Progress Presentation

Team - Z2
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Assigned Project: Tactile Map

Problem Statement

Our team is taking on the task of creating a tactile map to help visually impaired employees who sometimes have trouble navigating the first floor of 785 Carling Avenue.

Customer Needs

- The tactile map easily guides visually impaired users around the first floor, and most importantly to room 118B.
- The tactile map is easy to read.
- The tactile map contains a concise legend.
- The tactile map provides bilingual indication.
- The tactile map is accessible to a wide range of visually impaired users.

Benchmarking

Examples of Existing Tactile Maps

- Tactile map of the Tapiola Sports Park
- TactMap at BrailleTech 2016
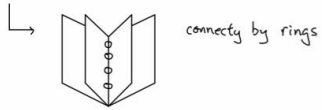- Tactile map at Keskuspuisto Vocational College

Target Specification

	Design Specifications	Relation (=, < or >)	Value	Units
No.	Functional Requirements			
1.	Weight	=<	5	kg
2.	Dimension	=<	50 x 60	cm
3.	Thickness	=<	3	cm
5.	Writing size	=<	15	mm
6.	Map scale accuracy (margin of error)	=<	2	mm

Concepts

4 Designs (2 portable and 2 stationary designs).

Portable

1)

Legend
English / French

Overall Map

Room 118 B Route

i-Hub Obstacles

list Obsticles.

connecty by rings
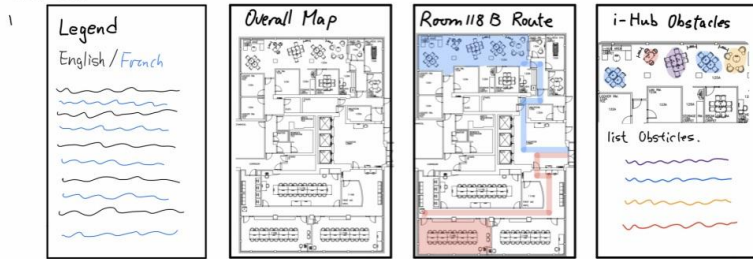
2) Pressed Paper using a mold.

folding line

Legend
English / French

Map with all info

Welcome

Stationary

NORFOLK AVENUE

CARLING AVENUE

legend in drawer (save space so the map can be larger)

