



## Problem

SKOPE AR 5.0 aims to provide students with a mobile platform to facilitate learning. However, the current system does not offer a true AR experience and lacks real time location functionality.

## Solution

SKOPE AR 6.0's main objective is to offer a true AR experience by blending interactive digital elements into the real world environment. As well as, incorporating live tracking of a users location so they are informed as to where the augmentations exist.

## Current System

SKOPE AR 6.0 displays a mini-map that updates in real time as the user moves around SIPA. Additionally educational material has been placed at core components of the building and appear to the user as they approach them. This was achieved through a controller script written to cycle through data based on the section of the building the user points their device at.

## Implementation

SKOPE AR 6.0 was built with Unity 3D and C# as the primary coding language for scripts. Wikitude SDK was used to recognized targets and Mapbox SDK for its map data.

## Summary

In short, the camera is very smooth and the data renders as expected in its correct location. Additionally, users know their position and distance relative to SIPA thanks to the included map. Moreover, this solution offers a true AR experience rectifying some of the limitations of the previous version.

## Screenshots

Initially, the user needed to stand about 400 ft away at a specific angle to correctly align the 3D representation of SIPA. In this version, the user is now able to get closer to SIPA to view the data. Furthermore, the user can move around the building and display more data specific to the section they are in.

Image 1  
User can see data located in the front of the building.

