4D Virtual Reality Applications

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A- 4D Applications

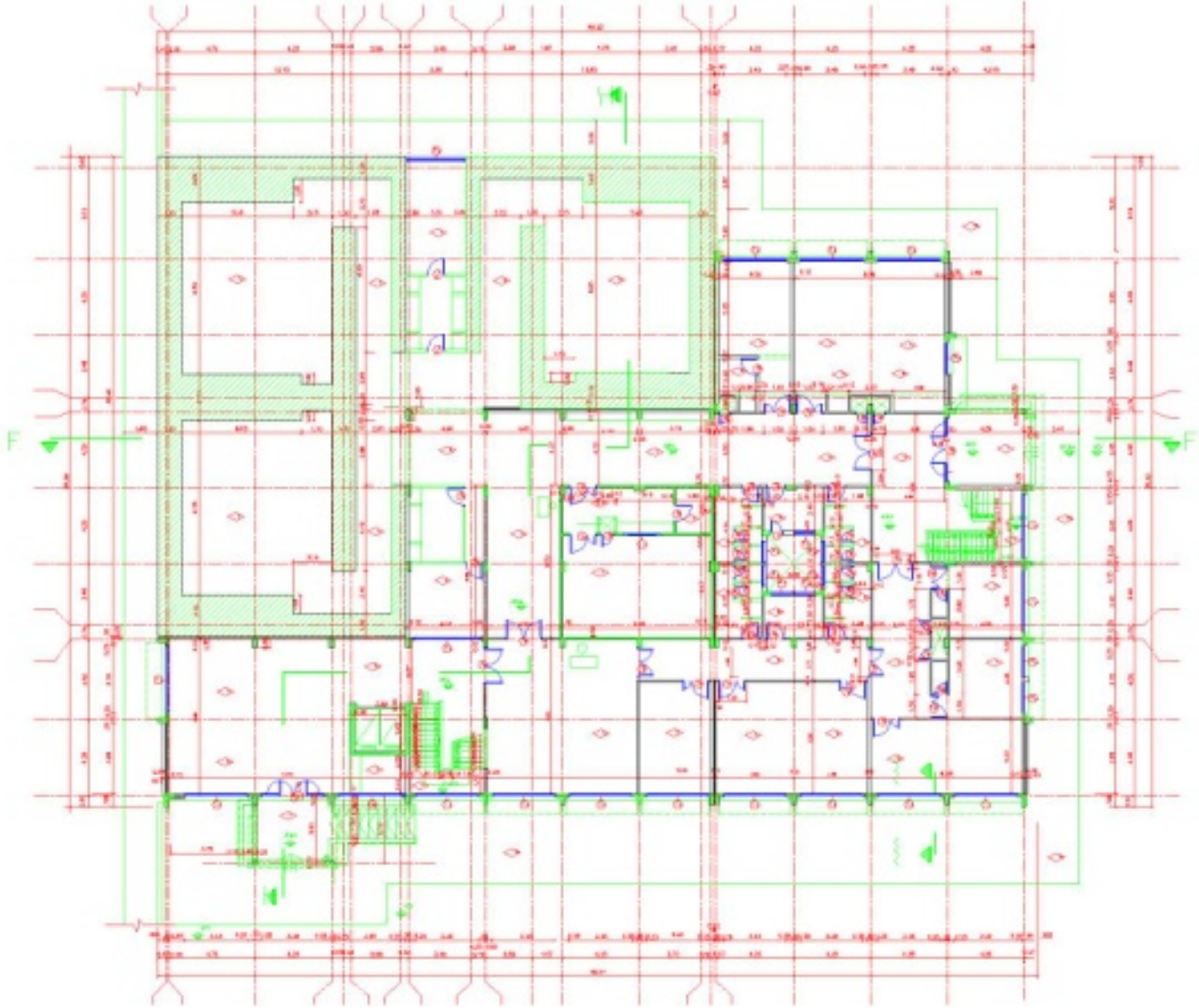
- 1st Application
- 2nd Application

B- Design Studio Applications

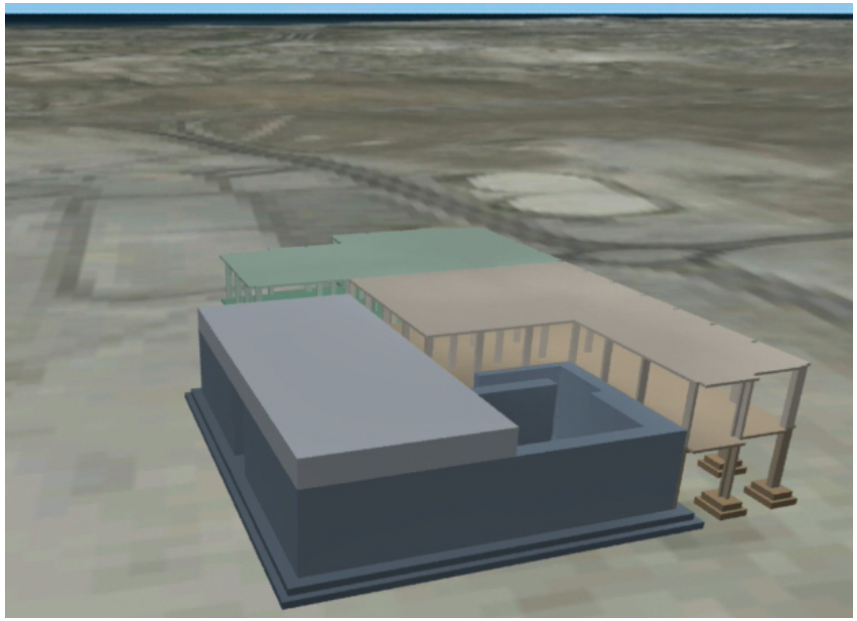
- Structure/Construction Selection
- Creativity Measurement
- Urban Design Theme

