The local dimension of metropolitan mobility systems in São Paulo: An exploration of the planning and design of sustainable nodes of mobility and their impact on local spatial qualities.
São Paulo: A first impression
São Paulo: A city of contradictions
São Paulo: A city of contradictions

*Extreme scale of the metropolitan region: 20 Million inhabitants

*Extreme growth of population

*Strained Infrastructure

*Exclusion of the poor

*Changing economic landscape
Content of Presentation

Introduction

Problem description

Main findings of Research and Analysis

Design development

The urban node
A mobility terminal
Scale of a unit

Conclusion
1. Problem description

A city exclusively ‘infrastructured’ for metropolitan scale production.
The current state of infrastructure

Integrated infrastructure?

Space in the city
The current state of infrastructure

Integrated infrastructure?

Infrastructure as ‘technical space’
The current state of infrastructure
Integrated infrastructure?

Bordering the most precarious regions
The current state of infrastructure

Integrated infrastructure?

The infrastructural network as a backbone for urban transformation
2. Research & Analysis

Two main reasons for unintegrated infrastructure.
1: Conflicting scales

Metropolitan scale
1: Conflicting scales

Human scale
Conflicting scales:
The metropolitan scale determines the human scale

Conflicting scales should become complementary
2: Means of infrastructure
monofunctional / exclusion

Metropolitan scale production
Economical

Social
exclusion & eviction

Environmental
pollution & annual flooding
2: Means of infrastructure

social consequences

Metropolitan scale production
Economical

Social
exclusion & eviction

Environmental
pollution & annual flooding

ERASING THE INFORMAL - 2010
2: Means of infrastructure

Environmental degradation

Metropolitan scale production
Economical

Social
exclusion & eviction

Environmental
pollution & annual flooding
Objective

By the design of an intermodal mobility node, explore the potential of an infrastructural network as a backbone for economic growth, environmental preservation and social development. Utilize infrastructure not for the sake of ‘functional infrastructure’ but to foster inclusive urban development in decentralized regions. With this promote the development of a more inclusive and sustainable city.

Strategy

*Integrated Integrative Infrastructure*
3. The urban node

*Connecting the people with the city and the city with the people*
The urban node?

An intermediate scale
Design principle

FROM A BOUNDARY WITH FRAGMENTED AREAS.. TO AN ACTIVE BORDER OF ENGAGEMENT
Infrastructural layers

topography
Infrastructural layers
existing water stream
Infrastructural layers
planning for harbour area
Infrastructural layers
existing railway
Infrastructural layers
expansion of railway
Infrastructural layers
expansion of railway

Engenheiro Goullart

Linha Verde Paulista
Infrastructural layers
existing and recently
removed built fabric
Infrastructural layers
existing roads
Infrastructural layers
proposal for lineair
public space and
slow traffic area
Infrastructural layers
proposal for urban surrounding
Infrastructural layers
proposal for mobility
terminal
Infrastructural layers
Backbone of public space
Corridor of public space
connecting to the terminal and the opposite side

1. Metro access
2. Existing business
3. Circulation to train and buses
4. Kiosks & tickets in public space
5. BRT platform
6. Waterway as backbone corridor
Corridor of public space
connecting to the underground
Corridor of public space
An integrated and decentral strategy for water infrastructure

1. Separate sewage
2. Buffer & treatment
3. Slow traffic infra
4. BRT stop
5. Local business
6. Vegetation
7. Community facilities
8. Community gardens

Corridor of public space
Integrating the node with the terminal
4. The Multimodal mobility terminal

*Estação Tiquatira*
Design principle

FROM LARGE SCALE...

... TO HUMAN SCALE
Grain of the built fabric
Framework..
..Infill
The building process
urban situation
The building process
placement of concrete trusses
The building process
repetitive structure
The building process
railway platform placed in
between the concrete trusses
The building process
direct access to the railway
platforms
The building process
central escalators and lifts
The building process
kiosks, coffee and tickets
The building process
small scale business
The building process
kiosks, coffee and tickets
The building process
concrete slab as roof for
the terminal
The building process

light pergola structure

for the bus station
The building process

decentral circulation cores
for stability and roof access
The building process
wooden terrace defining public and private areas
The building process
diversified infill the provided framework
The building process
diversified infill in
the provided framework
The building contains a framework of double height areas that can be bought individually or by small collectives to semi-self build their desired infill. Different financial models are possible, and infill will have to meet certain general safety requirements.
Framework

who inhabits this structure?

Henrico the architect
Framework
who inhabits this structure?

Henrico the architect built his own family house.
Framework
who inhabits this structure?

Henrico the architect built his own family house... he met João in the local bar...
Framework
who inhabits this structure?

Henrico the architect built his own family house, he met João in the local bar, and because João has a construction business...
Framework

who inhabits this structure?

Henrico the architect built his own family house. He met João in the local bar. And because João has a construction business ... they decided to do business together and expand the building!
The building process
facade screen
The station level with the screen facade
Facade screen

shadows
Facade screen

inbetween spaces
5. The scale of the unit

*Filling in the framework*
Design principle

**PROJECT THINKING:**
ONE-TIME IMPLEMENTATION

**PROCESS THINKING:**
GRADUAL DEVELOPMENT
Incrementalism

“Constructing a good half house is better than constructing half a good house.”

Alejandro Aravena - Elemental
Structuring incremental development
A set of urban guidelines

Facade variation

Maximum height = 6 layers (3 units)

minimum of 10% should be open area

collective area must be open for crossing

70% of the area should be sold
50% should be occupied by building
Self-built units
creating an opportunity
Self-built units providing infrastructure

PV cells in the facade collect energy that can be of use for the offices, dwellings and other functions of the building.

Rainwater is collected on the different rooftops and channeled down through the main concrete trusses of the building. The collected water can be utilized later in the dwelling and for watering the collective greenery.

Sewage and other piping are situated in the ducts of the concrete wing floors and go down through the main concrete trusses of the building.

Gas and electricity is available for the upper level. Garbage disposal ducts are situated along every circulation core. Fire distinguishers are situated at strategic points in the collective outdoor space.
The use of local knowledge
cheap, quick and beneficial for the community
The use of local knowledge
inside - outside

smart use of simple materials

cobogo
glass brick wall
Self-built units

development plan

- larger function: office space
- public amenity: kindergarten
- dwelling units: collective or individual developed
- separate or integrate dwelling and workspace

Self-built units development plan

- Dwelling units: collective or individual developed
- Public amenity: kindergarten
- Larger function: office space
- Separate or integrate dwelling and workspace
Self-built units
financial model - different actors

SMALL
structure 'unit' for sale to individuals; for purpose of building a house or as a real estate investment

MIDDLE
Collective of individuals of a cooperation can buy one or several units and develop into separate houses, a collective living area or a combination between work and dwelling

LARGE
The SP municipality can invest and with that 'regulate' the use of the area. (public amenities, larger business, social and low cost housing.)
Guiding the development detailing

Different materialization of the upper deck.
6. Conclusion
(giving) back to the city
Zooming Out from the human scale...
Zooming Out
to the neighborhood...
Zooming Out
the in-between spaces...
Zooming Out
the connection with the city
Zooming Out
the connection with the city
Zooming Out
the urban region..
Zooming Out

And finally: the metropolis as a whole
Thank you!