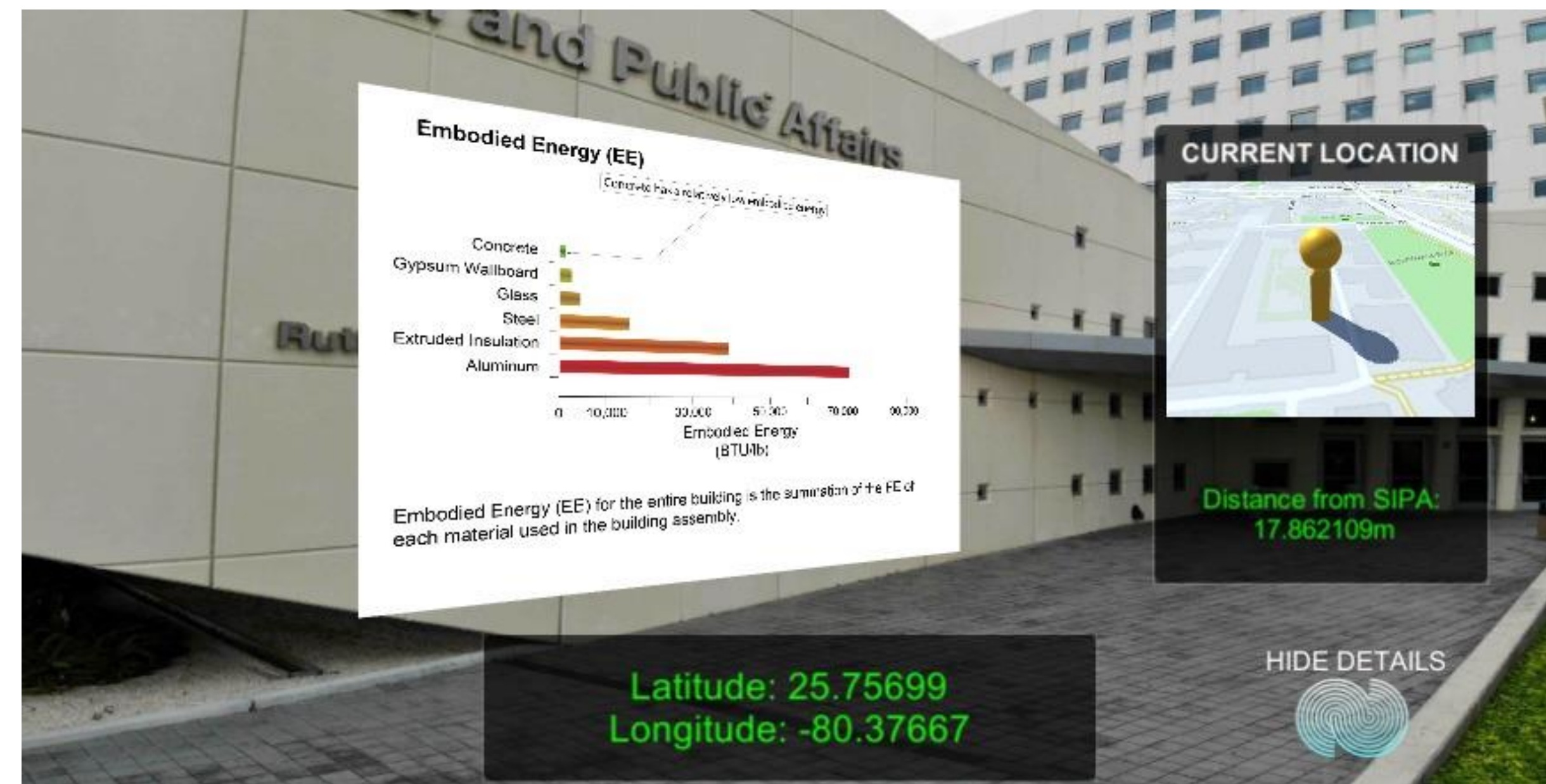
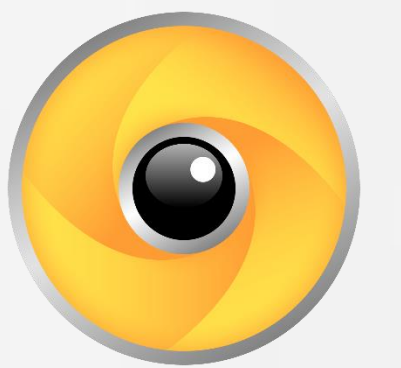
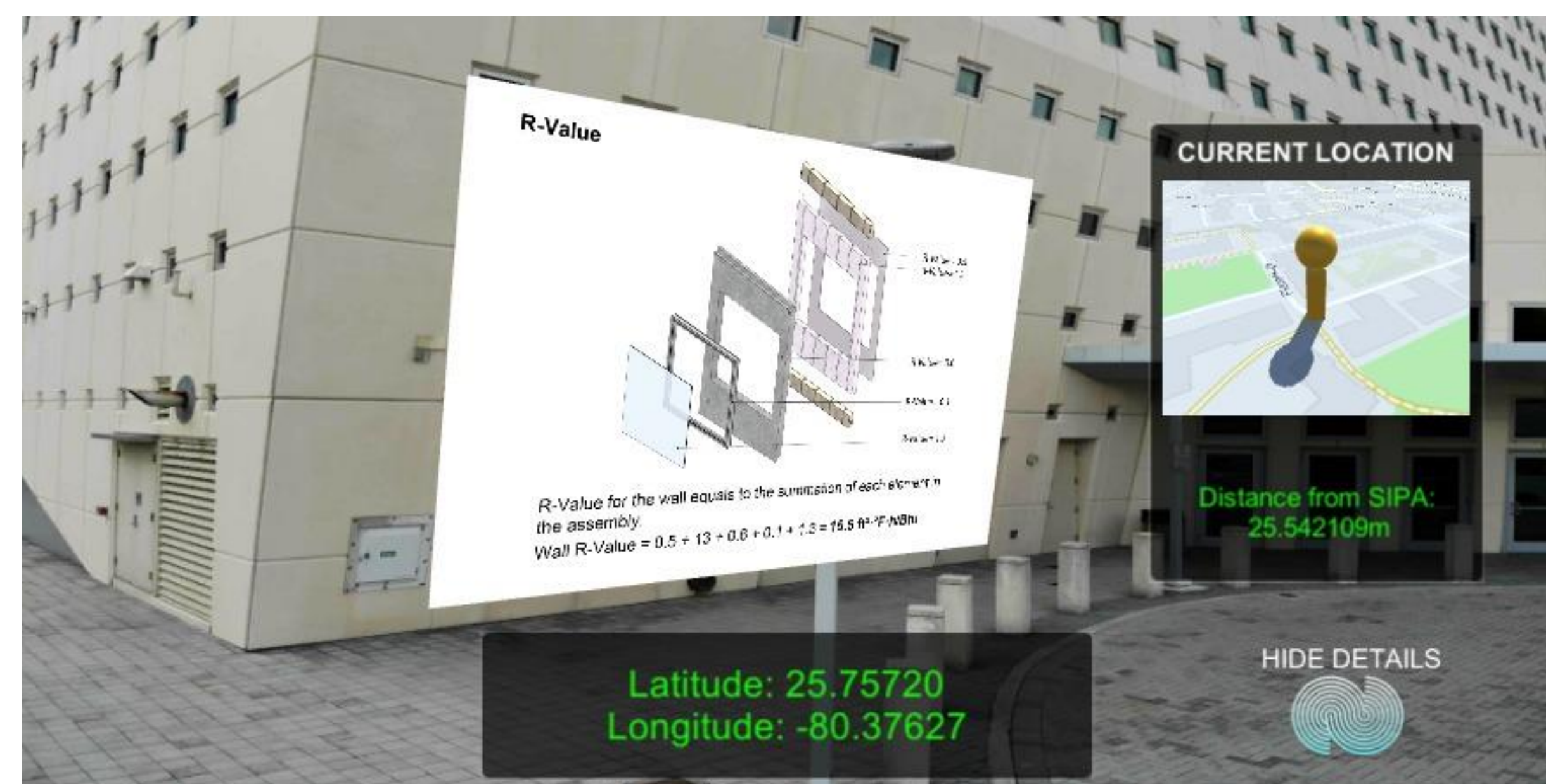


Image 2  
User can see data located in the back of the building.



