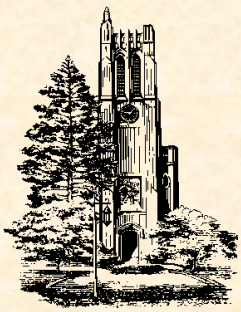
MICHIGAN STATE UNIVERSITY

Technical Specification / Schedule
KML Urban Scene Builder 2008



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CSE 498, Collaborative Design

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Fall 2008

Project Overview

- Boeing simulates urban warfare situations
- These simulations require complex 3D environments
- Having artists manually build these environments is costly
- KMLUSB 08 will procedurally build 3D urban environments using a combination of Google Earth User Interface, KML 2.2, and LUA scripting interface.

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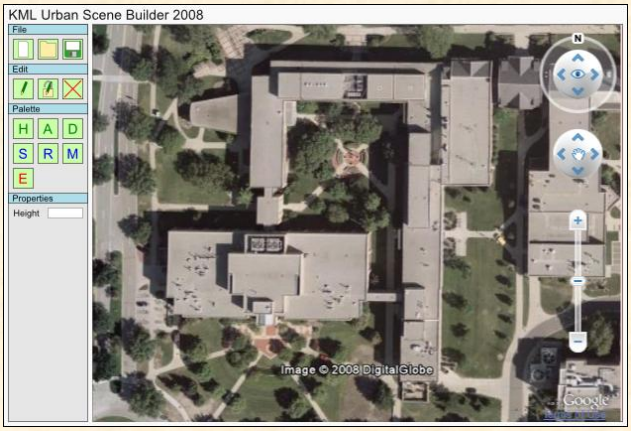
Functional Specifications

- Initial View of GEUIFC



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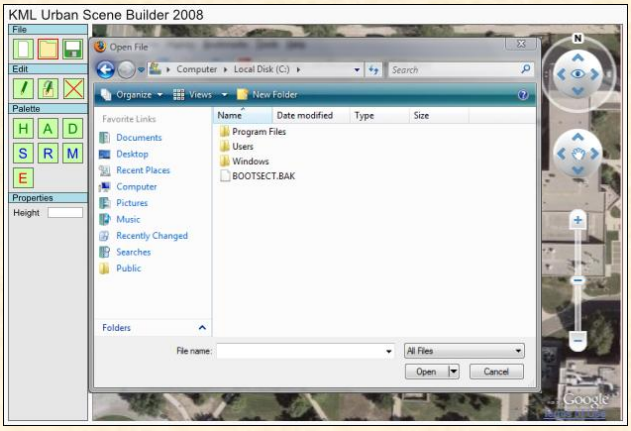
Functional Specifications

- User Can Load Files



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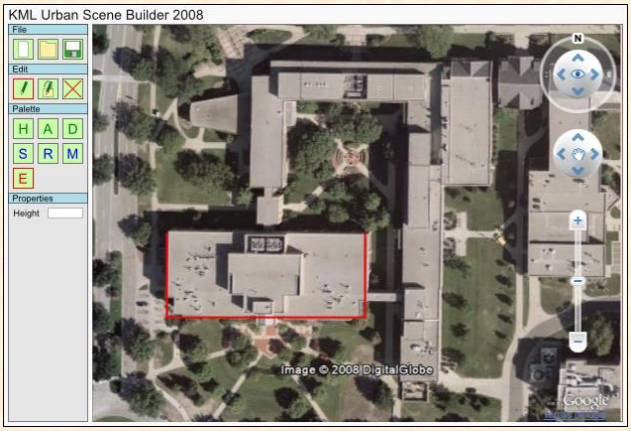
Functional Specifications

- User can draw the footprint and specify the properties of a building.



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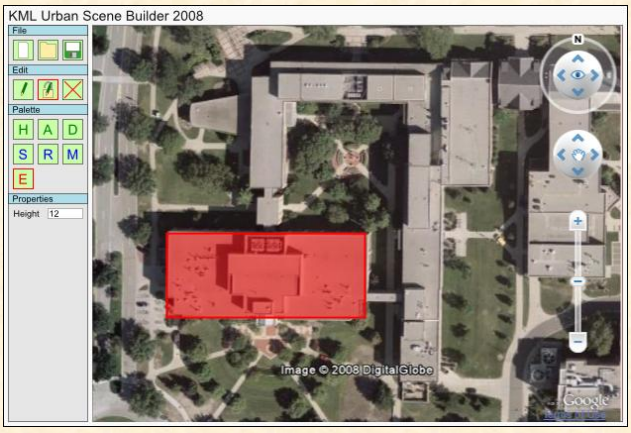
Functional Specifications

- To close the footprint the user has to click on the first point.