4D VR Applications

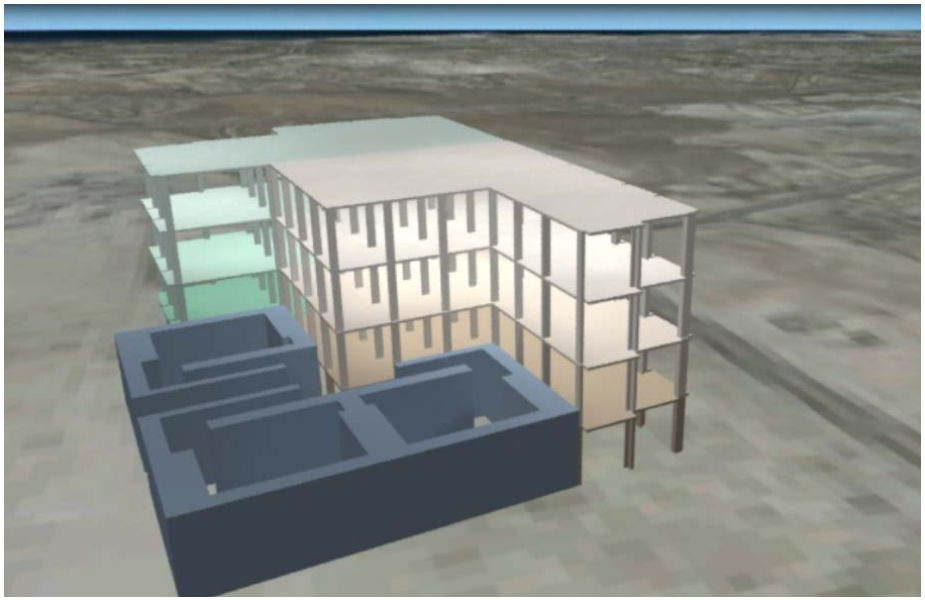
A) 4D VR Apps - App.1 - App .2 B) Design Studio Apps - Structure - Creativity -Urban Design



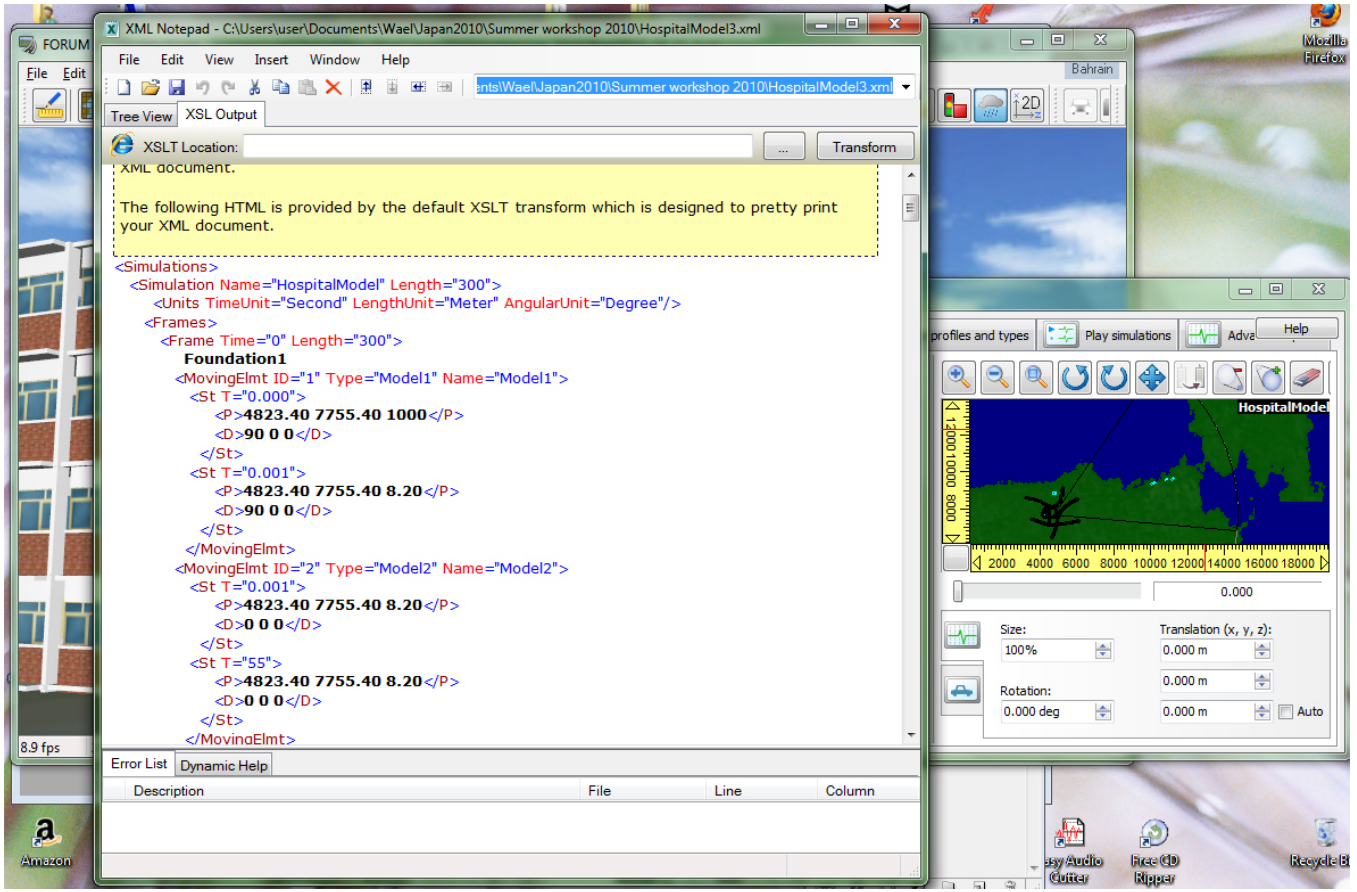
A Building, University Hospital, Used in the Project Management Application.