map

legend

Traditional map Style

NORFOLK AVENUE

Legend
English / French

CARLING AVENUE
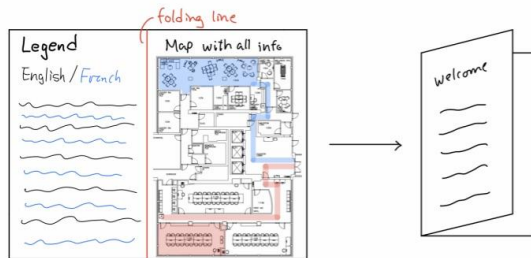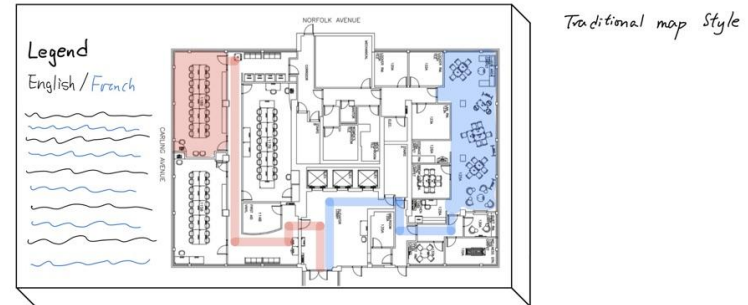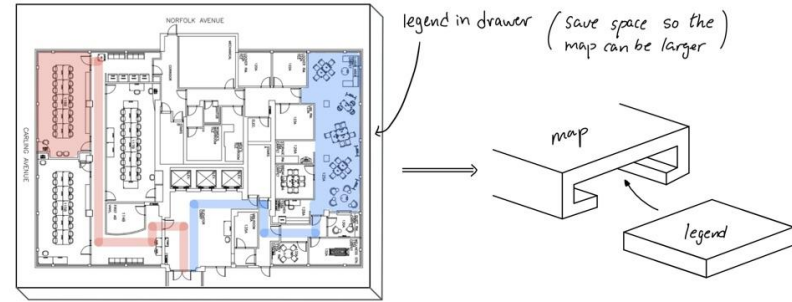
CAD Sketch of Chosen Concept
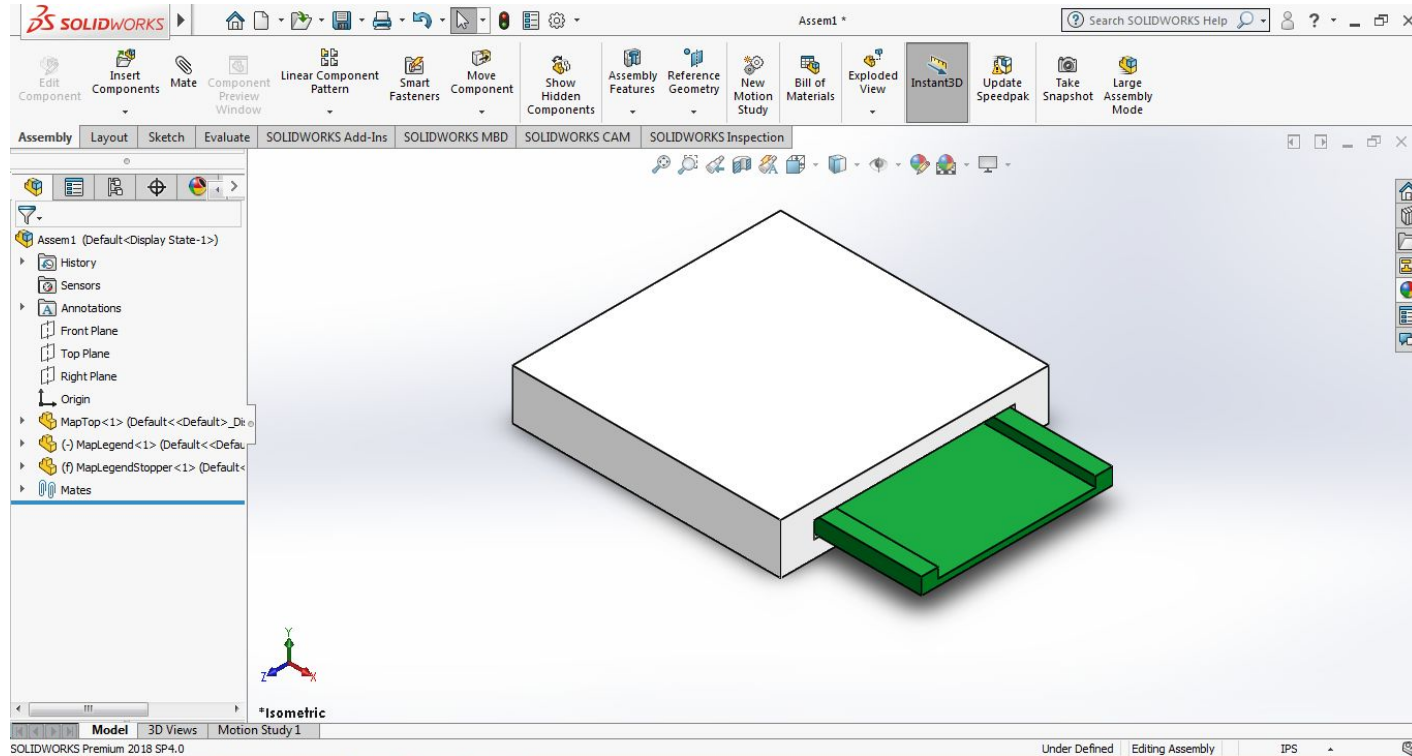
Feasibility Study

Technical:
- Team's ability using Solidworks and other CAD software.

