Doxiadis Associates

AGIA PARASKEVI MUNICIPALITY
STRUCTURAL , GEOTECHNICAL AND E/M INSTALLATION STUDIES
FOR THE ERECTION
OF AGIA PARASKEVI NEW TOWN - HALL BUILDING

Agia Paraskevi Municipality awarded in 2008 to Doxiadis Associates, as a leading firm, the complete structural study of new Town - Hall Building. The scope of work included stages of preparation of Preliminary, Final, Permit issuance and Detailed Design with Tender Documents as well.

The project will be constructed in a site of Municipality property with total area of approximately 3.690 square meters, elongated shape and intense hypsometrical differences of 4,5 meters class.

The building is consisted from:

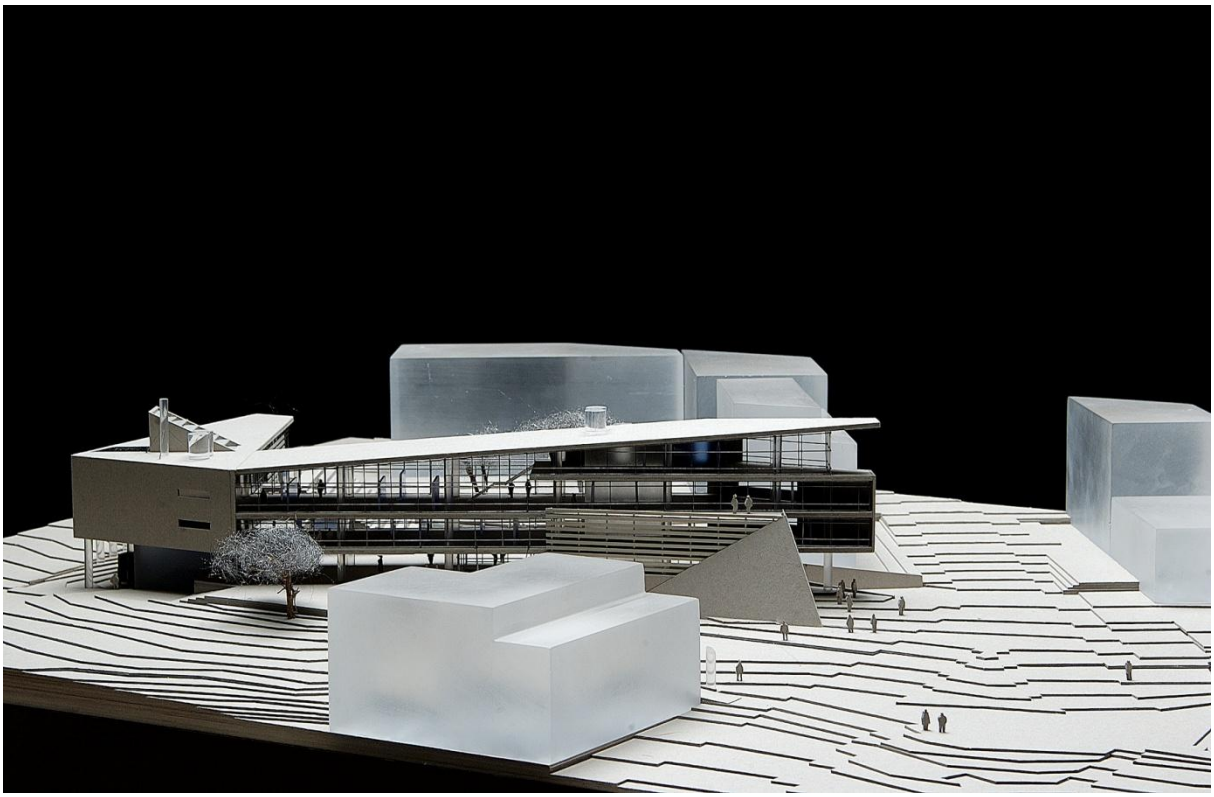
- 4 aboveground stories with total area of 4.234 m^2 and
- 3 underground stories with total area of 7.791 m^2

