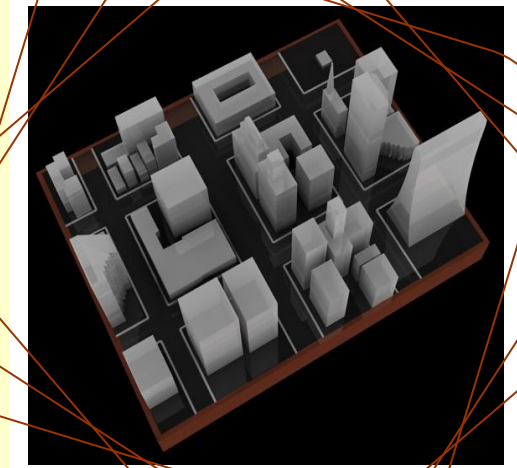# IPRO 317

Design & Build Chicago Scale Model for Dynamic Disaster Simulation

Technical Challenges

1. Finding the correct scale for the model, streets, and selection of materials
2. Figuring out how to display the information on the model
3. How to design and manufacture all the components
4. Creating an interface for the user

Future Work

1. Display more information using Chicago Fire Department (GIS DATA)
2. Validate and create more the existing scenarios
3. Complete the entire city model
4. Create a system where the displayed information can be easily updated.

Conclusions

The Chicago Fire Department is the nation's leading fire department in terms of disaster preparedness and event forecasting. This scale model of downtown Chicago will serve as a very useful tool in a growing collection of advanced technology employed by the department, and will be a very understandable means to communicate and decipher a complex system. The department may also use the model as a means of community outreach, as it can be transported to various meetings and community groups.

TEAM MEMBERS

Jodi Balido | Oscar Martinez
Grahm Balkany | LaLuce Mitchell
Mike Brassil | Donald Myers
Mary Cyriac | Dan O'Brien
Hana Fakhouri | David Parry
Dung Luu | Homero Rios
Brandon Macklin | Dan Sochor
Sonya Martin | Marco Trusewych

FACULTY ADVISOR

Dr. Ahmed Megri

ILLINOIS INSTITUTE OF TECHNOLOGY

Problem Statement

Design and construct a three-dimension reduced scale model for a portion of downtown Chicago. The model will be primarily used to test and simulate the likely performance of fire defense strategies related to public health.

Project Objectives

-Identification of the scale, materials, technologies, and strategies of construction

-Physical mapping and computer modeling of the downtown built environment

-Design of the physical model and computer/electronic components

-Construction of reduced-area mock-up for final approval by the City of Chicago

-Familiarizing Fire Department Personnel with Target Area

-Identifying Problematic Scenarios

-Illustrating a Vast Array of Potential Disasters

-Simulating Disaster Response in Real-Time
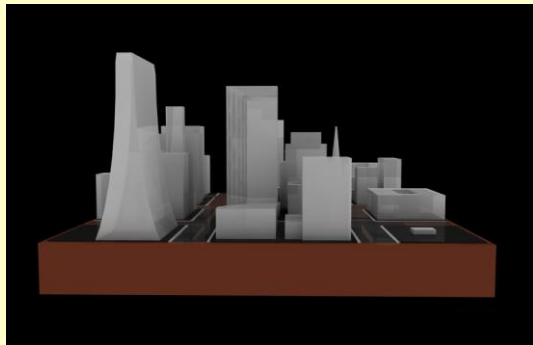
Basic Organization and Tasks

The group of sixteen is split up to seven groups.

Project Finance / Orchestration
Mary Cyriac

Daniel Sochor

Information-Architecture
Dung Luu

LaLuce Mitchell

David Parry

Symbols/ Representation
Oscar Martinez

Homero Rios

Material Collection
Daniel O'Brien

Marco Trusewych

Information-Programming
Sonya Martin

Donald Myers
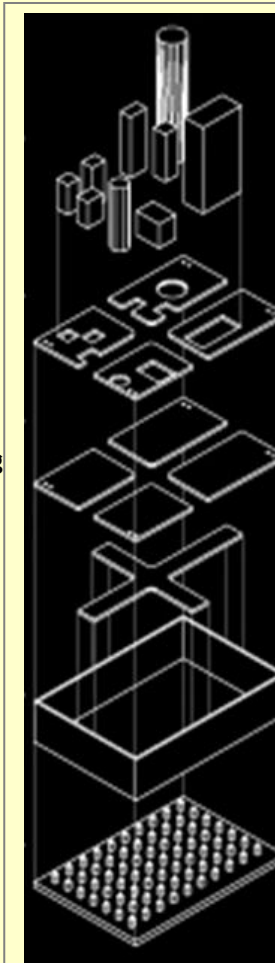
Scenarios
Jodi Balido

Hana Fakhouri

Brandon Macklin

Material Testing
Grahm Balkany

Mike Brassil

Daniel O'Brien

Scenarios and Uses

1. Fire Attack

    a. Localized and un-localized

    b. Of various Causes and levels of Intensity

2. Bombing

    a. Various targets such as those with high tourism draw or iconic level

    b. Of various strengths

3. Evacuation

    a. Building Evacuation

    b. Street Evacuation

    c. Wide Scale City Evacuation
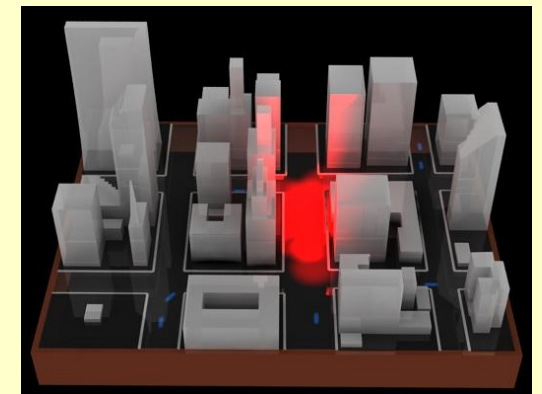
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