Sustainability in Sao Paulo

Outline

- **Sao Paulo's Sustainable Master Plan/Ecovila**
- **Bienal Internacional de Arquitetura de Sao Paulo**
- **FAU educational exchange-Green corridor**

- **Botucatu-Floravida-Bioarquitetura**
- **Next steps**

A travel grant report by Carmen Vidal-Hallett

Sponsored by: Partners of America

November 2005

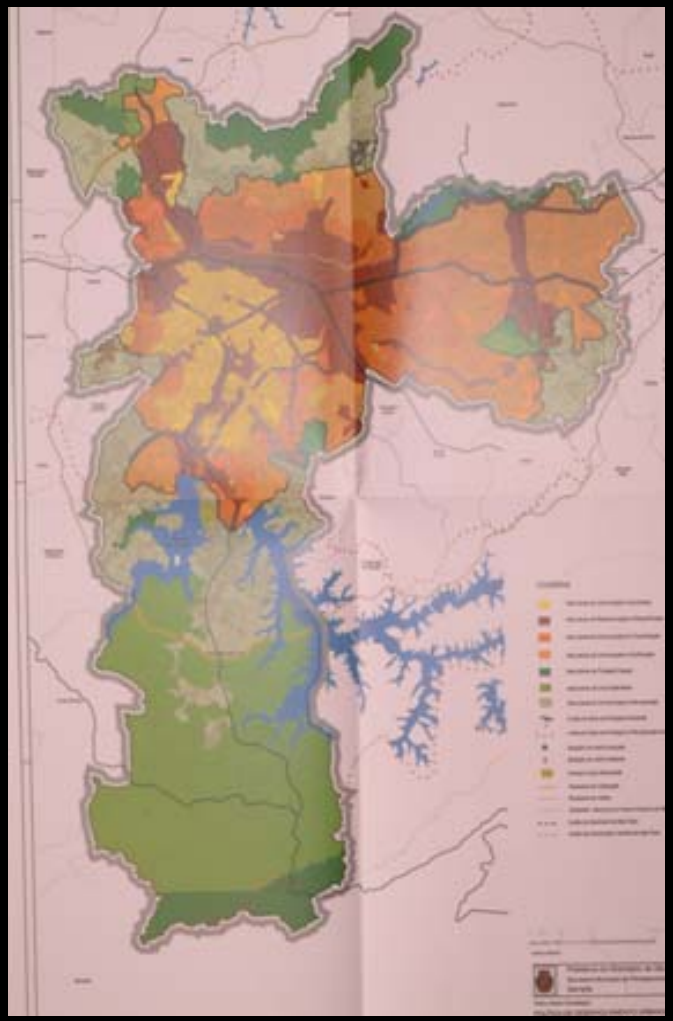
Sao Paulo

- Founded in 1554 by the Jesuits
- Original economy was mines, Then coffee…
- Huge 20th century immigration
- Presently Sao Paulo is the industrial and economic center of South America
- 2002-2012 Sustainable Master Plan

Sao Paulo Data

- 8651 Km^2 (Sao Paulo City 1500 Km^2)
- 39 municipalities
- 20 million inhabitants in the metropolitan area (Sao Paulo City 10 million inhabitants)
- 2 million live in favelas
- $102,8 billion dollars/year Gross Product
- 518,5 km perimeter
- Largest airport and Universities in Latin America
- Sofisticated Modern Medical Network
- Active cultural and Institutional center I Latin America

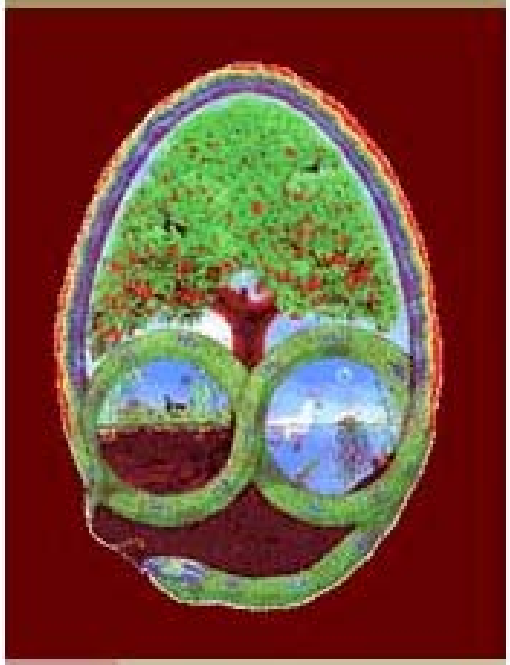
Sao Paulo Master Plan



- 1971 first Master Plan under the military regime
- **Master Plan 2002-12**
- Sustainable Plan divides the City in Macro-regions and sub-municipalities.
- Use of transfer of building rights to protect existing open spaces.
- Major green corridors established to compensate for the lack of green space.
- Public Transit made a priority with numerous exclusive bus lanes throughout the City.