Economic:
- 1kg roll of 3D printer filament costs $20 and $100+.

Legal:
- There are no legal issues related to releasing our solution to the public.

Operational:
- Our group is organized and able to perform well on tasks in a timely manner.

Scheduling:
- The deadlines are listed in the planning table on the next slide and will be respected.

Gantt Chart

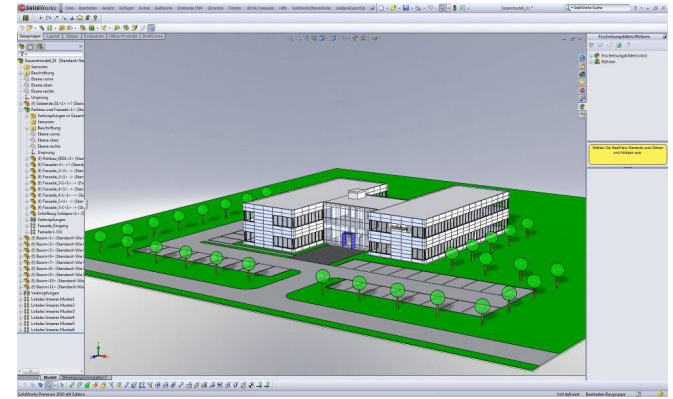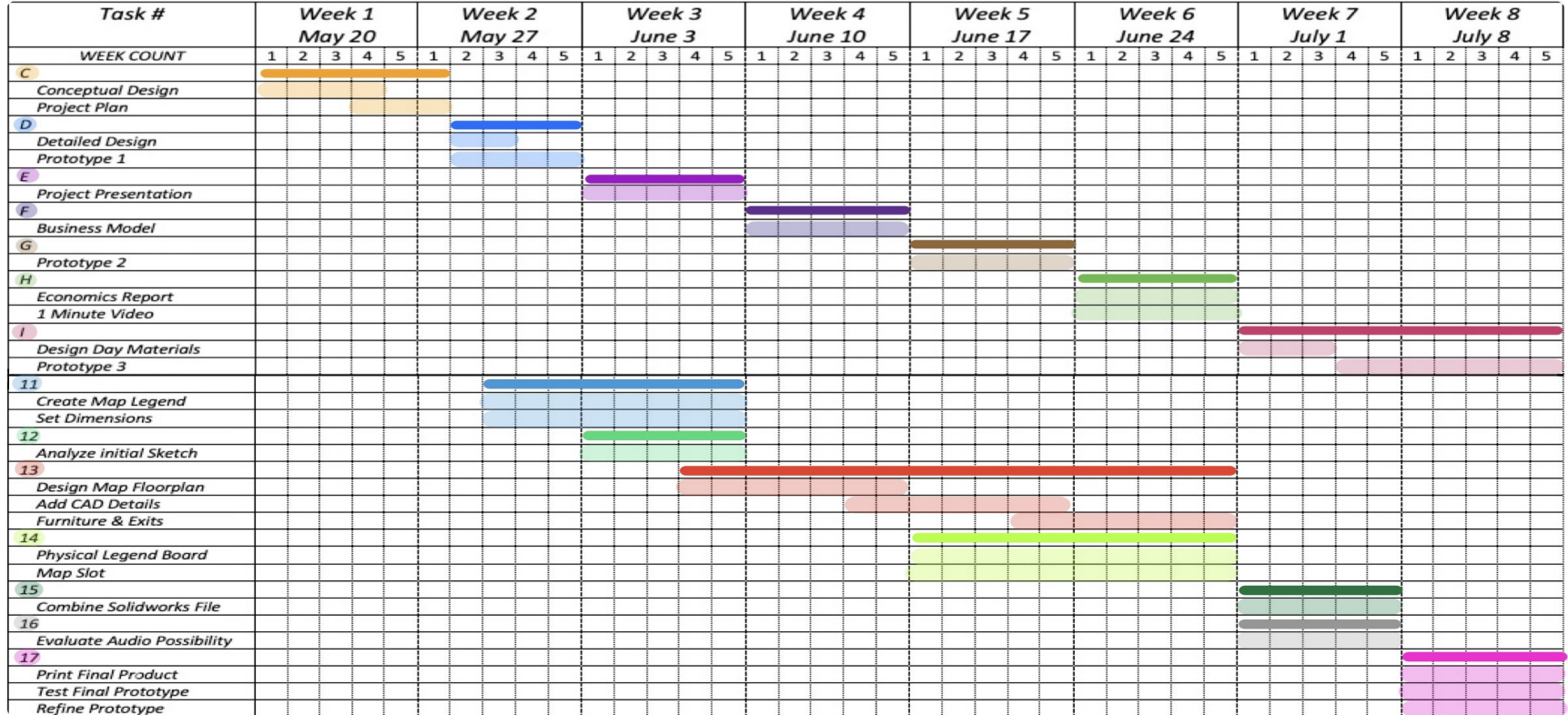| Task #	Week 1 May 20					Week 2 May 27					Week 3 June 3					Week 4 June 10					Week 5 June 17					Week 6 June 24					Week 7 July 1					Week 8 July 8				
WEEK COUNT	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
C																																								
Conceptual Design																																								
Project Plan																																								
D																																								
Detailed Design																																								
Prototype 1																																								
E																																								
Project Presentation																																								
F																																								
Business Model																																								
G																																								
Prototype 2																																								
H																																								
Economics Report																																								
1 Minute Video																																								
I																																								
Design Day Materials																																								
Prototype 3																																								
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Create Map Legend																																								
Set Dimensions																																								
12																																								
Analyze initial Sketch																																								
13																																								
Design Map Floorplan																																								
Add CAD Details																																								
Furniture & Exits																																								
14																																								
Physical Legend Board																																								
Map Slot																																								
15																																								
Combine Solidworks File																																								
16																																								
Evaluate Audio Possibility																																								
17																																								
Print Final Product																																								
Test Final Prototype																																								
Refine Prototype																																								