Virtual Reality
vs
4D CAD, predefined scenario animations, or even static figures



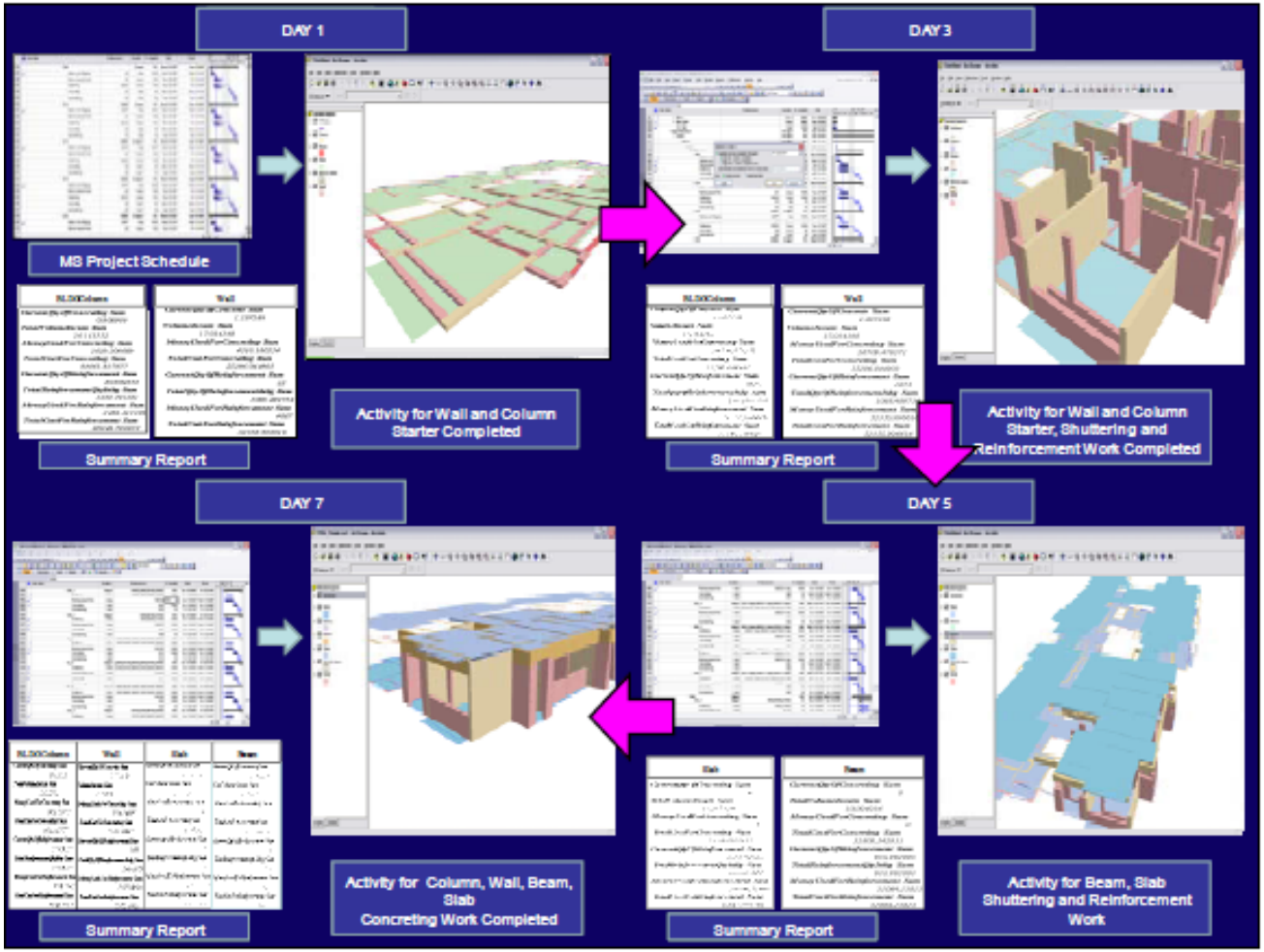
3D models Used in Project Management Schedule