Evento 2 Ano 1

Setembro 2005



Ecovila

São Paulo Círculo Educação e Cultura

Projeto - Mão na Massa

Workshop de Permacultura com Peter Webb

Peter Webb é australiano, estudou permacultura c
Bill Molison. Formado em *horticultural science* e
dinâmica. No Brasil tem ministrado cursos e dese
tos de agroflorestas, agricultura sustentável, cons
tal, paisagismo, cirurgia em árvores e reflorestan
mente uniu a permacultura à psicologia do budism
parceria com Bel Cesar e desenvolve atividades de

Ecovila São Paulo

Mundo dividido (visão de mundo)

Ecossistema Urbano / Natureza

Viabilidade Econômica (198) * Sustentabilidade Ecológica (47m2)

Sonho de Consumo * Qualidade de Vida

Alta Tecnologia * Baixa Tecnologia

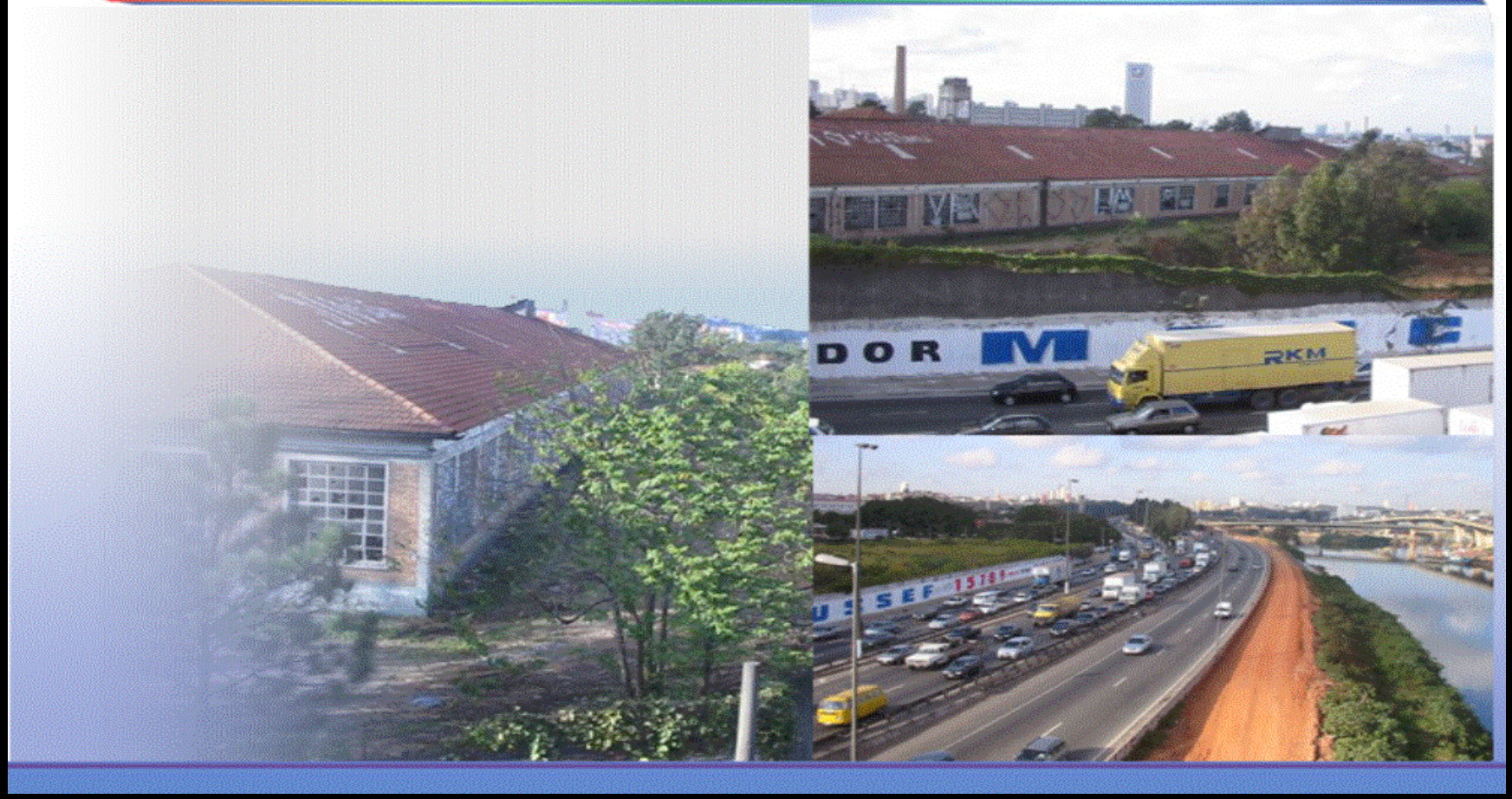
Pico do Petróleo / Água

EU * Nós - **Neus**

Ecovila São Paulo

84 acres of a former industrial storage site strategically located along the express way (marginal de Pinheiros).

Ecovila São Paulo



81,000 sq feet of existing loft-type buildings (foot print)

Proposal

The Proposed “Ecovila” would be a sustainable community integrated into the city.

