TRANSIT ORIENTED DEVELOPMENT
Transit Oriented Development (TOD) is a popular planning concept that focuses on transit nodes for living, working, and shopping for all types of people and a variety of transportation modes.

Transit Oriented Development encourages:

- Mixed-use
- High Density
- Creation of transit nodes as "points of interest"
- Quality transit and pedestrian amenities
Transit Oriented Development

Arlington, Virginia
Transit Oriented Development

Portland, Oregon
Transit Oriented Development

Benefits

- Economic Vitality
- Jobs
- Affordable Living
- Opportunity for alternative modes

- Increase Ridership
- