

## GMP office building.

Madrid.

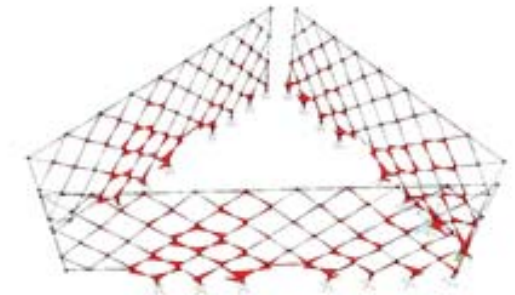
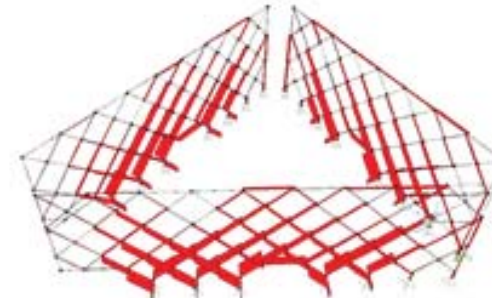
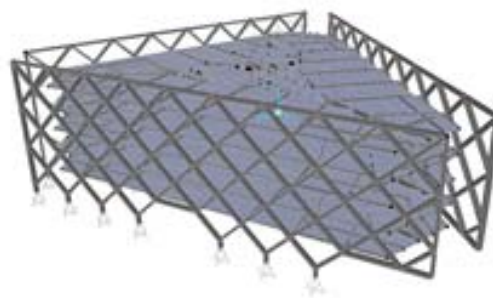


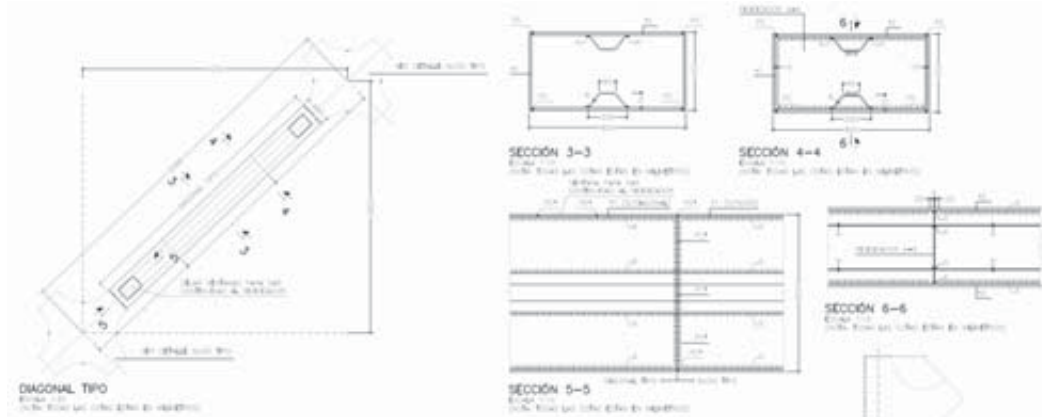
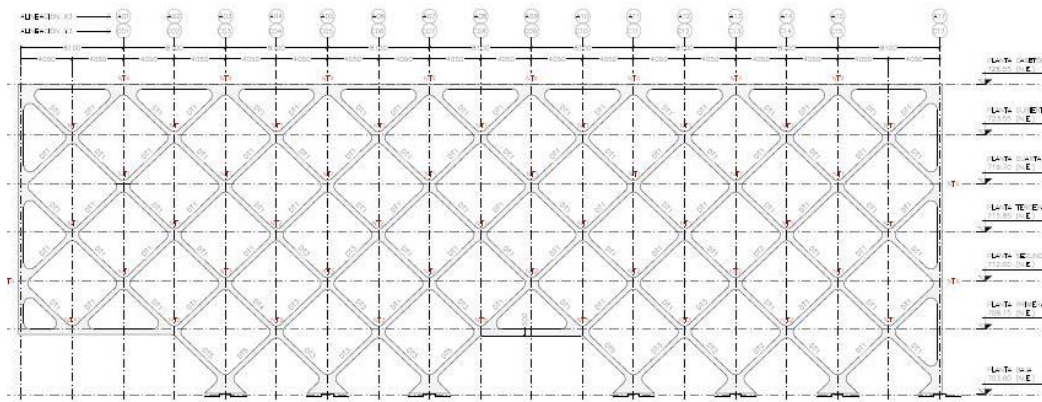
CLIENT	GMP
DATE	2015 - 2016
LOCATION	Madrid- Spain