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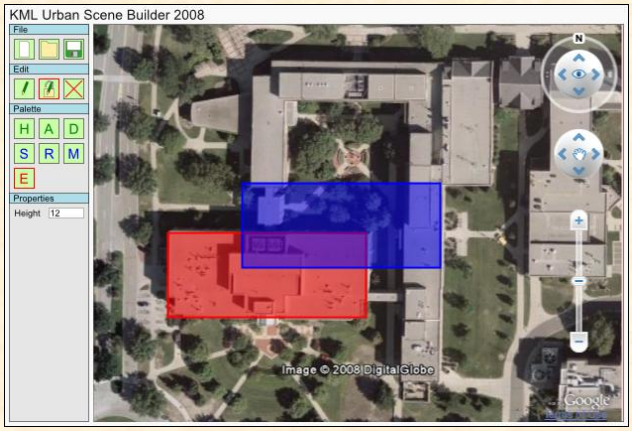
Functional Specifications

- Can move a footprint



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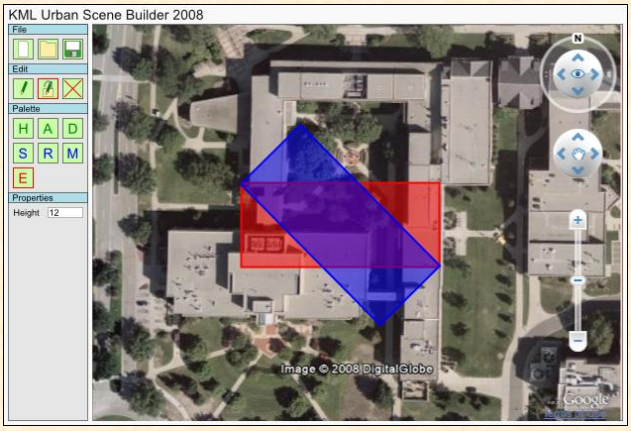
Functional Specifications

- Can rotate a Footprint



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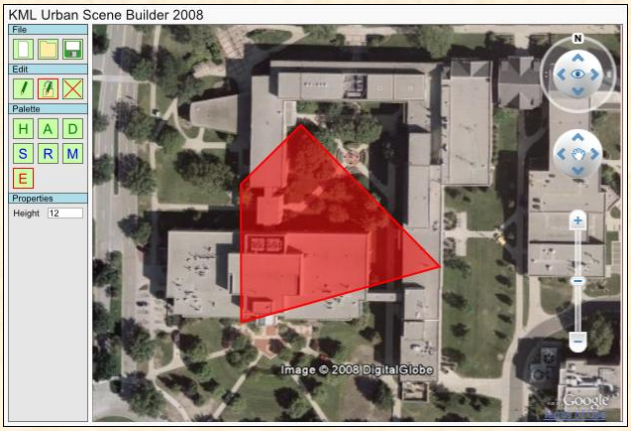
Functional Specifications

- Moving a node



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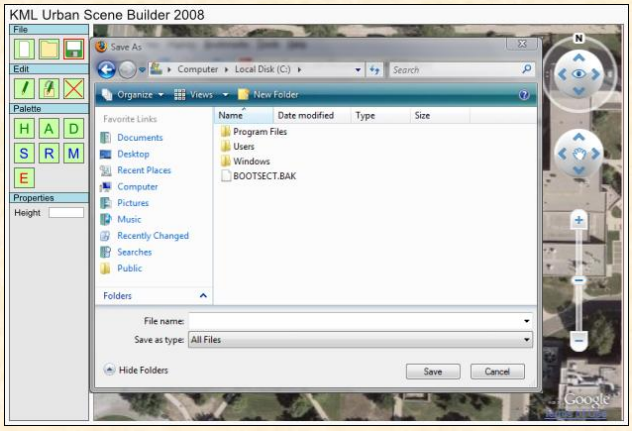
Functional Specifications

- Saving a file



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System Components

- Hardware Platforms
  - Personal Computer
- Software Platforms / Technologies
  - C++
  - XML
    - KML
    - COLLADA
  - LUA
  - Web Browser
  - Google Earth
  - JavaScript