Prototype Bill of Materials and Parts

Part # & Name	Description (and prototype #)	Qty.	Units Costs (CAD)	Extended Costs
1. Lego blocks And Cardboard	Small plastic parts that can be mounted onto each other in order to create different shapes and structures (**prototype 1**)	50-250 (Depends on size of the blocks) 1 Cardboard Box	$0 (provided by a team member)	$0
2. 3D printer	Prints 3D objects (**prototype 2 and 3**)	1	$0 (no cost is associated with using the 3D printers)	$0
3. Roll of 3D printer filament	Plastic filaments that are used for 3D printing (**prototype 2**)	0.5 kg	$20/kg	$10
4. Roll of 3D printer filament	Plastic filaments that are used for 3D printing (**prototype 3**)	3kg	$20/kg	$60

Client Feedback
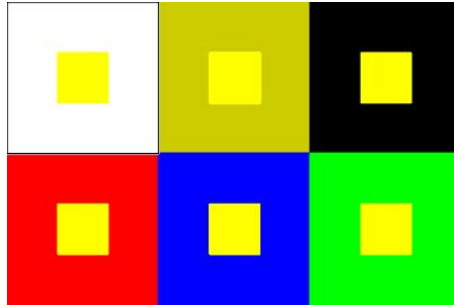
- Have as little detail as possible.
- Only 4% of legally blind people can read braille.
- Braille should be bilingual (ENG, FR).
- The legend should use symbols.
- Some legally blind people can still see colours with a sharp contrast.
- An audio component is highly recommended.
- Only use a few textures as different textures can easily confuse users.
- A stationary design is preferable.
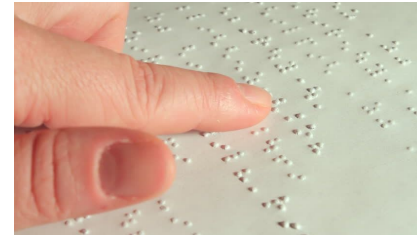
Design Change based on Client Feedback

