The commute by automobile, as it happens in Houston Texas, is a spatial envelope. This envelope widens and narrows based on a set of variables: position, traffic, speed, and time of day, and it changes from day to day. The project is a study of and an intervention into this spatial envelope of the commute. The intervention takes the form of a gas station located on a feeder road adjacent to a freeway. Video is both a means of study of the commute, and a tool for the design of the station.
Thanks to my thesis committee:
Albert Pope, Stephen Fox, and Fares El-Dadah

Special thanks to David Brown, whose supplemental guidance was integral to the success of the project.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text and Drawings</td>
<td>1</td>
</tr>
<tr>
<td>Video</td>
<td>12</td>
</tr>
<tr>
<td>List of References</td>
<td>124</td>
</tr>
</tbody>
</table>
The commute (by automobile) is a spatial envelope that changes from day to day. Defined by the field of perception and reception around the automobile in motion, its shape is given by a number of variables: position, traffic, time of day, and speed. Each of these variables can widen or narrow the field of perception and reception around the vehicle and thus account for a narrowing or widening of the spatial envelope of the commute.
The program is a gas station with a sign element. The gas station is integral to the automobile and thus to the commute. This station is organized around paths of motion through the site and it offers drive-up and drive-through programmatic elements to minimize time spent outside the automobile. The sign offers not only the station logo and advertisement but also information on events or conditions on the roads that are not within the field of perception and reception around the automobile as it passes.

The spatial envelope of the commute is broken when the vehicle is exited. Drive-through program maintains the envelope.

The Sign expands the spatial envelope of the commute by providing information on events or conditions ahead that are not within the field of vision around the car.

(The goal for most commuters is to get to work or home as quickly as possible. By knowing events or conditions ahead we may avoid them, quickening the commute. Drive-throughs further quicken the commute by allowing for more convenience.)

Signage within the site also allows for knowledge of elements not immediately visible within the site.)
The hypothetical site chosen for intervention is adjacent to a freeway feeder road in Houston. The paths of vehicles are here simplified and the variables are more easily studied. The variable of position is important, the project is perceived in different ways from the freeway, feeder, and from the site itself. The other variables can be built into different scenarios and animations for the study of the project.

(Position Variable): 3 zones of intervention

Paths of vehicles are simplified.

The city of Houston prohibits most signs on the Beltway 8 and the Sam Houston Tollway.

Potential locations of project. Points at which Transtar already operates Freeway Cameras.
The Sign is as important to the project as the design of the building. It is an element within the spatial envelope of the commute, interacting with commuters on the freeway, feeder road, and on the site. Portions of it are visible from further away, and portions are visible only from close to it.

A larger sign is visible from further away than a smaller sign. Single signs can be subdivided to become readable only when one is close to them.

It becomes possible to regulate and program the sign based on the conditions around it, when the spatial envelope is narrow, elements on the sign are larger; when the envelope is wide, the elements are larger.

The above sign studies ignore the laws put forward in the Houston Sign Code to govern the location and size of signs as well as what may be put on them. Motion pictures are prohibited.
The sign responds to varying conditions and events on the roads around it. It responds to the spatial envelope of the commute, and it expands the spatial envelope of the commute. The sign is designed using video and animation, using different scenarios, combinations of conditions and events.
Plan, Not To Scale

Paths of vehicles govern the layout of the station. Each of the paths constitutes a portion of the spatial envelope of a commute.

The station can be divided into two portions.

- exit vehicle briefly
- remain in vehicle

A: Freeway
B: Feeder Road
1: Sign
2: Lane One: ATM, Mailboxes
3: Lane Two: ATM, Mailboxes, Drive Through
4: Drive Through Convenience Store
5: Lane Three: Drive Through
6: Pay Phone
7: Pumps, Vending, Air
8: Pumps, Vending
9: Attendant Booth
10: Restrooms
11: Car Wash
Main Canopy and Store

Main Canopy and Store, Front Elevation

Main Canopy and Store, Street Elevation

A company in Philadelphia already runs a drive-through convenience store, with plans to open 50 more in Pennsylvania, New Jersey, and Delaware. The gas station would have a store similar in program and usage.

Main Canopy and Store, Rear Elevation

*Customers in need of... basic products will experience ultimate convenience and customer service by driving through one of two canopy-covered lanes on each side of their 1,200 square foot building.... Without reaching for cash, credit card, or getting out of the car, the customers’ order will be picked, packed and placed into their vehicles, in less than a minute.*

Main Canopy and Store, Side Elevation
Restrooms and Attendant Booth

Restrooms and Attendant Booth, Front Elevation

Restrooms and Attendant Booth, Side Elevation

Restrooms and Attendant Booth, Rear Elevation

Restrooms and Attendant Booth, Side Elevation
Pump Canopies

Vending is combined with the pumps under the canopies. It is possible to purchase a candy bar or soda while fueling one's vehicle - without using the drive-through convenience store. Breakage of the envelope is minimized.

Gas Pumps, Side Elevation

Gas Pumps, Street Elevation

Gas Pumps, Side Elevation

Gas Pumps, Rear Elevation
Car Wash

Car Wash, Front Elevation

Car Wash, Side Elevation

Car Wash, Street Elevation
VIDEO
LIST OF REFERENCES

Video Recordings of Commute by Author, 98 days from March 4, 2002 to August 2, 2002.

Houston TranStar. Information available from http://traffic.tamu.edu/transtar.html (Copyright, 2003, Houston TranStar)


Alpine Farm Stores. Information available from http://www.alpinefarmstores.com/ (Copyright 2002, Alpine Farm Stores.)


Kennedy, Randy, "Morning Drive is Set for Monday", New York Times, Nov. 16, 2002