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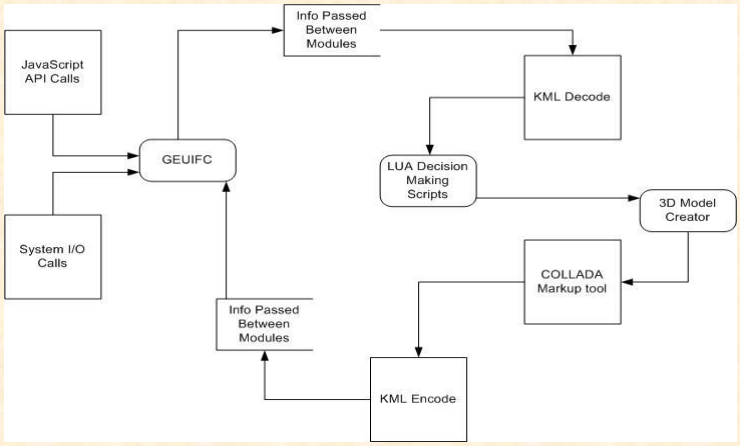
Architecture Illustrated

- KMLUSB08 DFD



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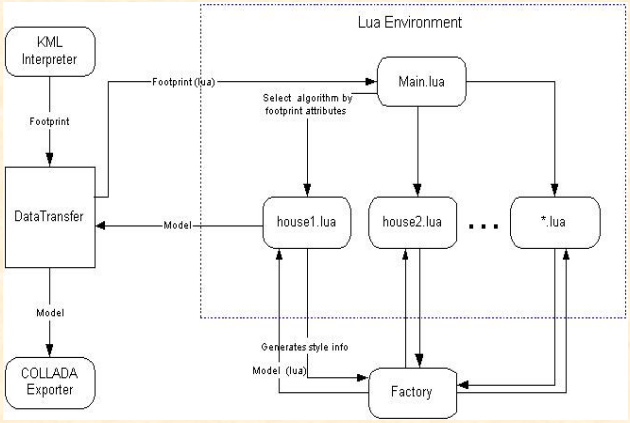
Architecture Illustrated

- 3DMC DFD



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Risks

- GUI
  - Designing solutions for Google Earth that comply with Google Terms of Service (ToS).
  - Time invested in studying ToS and creating solutions.
- COLLADA
  - Complying completely with COLLADA standard so the file created will be readable by the UI.
  - Time spent reading specification and DOM.
- Model Creation
  - Most important piece of functionality
  - People and time spent early in project schedule

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Risks

- Diagnostic Geometry

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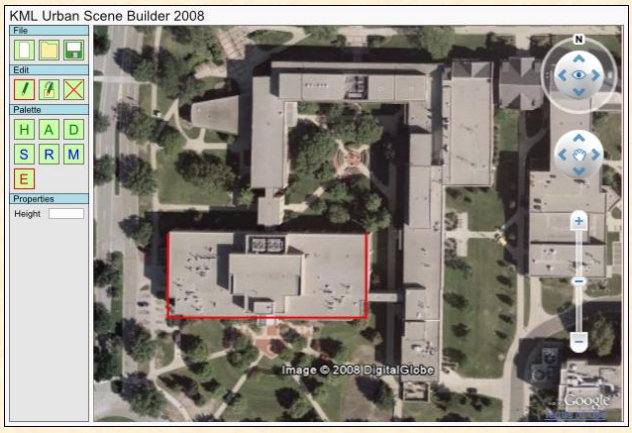
Risks

- How to model interior of buildings. We are only dealing with exterior nodes in our current design.



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Project Schedule

1. Program Flow
   a) Program able to follow set up flow with simple objects.
   b) 9/25
2. GUI Created
   a) GUI able to make footprints to a limited extent.
   b) 9/25
3. Alpha Presentation
   a) Program able to follow flow with a few models without textures.
   b) 10/06
4. Displaying Data
   a) GEUIFC should be able to show models as they are entered.
   b) 10/09

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Project Schedule

5. Textures
   a) Textures and folder hierarchy should be mostly functional.
   b) 10/16
6. LUA Decisions
   a) LUA should have most decision making complete.
   b) 10/23
7. Test Cases
   a) Test Cases should be set up for implementing beta.
   b) 10/30
8. Beta Demo
   a) Beta app should be up and running, benchmarks created here to be tested against later.
   b) 11/03

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Project Schedule

9. Refining Benchmarks
   a) Benchmarks should have refined logic and be created accurately.
   b) 11/13
10. Testing
   a) Test cases should all be working well and fully textured up to the benchmarks.
   b) 11/20
11. Project Video
   a) Project video completed.
   b) 12/01
12. Design Day
   a) Everything done and delivered.
   b) 12/05

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