- Focus on a stationary design.
- Chosen concept is changed to the traditional map design.
- Include only critical information on the map.
- Integration of audio.
- Map printed using contrasting colours.
- Simplified legend.
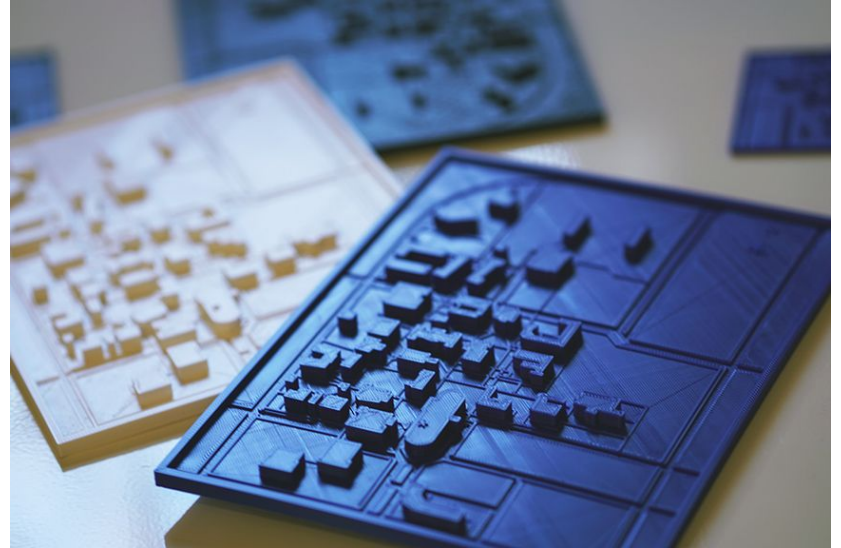
Jesse Warne Design

Concept Design

Symbol	Label
———	wall
—•—	door
⊠	elevator
≣	Upward Stairs
‖‖‖	Down ward Stairs
••••	118 B Route
▽	You are here now
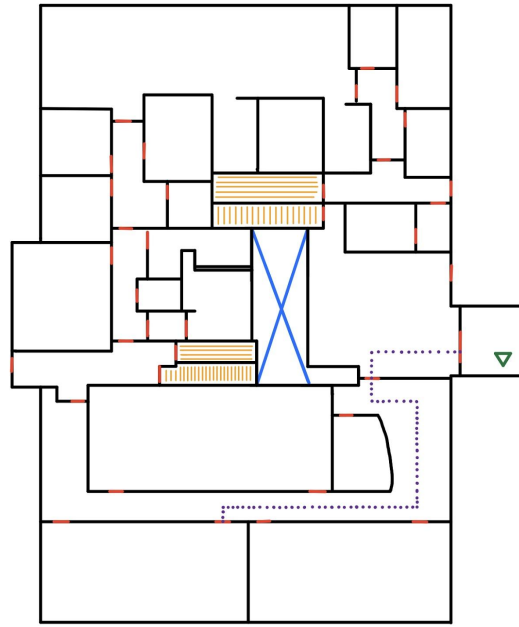
Textured Print of the Legend on the Physical Map:

Black Lines : 1st level of elevation

Red Lines : 2nd level of elevation (above the black lines)