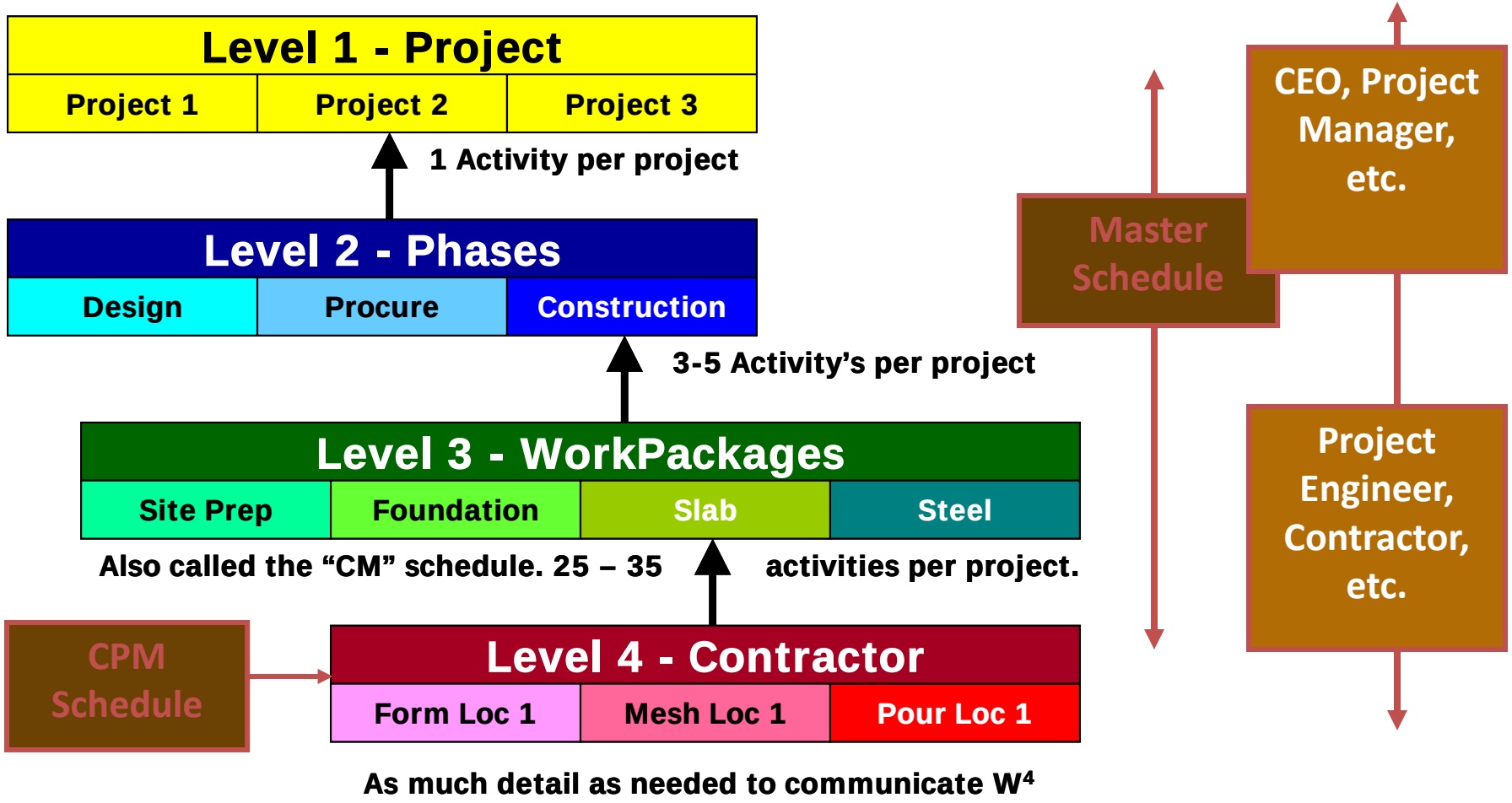
XML file to apply changes in construction through the microsim player of the **VR Studio**

