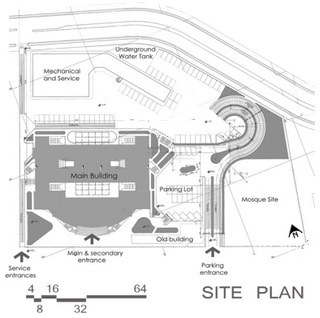
Medical University Management Building

Zand Boulevard
Shiraz, Iran

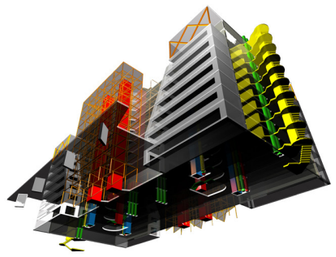
Architects	Hamgrooh Architects and Planners - Farzad Rouzpay Tehran, Iran
Clients	Shiraz University of Medical Sciences Shiraz, Iran
Commission	n.a.
Design	1991 - 1992
Construction	1992 - 2003
Occupancy	2005
Site	10,000 m^2
Ground floor	2,300 m^2
Total floor	18,000 m^2
Costs	3,614,458 USD
Programme	This project reuses an unfinished 10 storey steel structure dating from 1969. It was structurally inadequate but its reuse rather than demolition represented a cost saving of 15%-20%. The design concept determined that external elements applied to strengthen the building would function as architectural spaces, which also served to create the additional floor area required for circulation. Internally, two concrete stair cores connect and strengthen floors. On the façade, trapezoidal concrete elements provide additional area and allow the transfer of lateral forces. Similarly, space frames incorporate elevators and service ducts. A new underground auditorium at the base of the building and glass curtain walling complete the project.

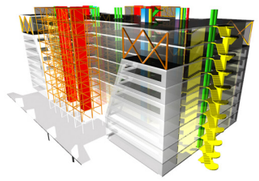
Building Type *Official & Adminstration Facilities*
2010 Award Cycle *3638.IRA*