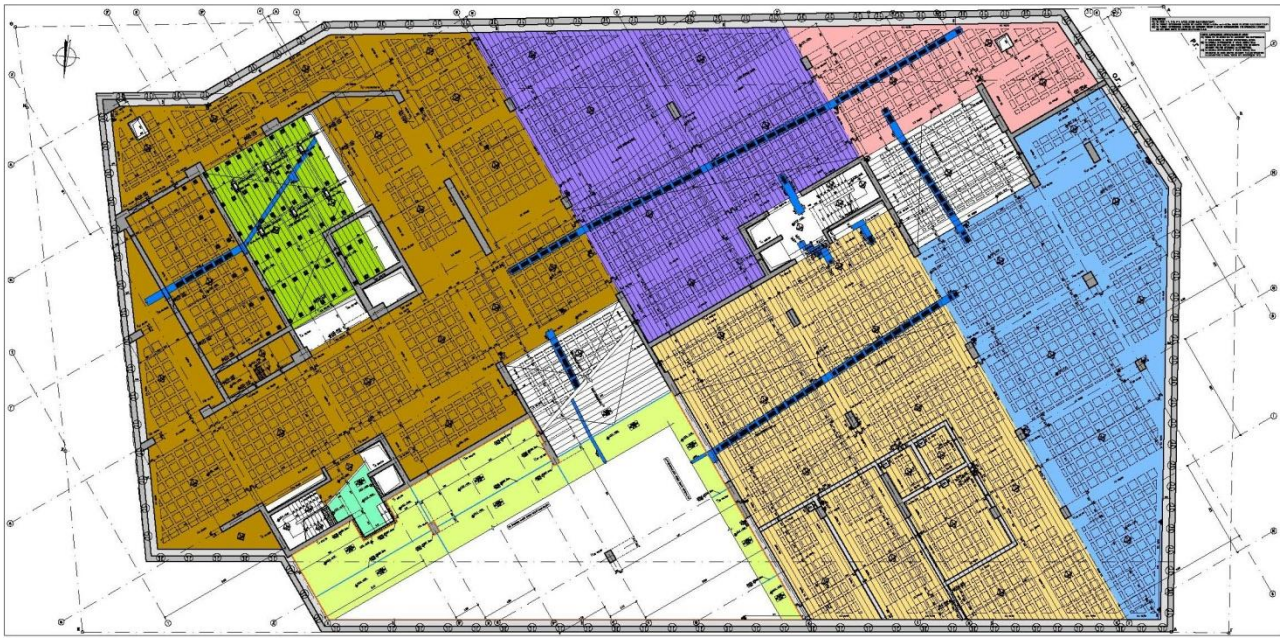
Half of substructure total depth is extended completely under the groundwater level. Due to the fact that basement and excavation reaches to the site outline, is implemented a temporary retaining structure of Berlin type retaining wall. The specified method comprises hole drilling, installation of steel sections, excavation of panels and use of shotcrete and prestressed anchors.

The bearing structure of building is consisted from reinforced concrete with vertical elements are laid on a basic orthogonal grid of 7,55m x 9,90m and comprise both columns and shear walls. As a result of this, is shaped a dual frame – wall structural system which resists at all load types, vertical and lateral as well. The horizontal elements are, almost exclusively, composed from flat slabs solid or voided without beams. In order to improve the structure seismic response, as well it's stiffness, and to be facilitated the architectural solution, building is shaped as a unified structural entity without seismic joint at both basements and superstructure. As foundation type is chosen mat slab.

Building structural design achieves to ensure safety, high functionality standards, architectural design showing forward and reduction of construction budget.

Fulfillment of the abovementioned counterbalanced requirements was accomplished with the success facing of some difficulties which appear during design and are summarized to the following:





- Uniformity of foundation subsoil and subsequent uncertainty of geotechnical conditions
- High groundwater level which results to large uplift forces
- Great Irregularity of bearing structure in both planview and section
- Increased values of internal design forces and moments from thermal and shrinkage actions due to the not existence of seismic joint in combination with the large building dimensions
- Complex geometry of basements with continuous inclined ramps in extensive planview areas
- Inclined superstructure slabs
- Large values of superimposed loads to 1st basement roof slabs due to planting soil existence.

DATA ON OVERALL PROJECT

Name of Client	Start Date	Project Value in 09/2013 prices
Agia Paraskevi Municipality	*02/2008*	*20,910,000.00 Euro*
Project Location within Country	Completion Date *10/2014 Detailed Design* *On Going* *Tender Documents*	Value of Services in 09/2013 prices
Agia Paraskevi, Greece		*337,500.00 Euro*

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