Movie 1
Project Management

Structure and Construction Process Visualization

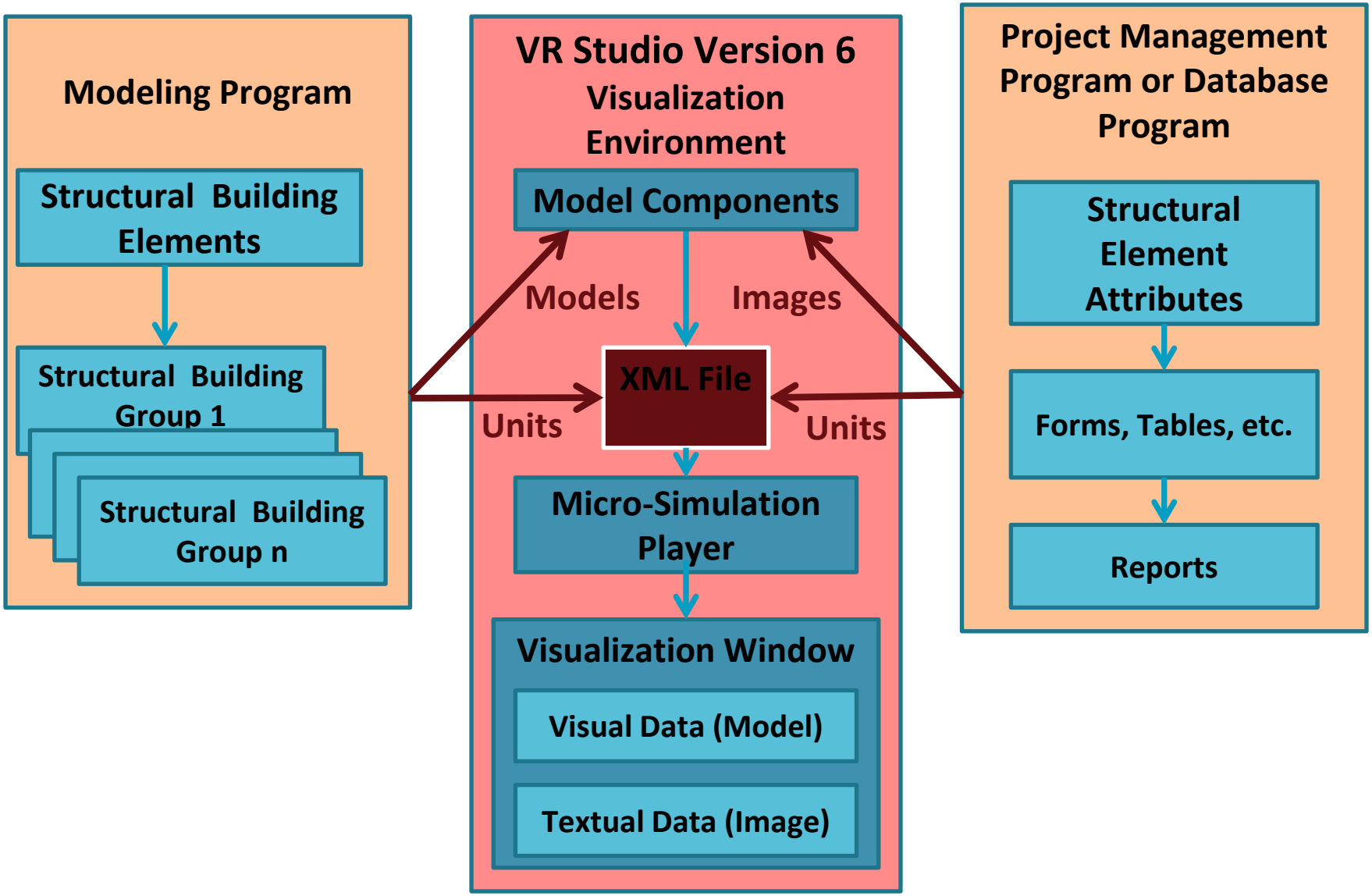


An Example of a Link between MS Project and GIS



Used information is based on the detail level

A) 4D VR Apps -App.1 - App .2 B) Design Studio Apps - Structure - Creativity -Urban Design



A diagram shows adding textual data to the VR model for construction process visualization