Ecovila Sao Paulo

- Reuse of the industrial brick structures converted into 110-200 residential units, 81,000 sq feet of educational space and 81,000 sq feet of commercial space.
- Large open space.
- Parking would be provided in a lot adjacent to the commercial area.

Ecovila infrastruture

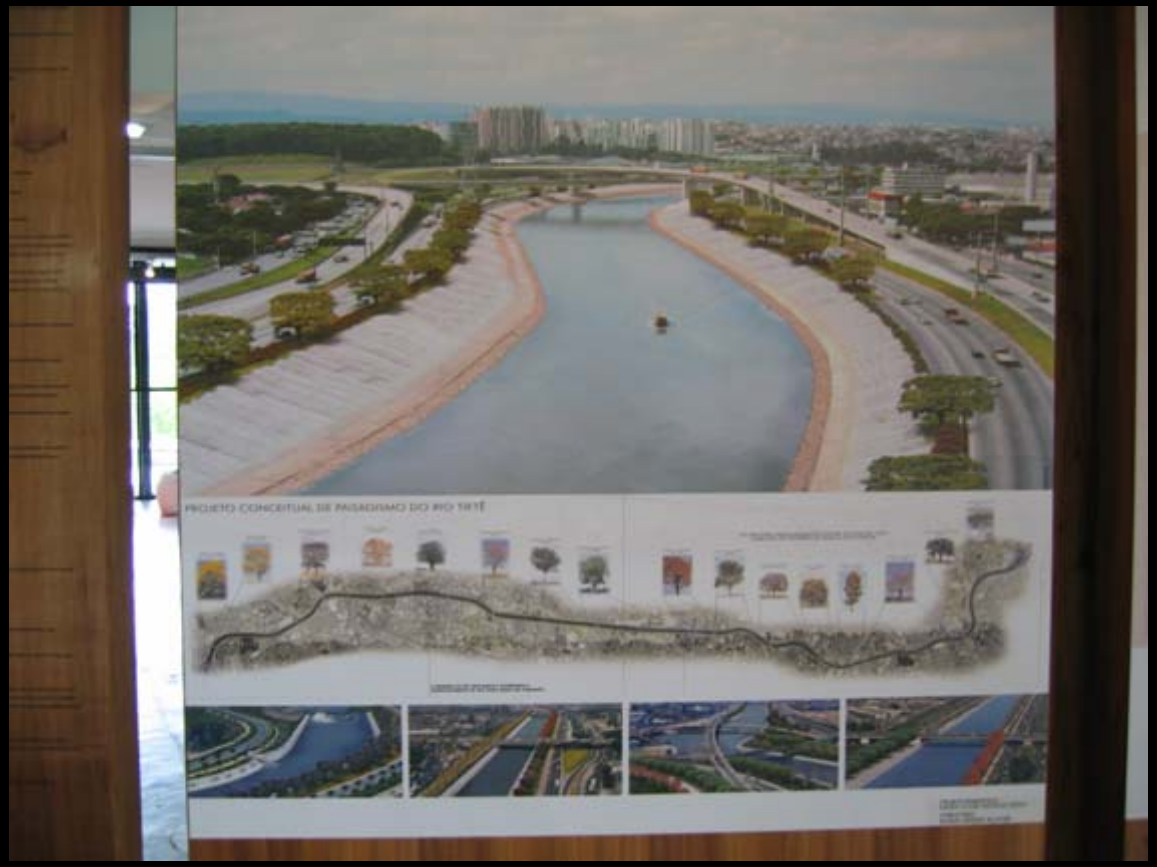
- Sewer and storm waters would be treated on site with natural systems.
- Solar system for hot water.
- Photovoltaic panels for gas cogeneration

Interior circulation includes paths which would be only for emergency vehicles, garbage collection, pedestrians and bicycles.

Bienal de Sao Paulo

International Architectural
and Urban Planning exhibit

Tiete River recovery funded by Japan



Vila Barulho D’agua. Sustainable housing in dense vegetated area near city of Parati (State of Rio de Janeiro)

By Ana Maria Vidal

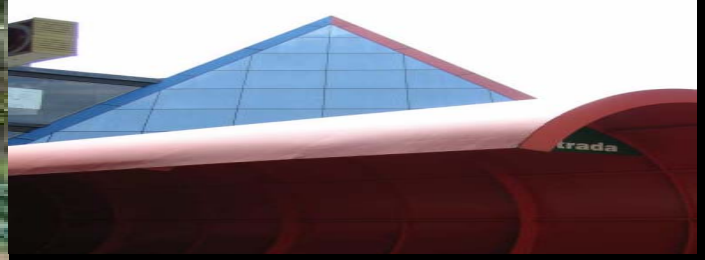
Laboratorio Fleury - Green Building Sao Paulo

Laboratorio Fleury - Rosa Kliass

LEGORRETA + LEGORRETA


PROPOSAL
CASA - CHINAMPA
PRODUCTIVE + HOUSING + PRODUCTI
crop + housing + fish-farming
Upstairs
vegetable garden, corn, flowers
Downstairs
fish-farming - vernacular species

Parque do Carandiru. A former prison site transformed into a public park. Project by Rosa Kliass Landscaping Architect.