**FIELD OF ACTION** **Construction Project and Technical Assistance**

Together with architectural office Rafael de la Hoz Arquitectos, INES Ingenieros Consultores has developed the detailed design project for an office building located in the district of Las Tablas in Madrid, for the real estate group GMP. INES Ingenieros has been responsible of the development of the project and site supervision of all the foundations and structures tasks.

The building shape has been adapted to the geometry of the plot; the plan view of all the above ground levels have triangular shape with chamfered edges. It has 5 over ground levels, ground level and one basement.



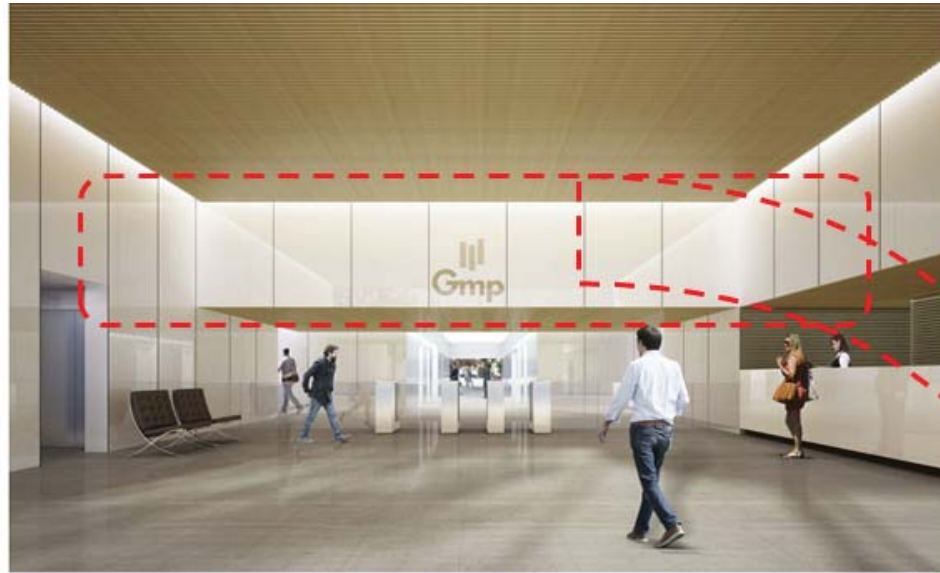


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The main singularity of the building is the disposition of an external structure, placed in the perimeter of the over ground levels, solved with a truss with rhomboidal mesh, where over ground levels are supported, with hollow steel sections. Intersection points of the mesh are quincuxed between consecutive levels; separated every 8,10 m they are used as supporting points for the over ground levels. All the elements of the truss have cross sections of all dimensions of 400 mm x 800 mm due to architectural imposition.

In order to provide flexibility to the building spaces, no columns have been placed in visible locations, except for 4 tubular columns placed in the chamfers, all others are embedded in separating walls of the vertical core. Horizontal structure is supported by these columns and by the external trusses. Typical span is 8,10 m x 15,40 m. Horizontal structure is solved with mixed steel-concrete elements (steel beams connected to a concrete slab).