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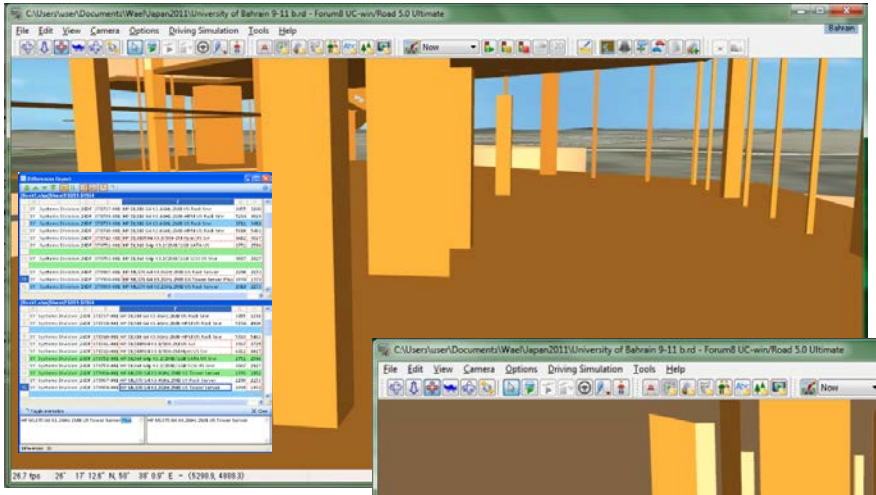
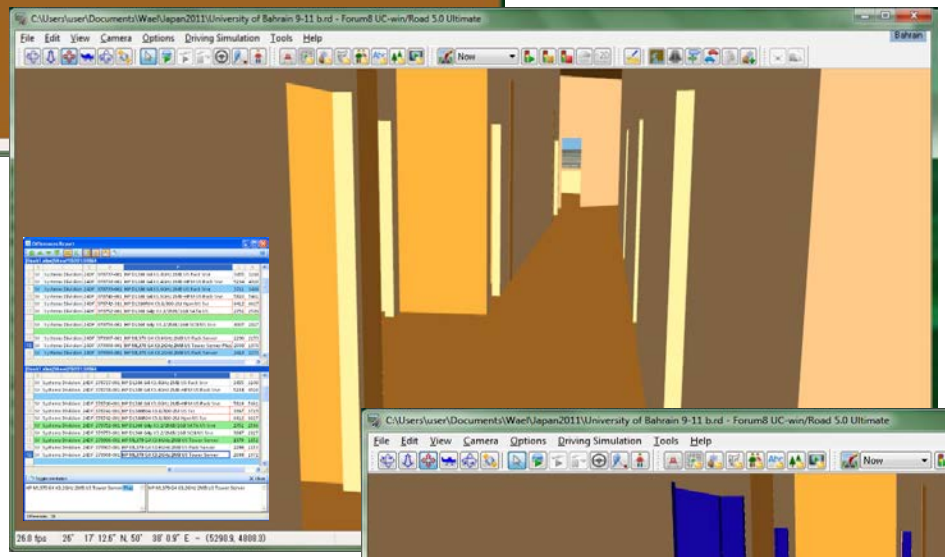
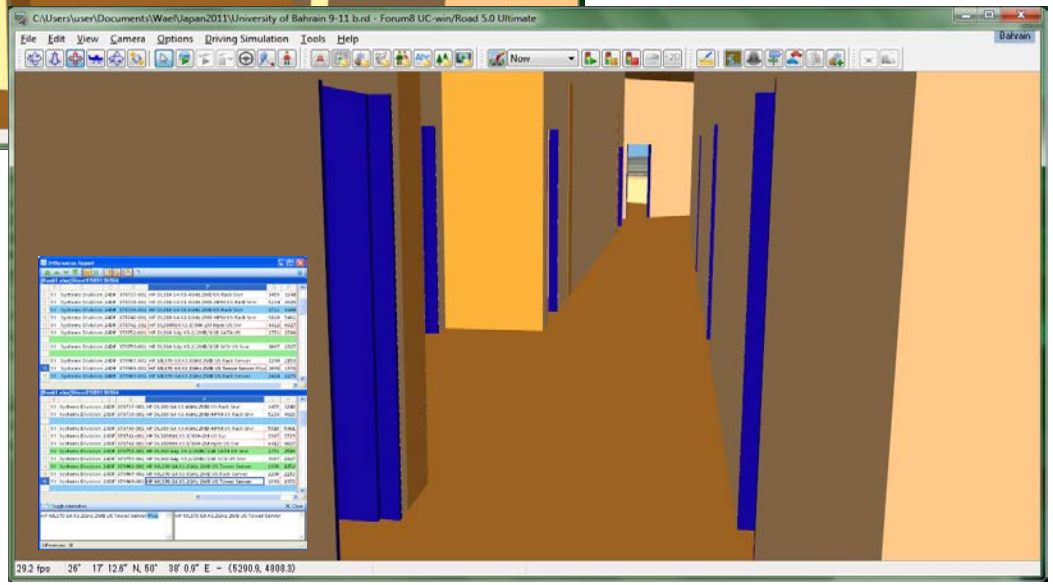


1st Floor columns & slab stage with construction data



1st Floor walls stage with its data



1st Floor doors stage with its data

Screen Shots of Building Interior to Monitor Construction in "**VR Studio**"