Panamericana’s parking lot a creative permeable pavers for small areas adjacent to buildings and open space

Faculdade de Architectura e Urbanismo-FAU

Universidade de Sao Paulo-USP

Bairro Novo Project
IAB/SP Competition 2004

BAIRRO NOVO

Requalification of a deteriorated urban area

Summary

Bairro Novo Proposal was a design competition in the Barra Funda neigborhood, on the west side of Sao Paulo chosen by the City of Sao Paulo and organized by the Instituto de Arquitetos do Brasil/Sao Paulo.

Goals

- Find alternatives for the potential rehabilitation of an empty urban area and to provide environmental quality to an innercity neigborhood .
- Provide a transit-oriented development .
- Dedicate special attention to storm water management, urban circulation, density, pedestrian-oriented urban design and a clear hierarchy for open spaces, noise, light an air poution.
- Atract the public sector for investment.

Bairro Novo Existing Conditions

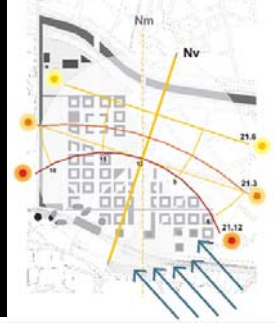
- Site area: 1 million m^2
- Chaotic use of the land.
- Large areas of vacant property.
- Discontinued street grid.
- Located in a dense area with good access to transit service and served by major circulation axes.
- Lack of public services.

Existing Conditions

Existing Conditions

Several existing buildings are practically empty, not living up to their expected success.

Macro-zoning of the intervention area

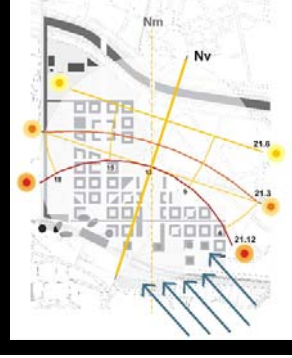


1 - PLAYCENTER
2 - MEMORIAL DA AMÉRICA LATINA
3 - SESC POMPÉIA
4 - SHOPPING BOURBON
5 - S.E. PALMEIRAS
6 - PRAÇA CON. FRAN. MATARAZZO JR.
7 - SHOP. WEST PLAZA
7 - PARQUE DA ÁGUA BRANCA
8 - SHOP. WEST PLAZA
9 - ESTAÇÃO ÁGUA BRANCA
10 - ESTAÇÃO BARRA FUNDA
11 - CASA DAS CALDEIRAS

PROPOSTA:

12 - PARQUE METROPOLITANO
13 - PARQUE AO LONGO DO RIO
VIAS PRINCIPAIS DE VEÍCULOS
TRAM

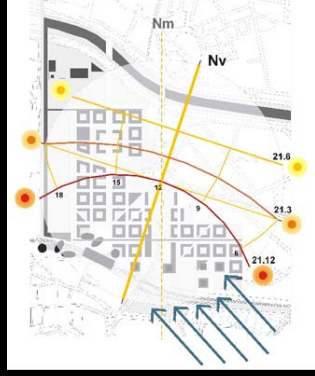
Proposed Land Use

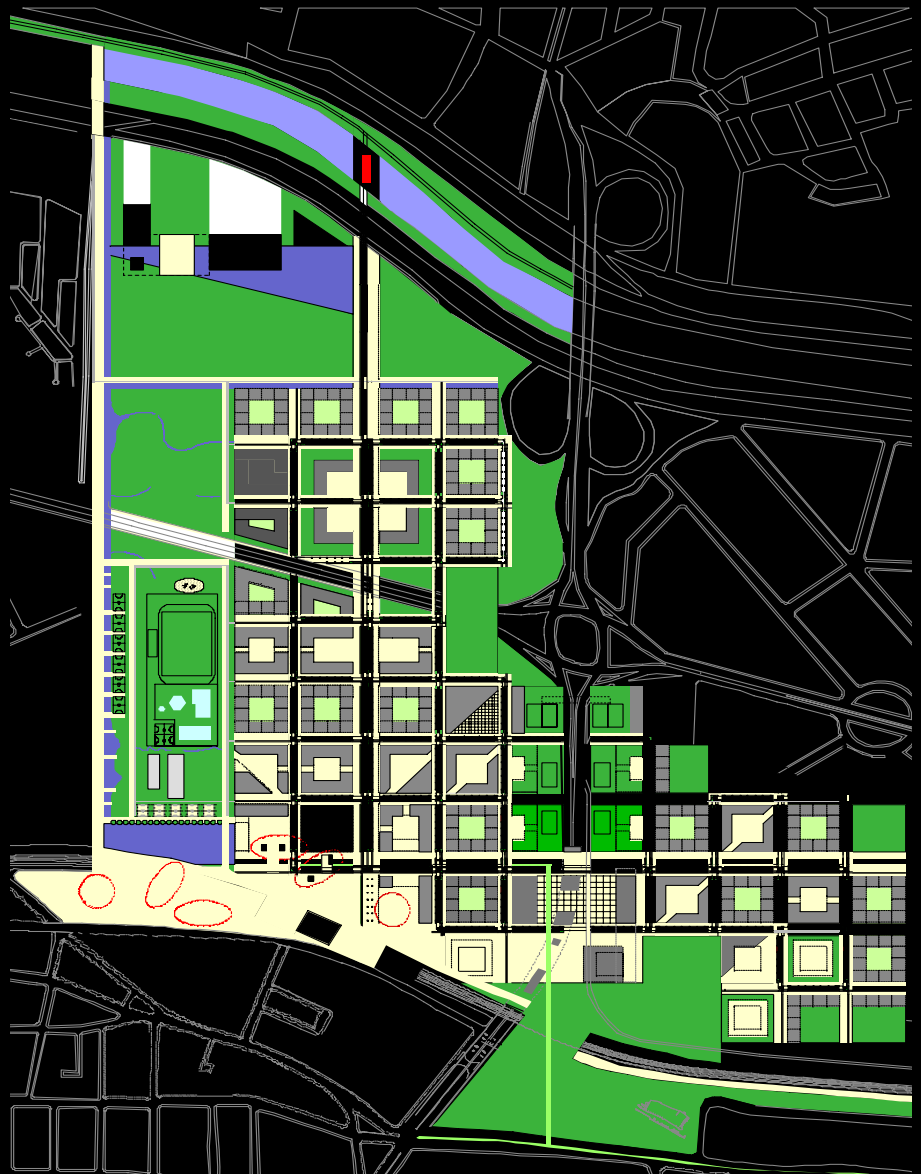


USO DO SOLO

1:10000

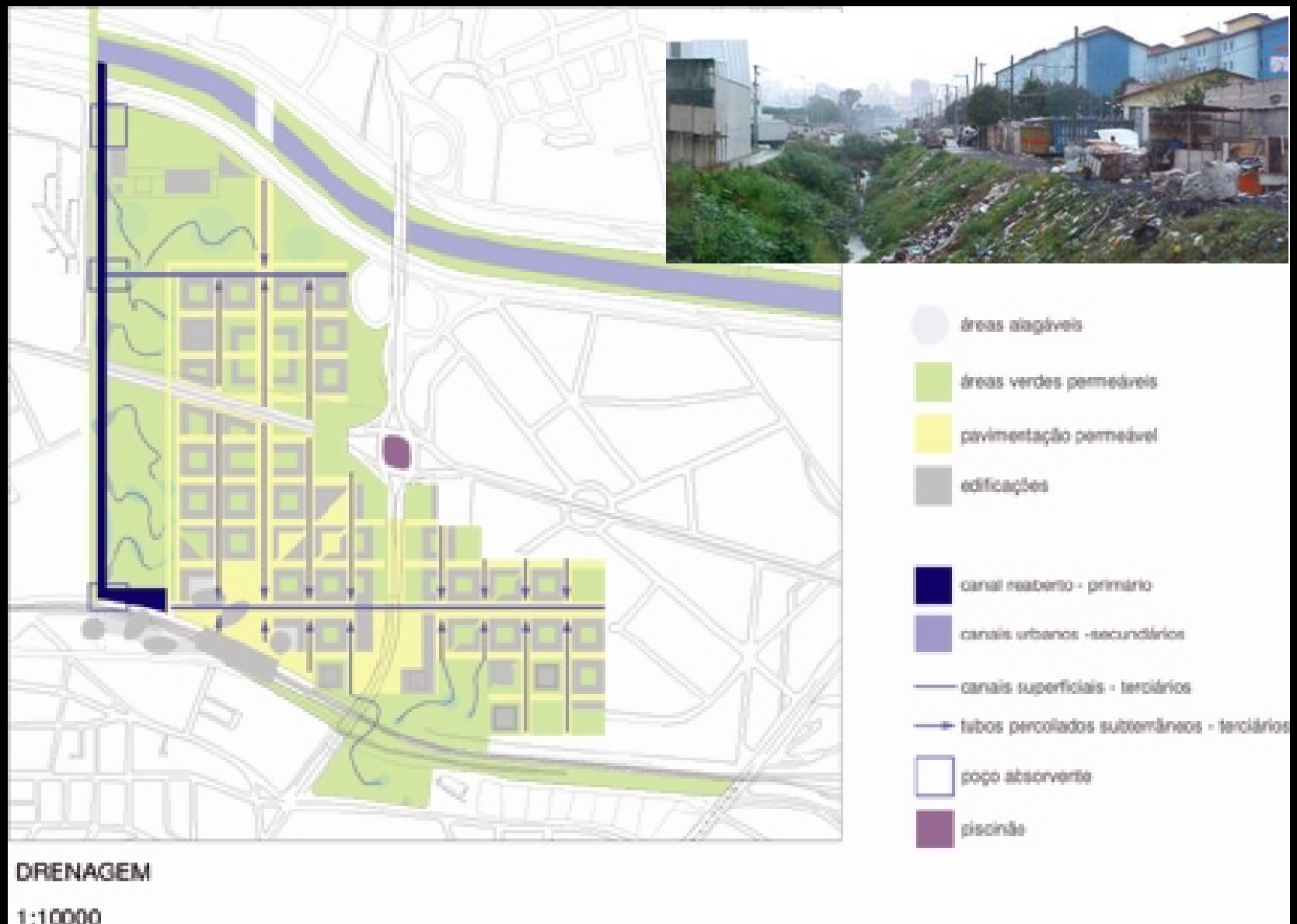
First Floor Plan





Circulation: pedestrians, transit, private vehicules

Macro-Stormwater Management

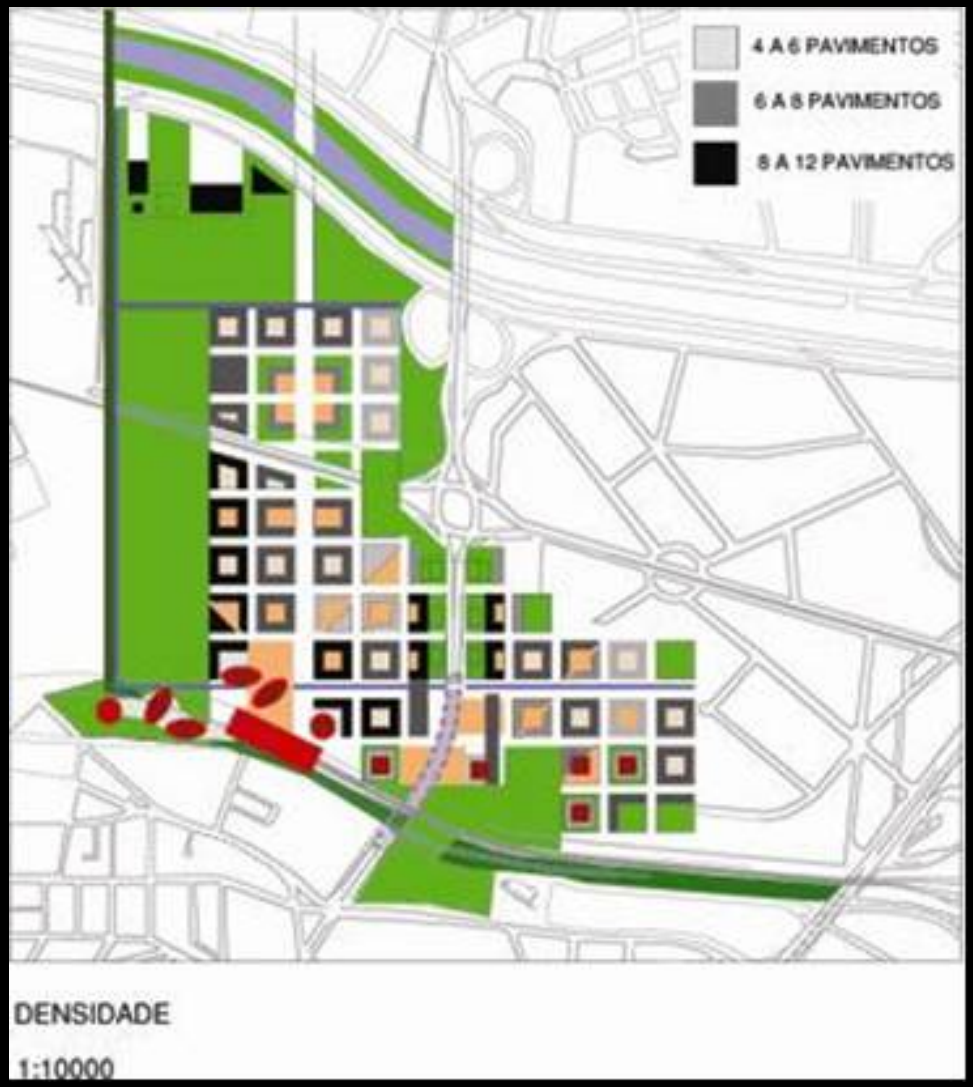


