

FINAL PROJECT

Bus Stop Design

Based on your component design, SF MUNI has selected you as a finalist in the design competition for the replacement of 92 stops citywide and additional 8 new stops. To select the winner, the client has requested schematic designs for 21 stops along a hypothetical route which represent the variety of sites across the city. SF MUNI has also specified that each stop is to be prefabricated to the largest extent possible to minimize construction cost and disruption to the community. A single bus stop can consist of multiple prefabricated components, but components should be designed to be quickly assembled on site, ideally with minimal space and equipment requirements.

Design Requirements

- Site boundaries - all stops must physically fit within the site boundaries and must be set back at least 18 inches from the curb.
- Occupancy - each stop must have enough space to meet the specified design occupancy level.
- Transportation - prefabricated components must meet the following volume requirements to be transported by truck: 14 feet high, 102 inches wide and 40 feet long.

Materials Provided

- Map of the bus route marking the location of the 21 selected stops (Nov 5)
- Template Digital Project part and Design Table which provides the site geometry and occupancy requirements for each stop (Nov 12)
- Collection of avatars which can be inserted into your DP model (Nov 12)
- Instructions on how to animate your digital model along the bus route (Nov 19)

Deliverables

- Specified below by assignment

Selection Criteria

- Quality of rider experience
- Appropriateness to site context
- Capacity to improve SF MUNI's public image
- Constructibility

Team

- You will work in teams of four this project
- Teams must comprise members who worked on both components in Assignment 3 (i.e. two seat designers / two enclosure designers)
- You will evaluate your peers in writing at the conclusion of the assignment

Assignment 4a

Getting to Know the Problem Space – Needfinding in the City

Due: November 12

Now that you have the project specifications, your job for this assignment is to research the SF MUNI bus stops and its users on the aforementioned route. This is a chance to step back from implementation in CAD and develop a unique point of view on the needs of MUNI and

its riders. Your team should definitely ride the MUNI, talk to users, and check out existing bus stops. Remember that SF MUNI wants new riders so the needs of current AND future riders should be considered.

Deliverables:

- (1) Presentation (5 minutes)
 - Tell us a brief story about the users and the experience of using the bus stop (photos a must)
- (2) Write Up
 - Create a prioritized list of user needs and requirements for the bus stop design
 - Answer the following questions: How well did your initial component designs meet the new needs you have identified? What are some ways it needs to change?

Assignment 4b **Logic Diagrams and Concept Sketches**

Due: November 19

Now that you know your users and their needs, it's time to start flushing out a design direction. For this assignment, we would like to see the development of your design concept and parameteric logic as well as your plan to complete the final digital model.

Deliverables:

- (1) Sketches illustrating your design concept and the chosen parameterization
- (2) Logic diagram showing the relationship between drivers / constraints and the parameterization you have chosen
- (3) Description of the product structure for your final digital model including
 - Number of components
 - Description of input / output information for each component
 - Strategy to divide work among team

FINAL REVIEW

Time TBD

You will present your final design to a jury of academic and industry critics.

Deliverables:

- (1) Digital Model including
 - Design table capable of 'driving' the model for all sites in the aforementioned route based on given parameters + any parameters your group has created
 - Avatars in seated and standing positions for each site configuration
 - Rendering scene including surface treatment and shadows
- (2) Presentation (15min)
 - Summary of customer needs and requirements as identified in assignment 4(a)
 - Description of how design meets needs / requirements
 - Three renderings showing the design in a different site context (photo background)
 - Video animation showing how the design adapts to each site configuration (more on this later)