Orange strips: 1st level of elevation with small gaps

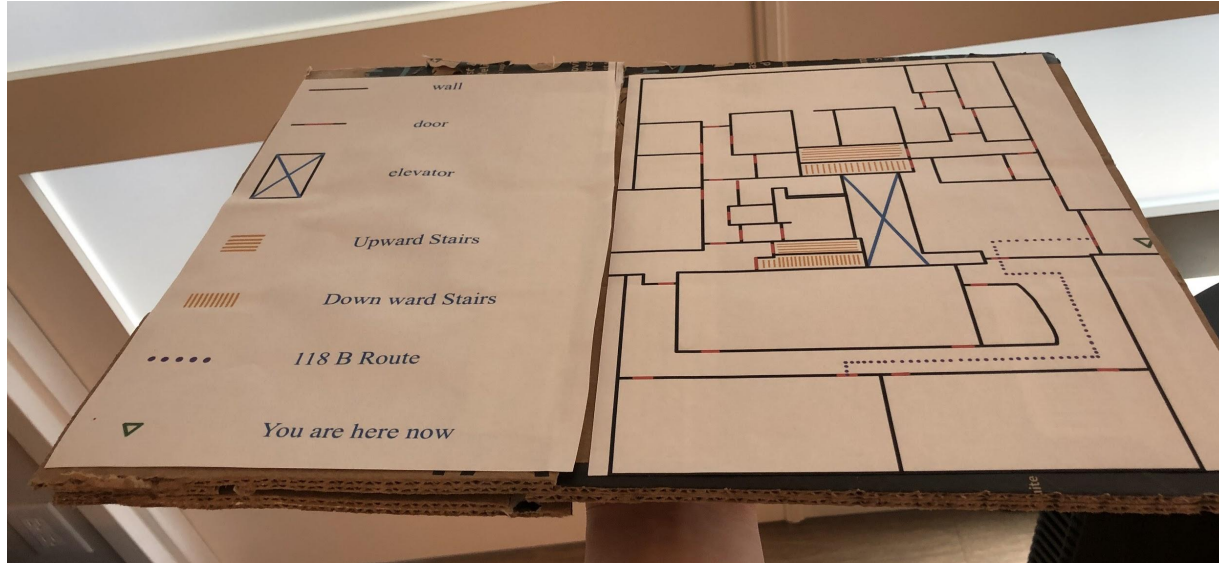Purple dots: 1st level of elevation with dots in standard braille size