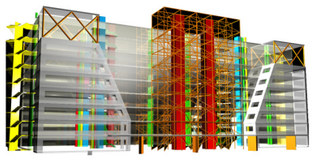
3638.IRA

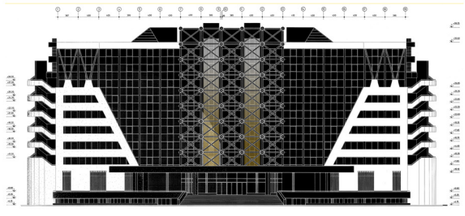


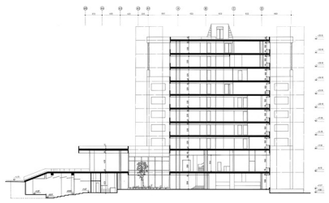
SITE PLAN

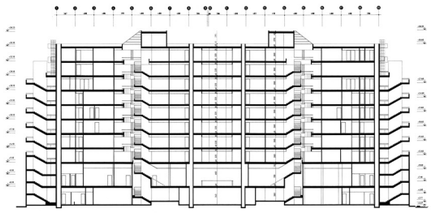




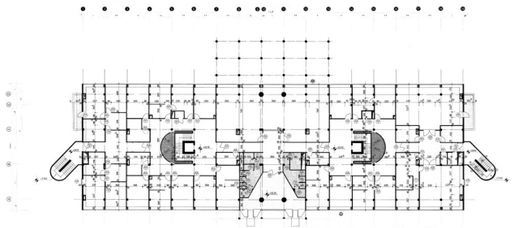


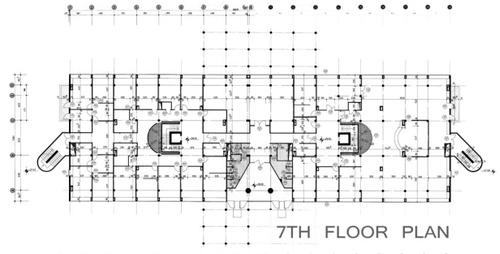

SOUTH ELEVATION

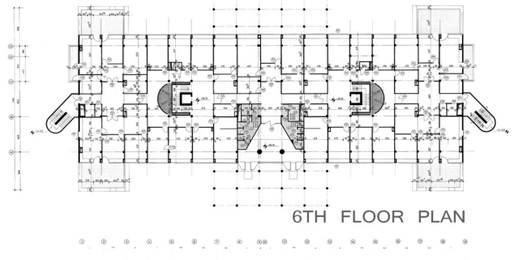

CROSS SECTION

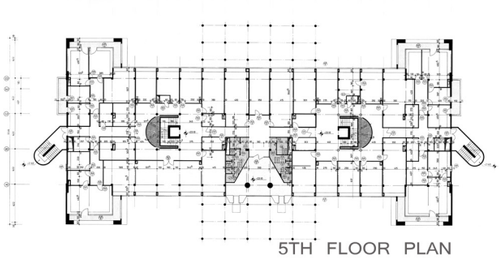


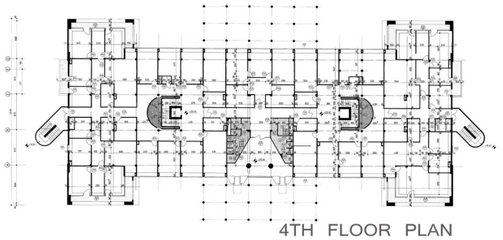
LONGITUDINAL SECTION

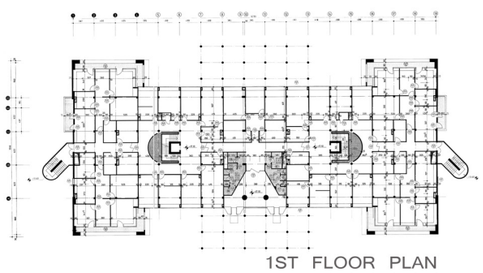

8TH FLOOR PLAN

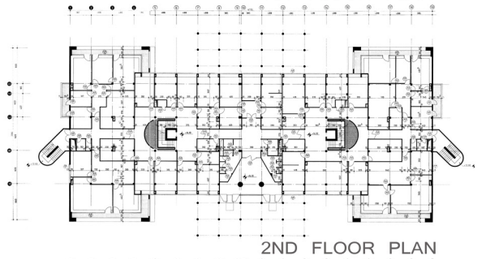

7TH FLOOR PLAN

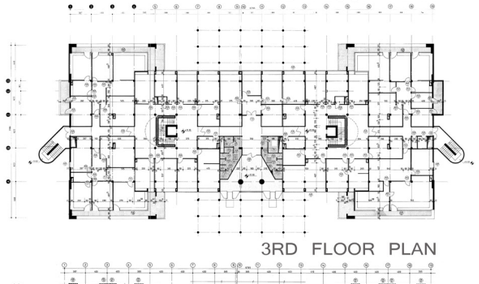

6TH FLOOR PLAN

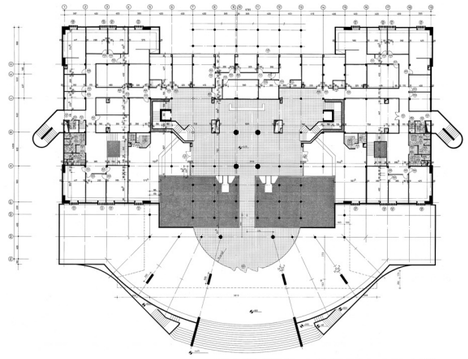

5TH FLOOR PLAN

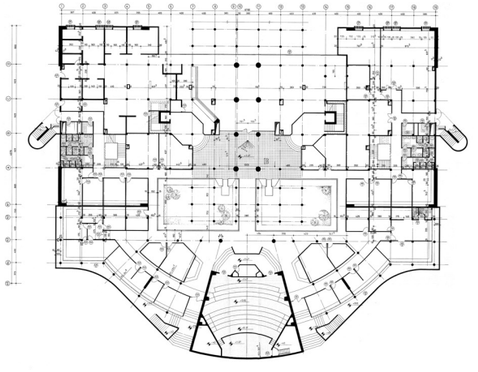

4TH FLOOR PLAN


1ST FLOOR PLAN


2ND FLOOR PLAN


3RD FLOOR PLAN


GROUND FLOOR PLAN



UNDERGROUND PLAN



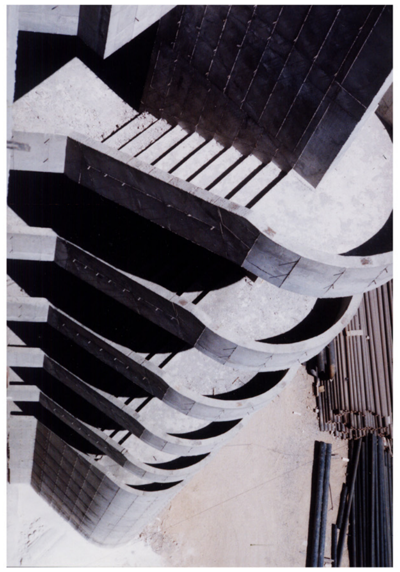





MANAGEMENT BUILDING
CENTERAL ORGANIZATION OF SHIRAZ MEDICAL UNIVERSITY







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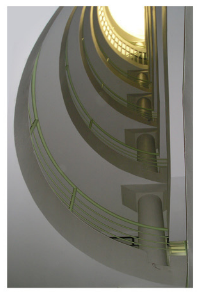


The general engineering office of Shiraz Medical University, an unfinished steel structure with 10 floors and a total area of about 18000 m2, was built in 1969. It was left unfinished since the required technical standards were not met during the construction phase of the project. In 1991 this building was handed over to Hamgrooh Consulting Engineers for structural strengthening and redesigning of the project.

The studies carried out for the continuation of the work, consisted of two parts. First, estimating the required office space and second, evaluating technical and engineering quality of the existing building. Regarding this second part, two other qualified consulting firms (a geotechnical and a structural consultant) were invited to cooperate in order to gather information about the existing building and complete the study of its structure and renovation.