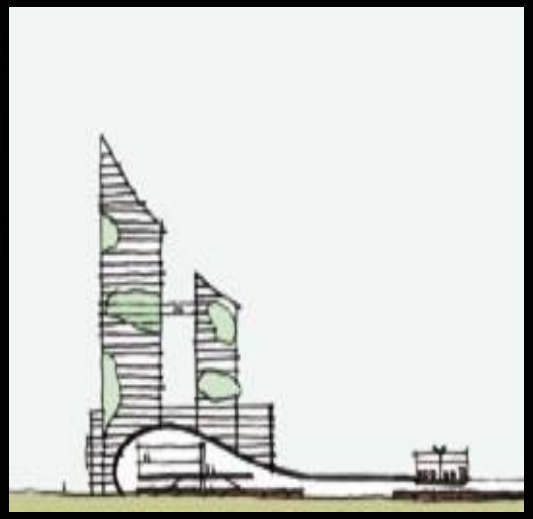
Existing conditions

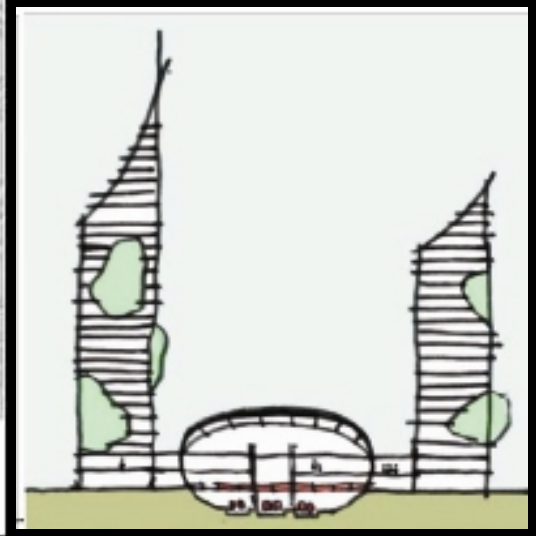
Poor and degradated pedestrian experience:

- No sidewalks, or sidewalks that are interrupted suddenly in certain points
- Presence of physical barriers forcing the pedestrian to make unnecessary routes
- Air polution
- Lack of trees and shade along pedestrian walkways
- Lack of public services and proper open spaces