Green Triangle: 1 level of elevation

Prototype Documentation and Function
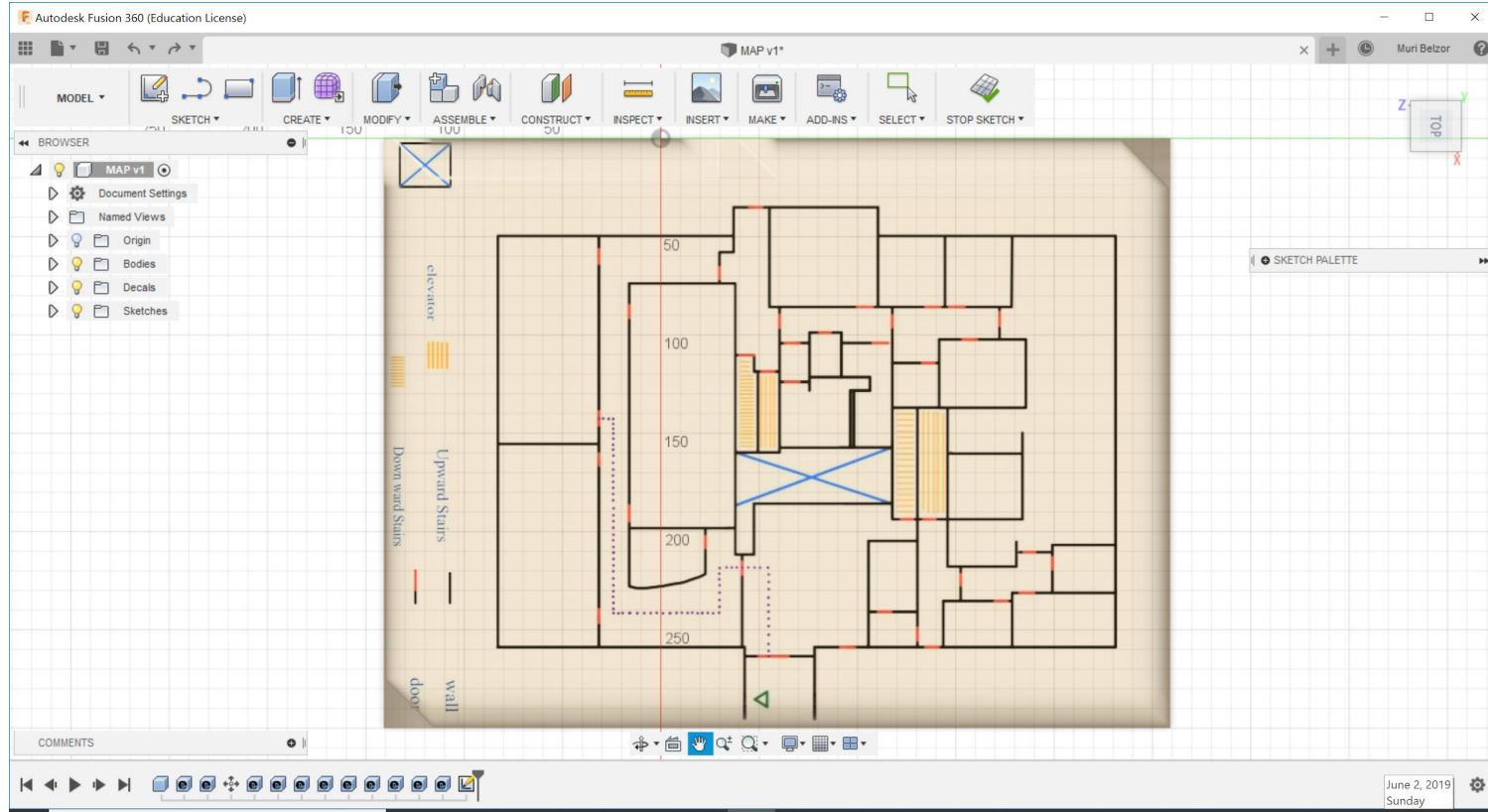
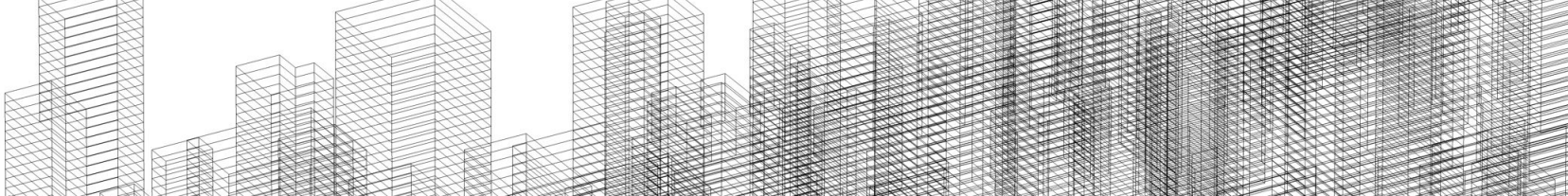# Prototype Documentation and Function
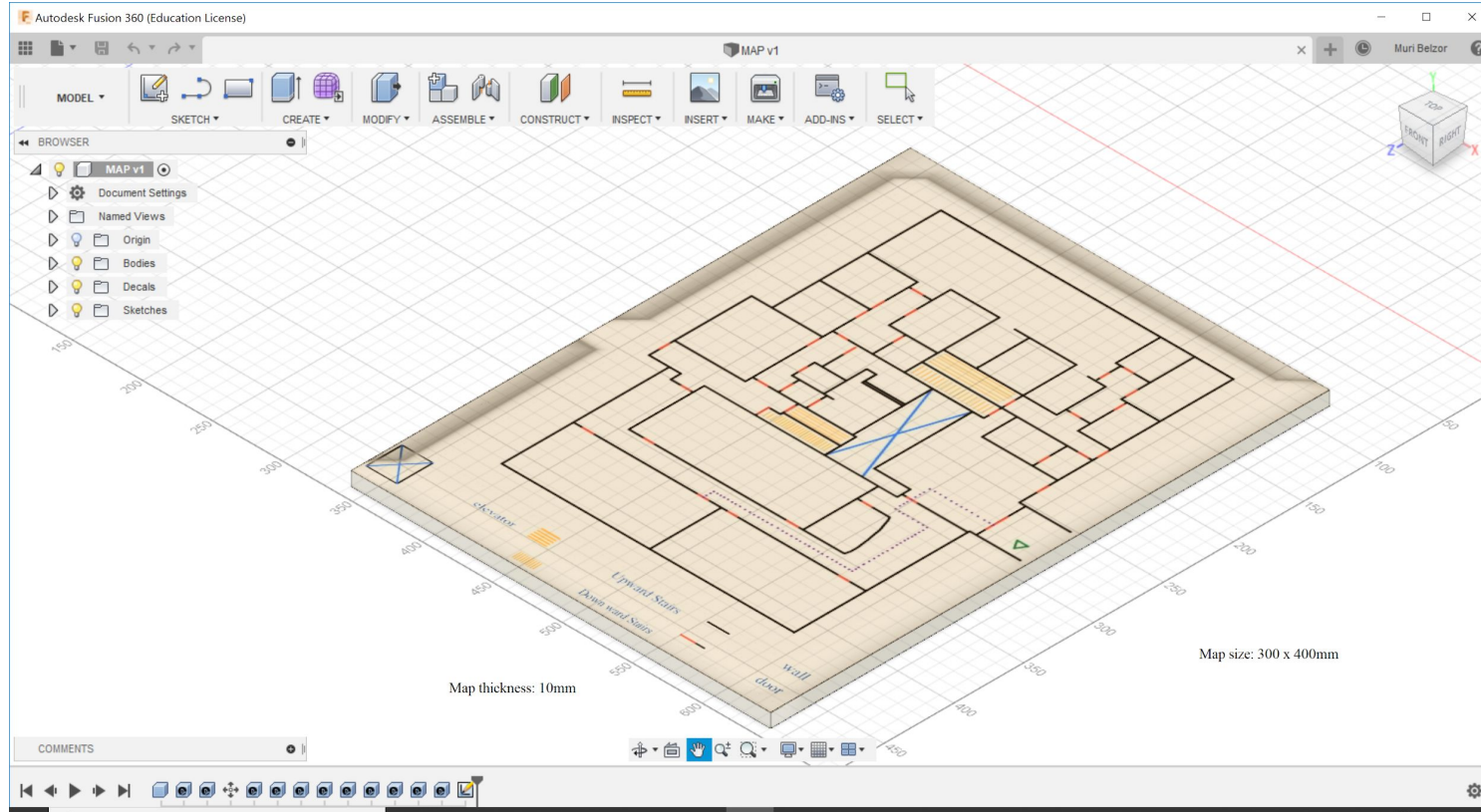
Physical Prototype

The purpose of this prototype is to test whether or not the legend and the map are clear and understandable.We also want to verify that the designated path to room 118B is easy to follow.

Prototype Testing and Performance Evaluation

No.	Design Specifications Functional Requirements	Relation (=, < or >)	Prototype One Value	Target Value	Units
1.	Weight	=<	1	5	kg
2.	Dimension	=<	28 x 39	50 x 60	cm
3.	Thickness	=<	10	30	mm
5.	Writing size	=<	15	15	mm
6.	(margin of error)	=<	2	2	mm

Future Development

Thank you!

From Team Z2