Palais in order to improve energy efficiency.

After re-construction of the ceiling slab and new roof of Level 3, new Hybrid Cooling Towers will be installed, and solar panels will be re-positioned. New connections/systems (wastewater column ventilation pipes, rain water drainage system) will be installed on the new roof.

Electrical Systems

The existing medium-voltage (MV) cabling, switchgear and transformers are to be retained during the renovation of Building E. However, all the main low-voltage switchboards along with 90% of the radial feeds from the substations and main distribution boards shall be replaced. In addition, approximately 80% of the final distribution boards shall be replaced/upgraded or modified as well as most of the small power installations and the circuit systems that supply the lighting installations. Most of the electrical backbone and floor distribution cables will be changed as well as IT new infrastructure cables.

A new structured data cabling system shall be provided along with the creation of new technology rooms. No intervention is planned for the DATA Center, which is to be kept active during the entire works.

New Specific lighting fixtures are to be installed in most areas.

New Fire Alarm, Emergency Lighting, Public address/ voice alarm and lighting control systems are to be installed.

Central UPS power and distribution systems are to be provided and the UPS Room is to be relocated. The main power plants E and F are to go through major upgrading works. 172 photovoltaic panels removed from the 11th floor are to be re-installed on the new roof at level 3.

Fire protection (active and passive measures)

The existing fire detection system will be upgraded (all cables are to be changed, detectors re-arranged or added in the corridor ceilings) and coordinated with the fire zoning and fire doors of the building. A new public address system will be installed.

Further Technical Installations Modernization Works:

- Major modernization of lifts for code compliance, accessibility, technical improvement
- New lifts added, new Escalators added, some lifts are completely removed due to the tower E dismantling;
- Security: General Upgrade / New CCTV and Access Control Systems in specific areas, coordinated with UNOG's current campus wide security systems
- Removal, cleaning, re-lamping and re-installation (or changing) of all lamps in rooms and corridors
- Major modernization of lifts for code compliance, accessibility, technical improvement

Generators

Both Generators feeding the Building E and the Data Center and located at the Basement Level of Building E will be kept, only their main distribution boards will be upgraded. The generator feeding the Data Center will remain fully operational for the entire duration of works.

Lightning Protection

As in the rest of the Palais, the Lightning Protection System will be improved to comply with current norms and codes, a new earthing (grounding) system will be provided.

Fire Fighting and Smoke Extract System

In parallel with the general upgrade in fire-fighting, the Smoke Extract System will be revised according to the requirements of the Police de Feu.

New extractors will be added, fire dampers linked to the fire detection system are to be installed in air ducts. Sprinkler network will be improved.