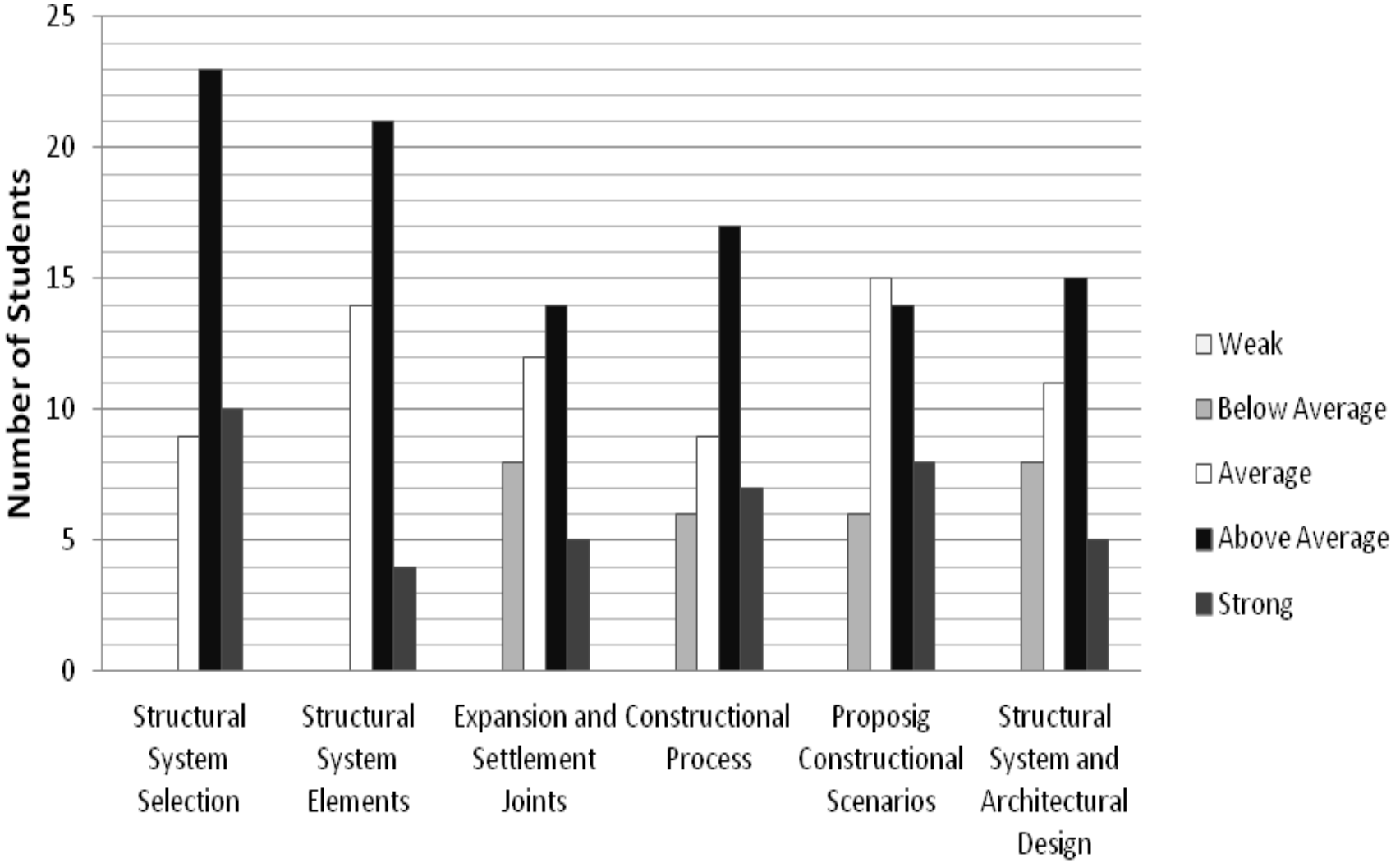
VR Model of Project Management

Construction Process Monitoring

VR Applications in Design Studios

Structure/Construction Theme

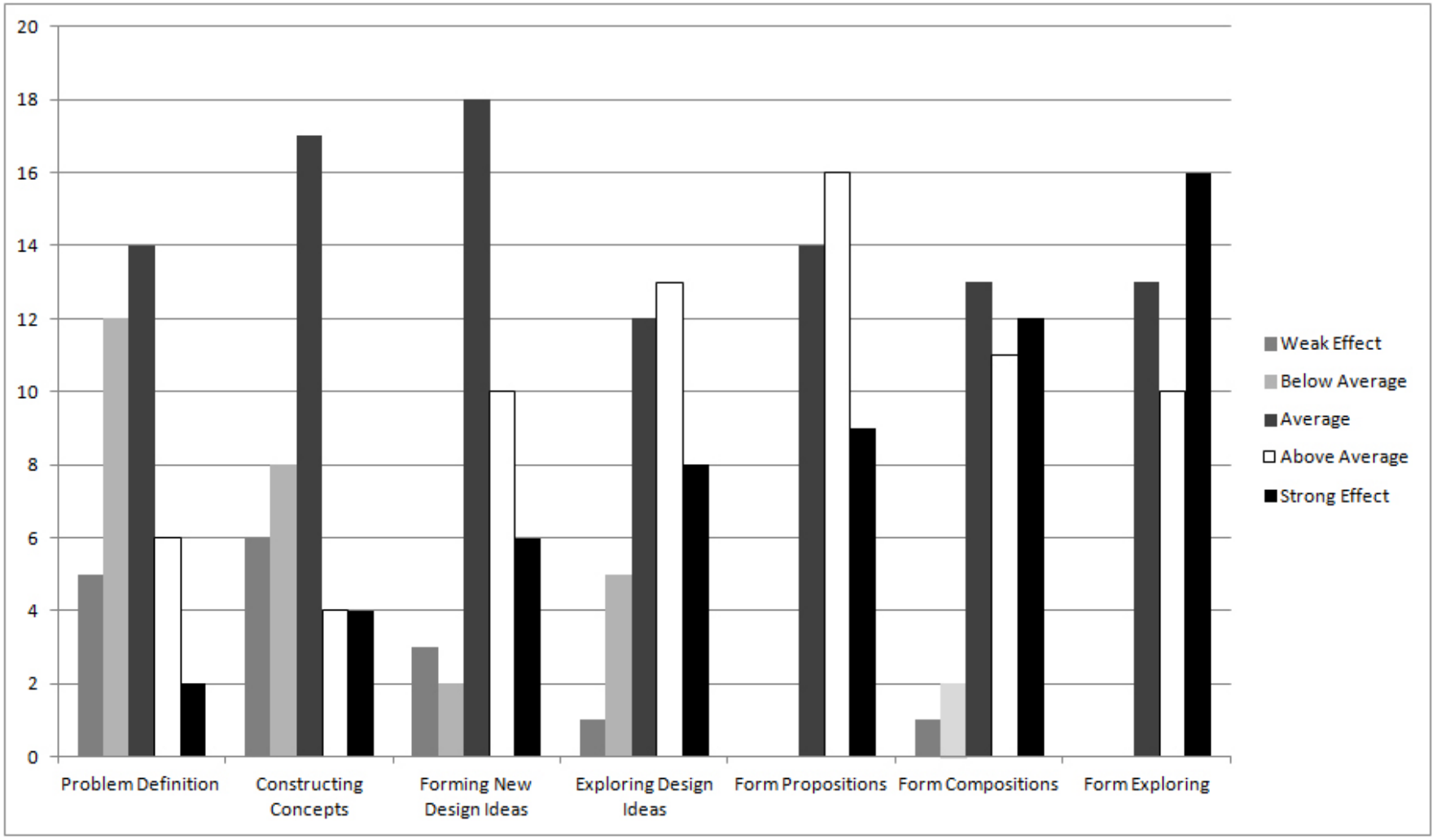
Large Span Structural System Design with the VR Use