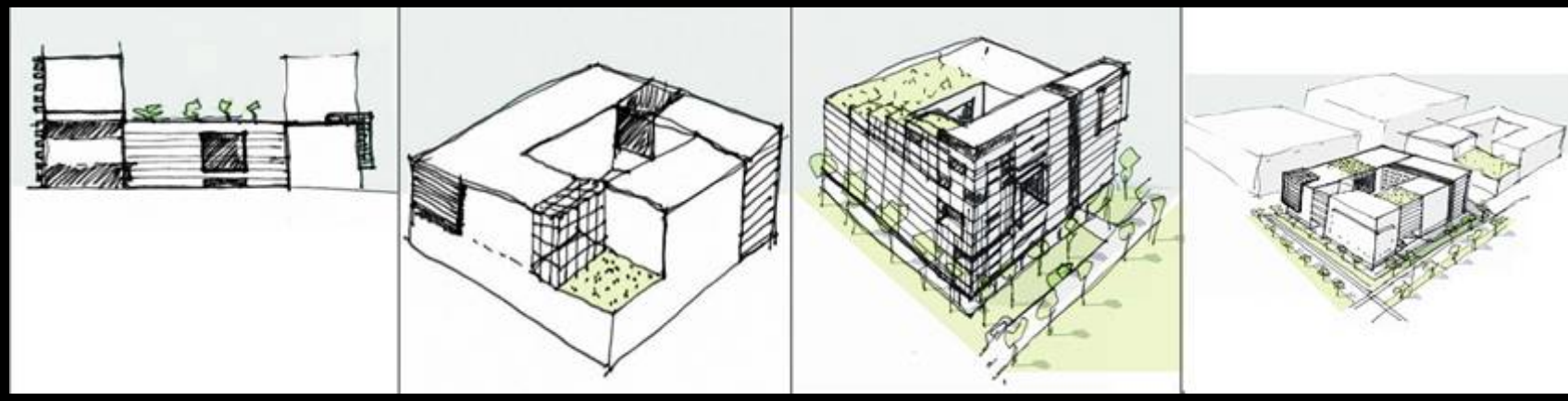
Allocation of tall buildings

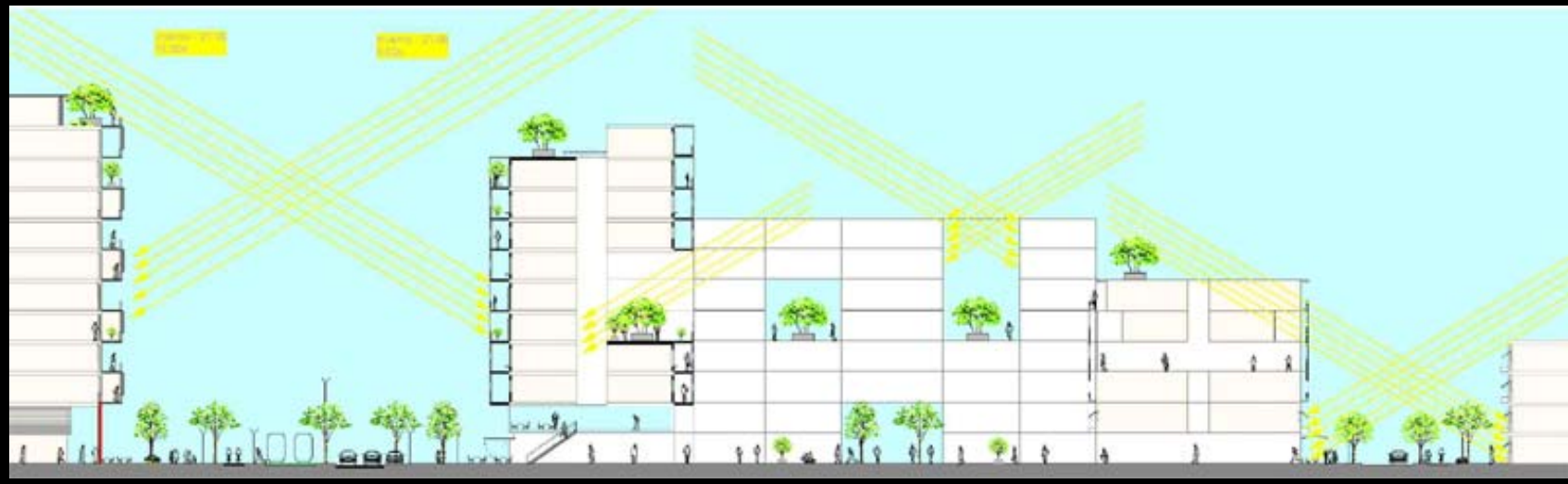




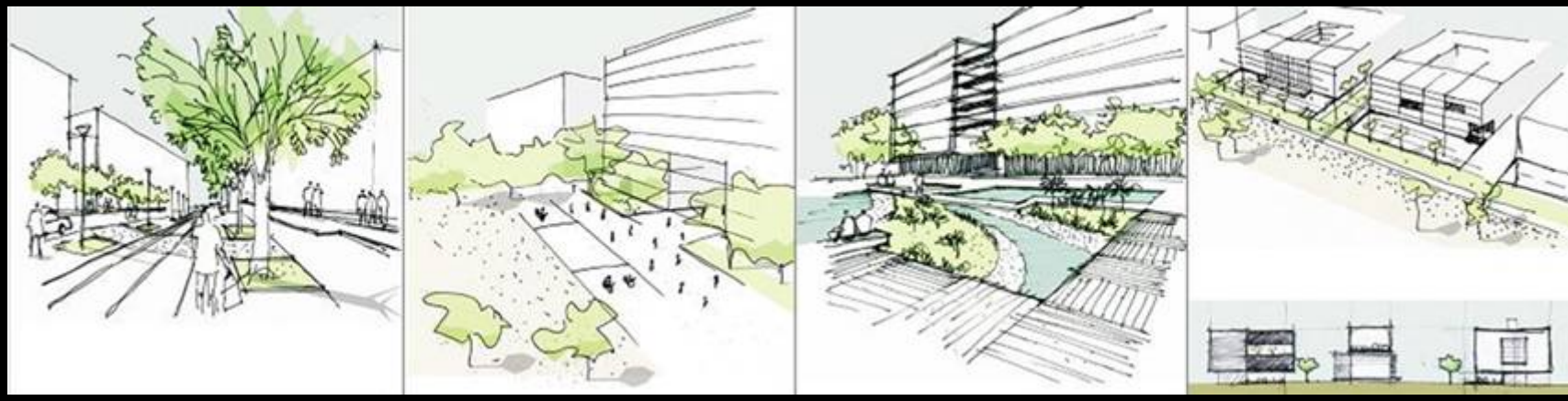


Residential and mixed-use blocks





Open space proposals



Final Proposal

LABAUT

Laboratory of Environment and Energy
Department of Technology

FAUUSP/AUT

Introduction

- LABAUT – Laboratory of Environment and Energy was created in 1999 and it is registered in CNPq – National Council of Scientific and Technological Development as a research laboratory since June 2002

- LABAUT runs activities and research in the following areas:
  - Indoors and outdoors comfort
  - Natural and artificial lighting
  - Acoustical comfort in buildings and in the urban space
  - Ergonomics applied to buildings, to the urban space, to furniture and equipments
  - Energy efficiency of buildings and of the urban space

SUSTAINABLE URBAN SPACES

International Collaboration UK - BRASIL

- International Collaboration between Brazil and UK in urban and building studies aiming to explore environmental and socio-economic possibilities for Sao Paulo
- The research project is focused on the rehabilitation of urban degraded areas in Sao Paulo downtown
- First year financial support from British Academy

Institutions involved:

- The Martin Centre for Architectural and Urban Studies, Cambridge University, Prof. Koen Steemers
- School of Architecture and Visual Arts, University of East London, Prof. Susannah Hagan
- Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo Prof. Denise Duarte e Prof. Joana Gonçalves

Botucatu

Instituto Floravida-Botucatu

Floravida

www.centroflora.com.br

Floravida

Residual water is treated and used for irrigation

Residual solids reused for construction

Botucatu

Botucatu sustainable housing

Botucatu sustainable housing

Sustainable home constructed with bridge prefabricated modules and recycled brick.

Botucatu Sustainable Housing

House made of ant hill mud walls

Botucatu Bamboo Farm

Botucatu Bamboo Farm

Botucatu Bamboo Farm

Botucatu’s House made of tires

189 sq ft house made of tires and bamboo totally under the earth with lots of light from one elevation and a sky light.

Botucatu house made of tires

Exterior view and skylight detail

Next
Don’t Miss

Jorge Wilheim

Creator of the 2002-2012 Sustainable Master Plan for Sao Paulo

At the Chicago Architecture Foundation on November 9th at 5:30 PM