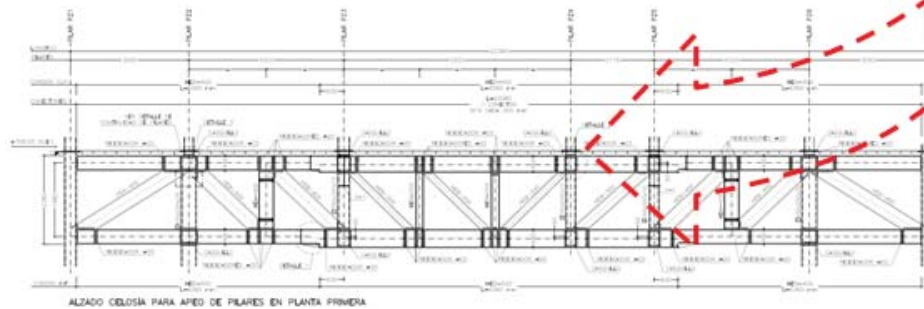


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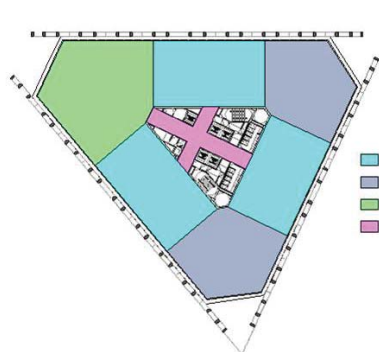
Madrid.

Access to the building through ground level requires the back step of the separating wall of the core in one of the sides of the triangle in order to generate a diaphanous space in the main entrance; columns embedded in this wall on upper floors have to be interrupted. The space between the ceiling and structural floor of the first level is used to dispose a 2 m height steel truss to support interrupted columns.

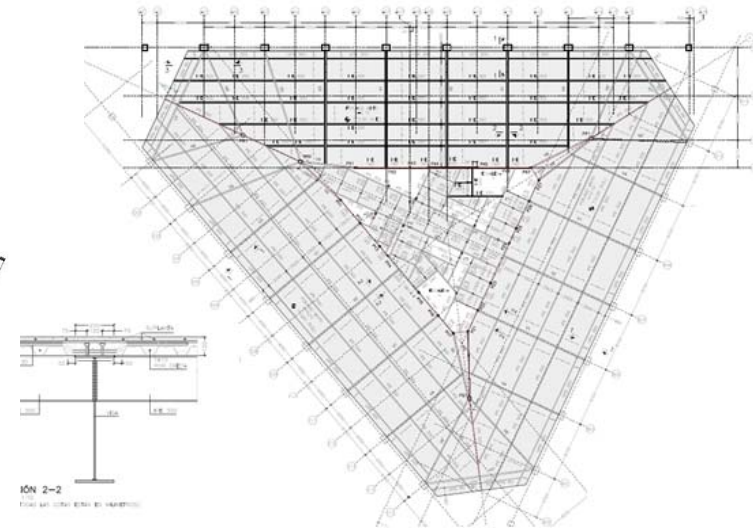
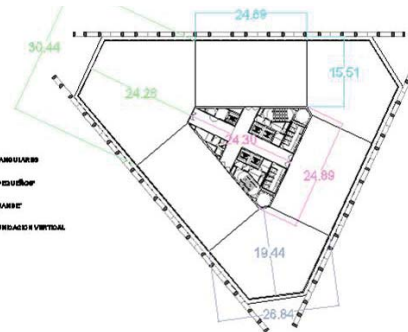
In order to take advantage of all the surface of the plot and to execute only one basement level, almost all the ground floor is occupied by a concrete slab which allows obtaining the maximum parking spots.



ALZADO CELOSÍA PARA APED DE PILARES EN PLANTA PRIMERA



- ZONAS DE INTERVENCIÓN
- ZONAS DE PROTECCIÓN Y CONSERVACIÓN
- ZONAS DE PROTECCIÓN Y CONSERVACIÓN
- ZONAS DE PROTECCIÓN Y CONSERVACIÓN



ION 2-2  
FOLIO 001 (TOTAL 001) DEL VOLUMEN 001