VR Applications in Design Studios

Measuring Students' Creativity

Creativity and the VR Use



VR Applications in Urban Design Studio

What is **Urban Design**?

- *Urban design* is the process of designing and shaping cities, towns and villages.
- basically the shaping of masses and spaces (solids & voids) to make urban areas functional, attractive, and sustainable.

- The main goal of the design studio is to apply socioeconomic urban concept, among other important objectives.

Urban Design Studio

- Students started in groups to conduct an urban design research to apply the main goal.
- Students continued manually designing road network and applying main principles of hierarchy, intersections and distances.
- Urban spaces and open spaces were the next step of designing.

Elements of Residential Neighborhood

1 - *Social Services*: Social club.

2 - *Economic Services*: Spaces for Small Projects.

3 - *Educational* services: Kindergarten.

4 - *Recreational* Services: Gardens.

5 - *Commercial* services: Shops.

6 - *Religious* Services: Mosques.

Examples of Students'
Movies during the Design Phases

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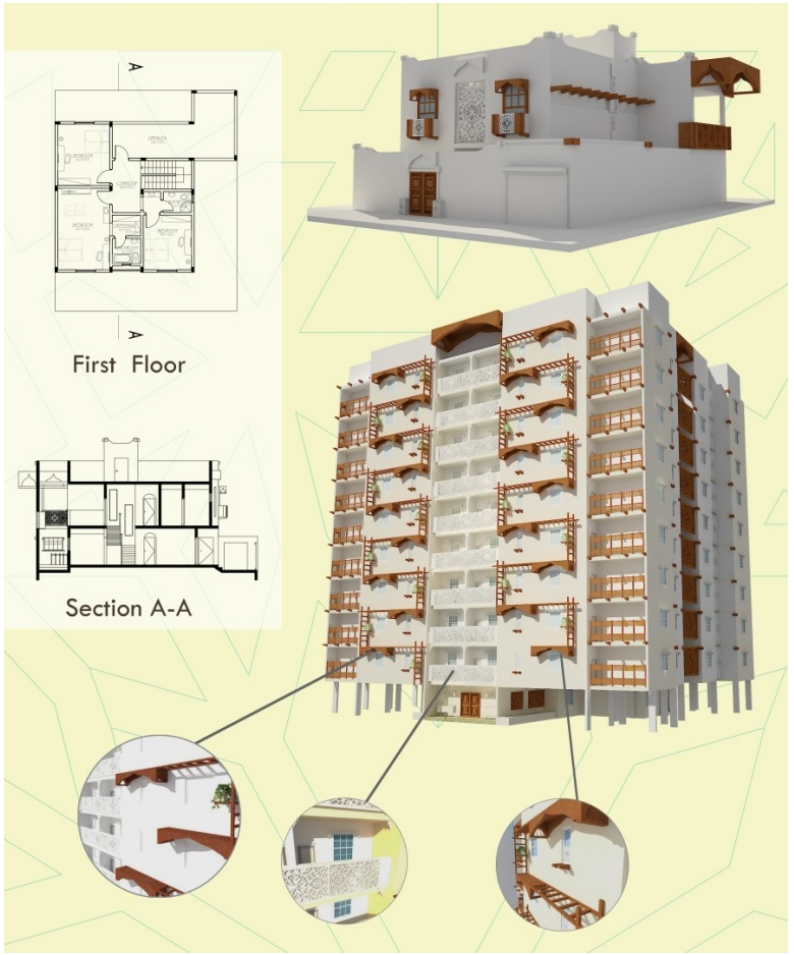

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CORE AREA

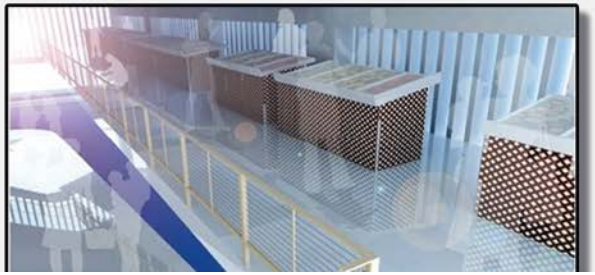
PRESPECTIVE VIEWS

GROUND LEVEL
RECREATIONAL AREA

FIRST LEVEL
RECREATIONAL AREA

A GREEN SPACE THAT ALLOWS PEAPLE TO DO EXERCISES SUSH AS JOGGIN OR RUNNING, CYCLING, GROUP AREOBRIC.

TOP VIEW



Thank you