ANDROID



## Requirements

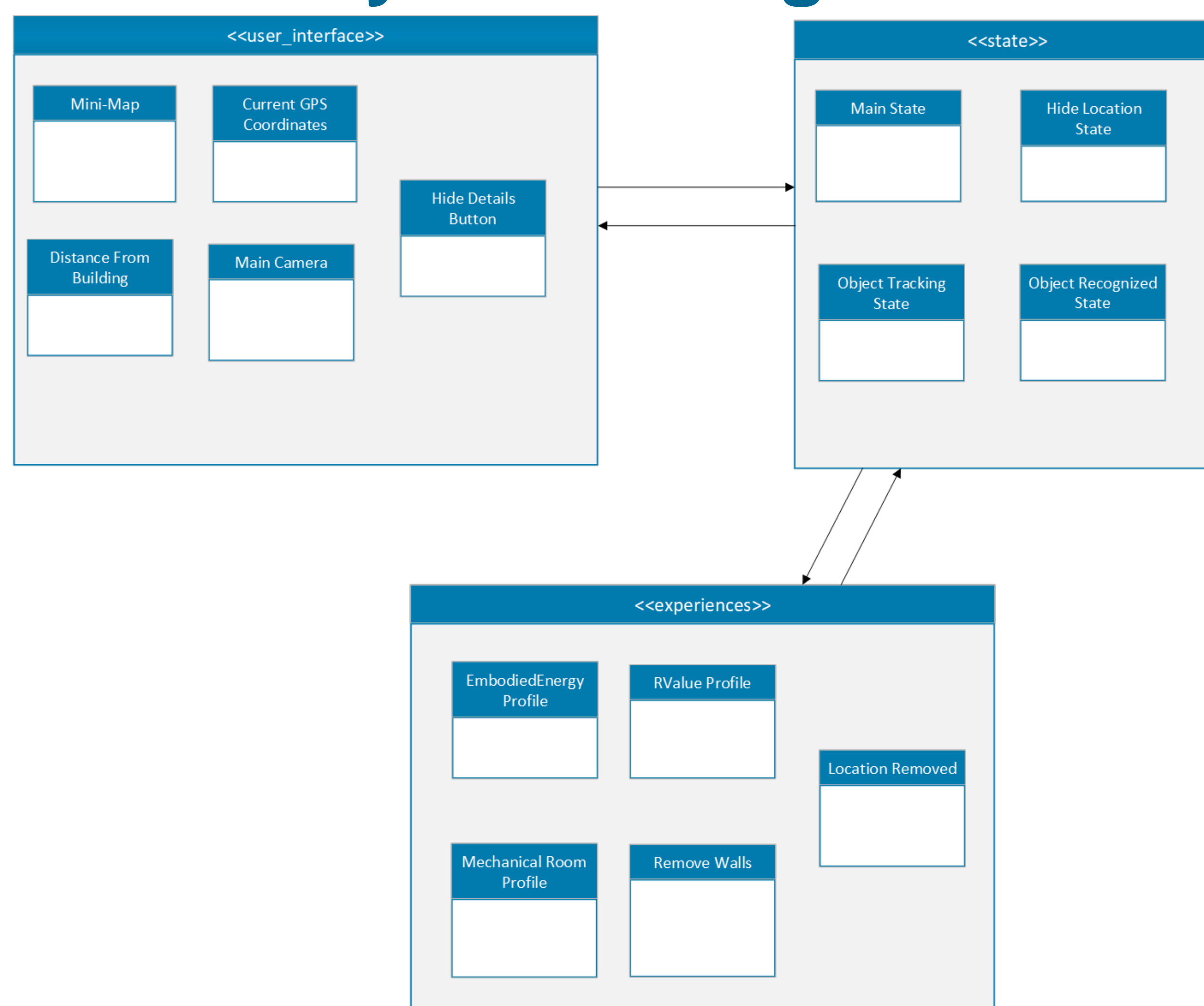
- Controller script renders the correct data based on specific parts of the building.
- Data is scaled appropriately for optimal viewing.
- Data appears to user regardless of the angle they point their device.

## Verification

### Sample Test Case

| Test Case ID:   | Augment Chart on SIPA  |
|-----------------|--|
| SKOP-103        |  |
| Purpose         | To test that the controller is displaying the correct data.  |
| Preconditions   | <ul style="list-style-type: none"> <li>• The user is on campus.</li> <li>• The user points their device at the building</li> </ul>     |
| Expected Output | <ul style="list-style-type: none"> <li>• The correct data is displayed.</li> <li>• The data is scaled at a reasonable size.</li> </ul> |

## System Design



## Object Design