With regard to the related regulations, the results of the technical and engineering studies carried out upon the existing building, showed that the building at that situation was useless and had quite an insufficient structure (for example, there was no bar in the foundation due to its previous greedy contractor!). Thus it needed to be strengthened in every aspect. Although the demolition of the building was an option, raising during the discussions, after economic evaluations it was proposed that renovation and strengthening of the existing building will save %15 to %20 of total building budget or more than %50 of structure expenses.

Considering the results from the studies and also other limitations inside the building, low heights, added lifts, office circulation, etc., it was concluded that besides the structural strengthening, the design of external elements on the building's façade will transfer lateral forces to those elements. Also by using shear walls, there will be no need to increase the columns and beams' cross sections.

Several changes occurred in the architectural redesigning phase. There are two symmetrical internal staircases which provide access to the whole building. In the program of the project there was a need for an amphitheater for the conferences and events taking place in this complex, so this part was added in the underground level as a separate building in front of it in a semi circular shape which has two access ways, one directly from outside and the other from the main lobby in the ground floor level.

All the external elements applied for strengthening the building—such as the symmetrical stair cases at its two ends, the front and back elevation space—frame which provide room for elevators and mechanical ducts, and the trapezoid concrete elements which provide extra space for required offices—also function as architectural spaces.

Regarding mechanical purposes, in order to distribute mechanical elements above suspended ceiling and omit buried pipes system, the building was divided into four zones in which four main ducts and other risers help distributing these elements to different levels such as air conditioning, dispatching system, paging, networking, electrical boards, fire extinguishing system and so on.