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 Km² (Sao Paulo City 1500 Km²)
- 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
- Sophisticated Modern Medical Network
- Active cultural and Institutional center in 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.
Peter Webb é australiano, estudou permacultura com Bill Molison. Formado em horticultural science e ecologia, tem uma abordagem dinâmica. No Brasil tem ministrado cursos e desenvolvido projetos de agroflorestas, agricultura sustentável, consolidação de terra, paisagismo, cirurgia em árvores e reflorestamento. Aparênciamente uniu a permacultura à psicologia do budismo. Em parceria com Bel Cesar e desenvolve atividades de...
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
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)
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 infrastructure

- 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’água. Sustainable housing in dense vegetated area near city of Parati (State of Rio de Janeiro)

By Ana Maria Vidal
Laboratorio Fleury - Rosa Kliass
Panamericana’s parking lot a creative permeable pavers for small areas adjacent to buildings and open space
Faculdade de Arquitectura 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 neighborhood, 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 neighborhood.

• 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 pollution.

• Attract the public sector for investment.
Bairro Novo Existing Conditions

- Site area: 1 million m²
- 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

- Context specifics
  - The buildable area should not be the project protagonist
  - The proposals have to include sites for private use and alternative proposals of functions and use, setbacks, building separation, minimum and maximum heights, first floor use and relationship between empty and full spaces, etc.
  - The proposal was discussed in open public meetings with the purpose of reinforcing the public sector responsibility of accepting and implementing new ideas.
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 POMPEIA
4 - SHOPPING BOURBON
5 - S.E. PALMEIRAS
6 - PRAÇA CON. FRAN. MATARAZZO JR.
7 - SHOP. WEST PLAZA
8 - PARQUE DA ÁGUA BRANCA
9 - SHOP. WEST PLAZA
10 - ESTAÇÃO ÁGUA BRANCA
11 - CASA DAS CALDEIRAS
12 - PARQUE METROPOLITANO
13 - PARQUE AO LONGO DO RIO

PROPOSTA:

VÍAS PRINCIPAIS DE VEÍCULOS
TRAM
Proposed Land Use
First Floor Plan
Circulation: pedestrians, transit, private vehicles
Macro-Stormwater Management
Existing conditions

Poor and degraded 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 pollution
- 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

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REGIONAL SCIENTIFIC CENTER FOR MANAGING, TRIAL AND REHABILITATION OF NATIONAL WILD ANIMALS

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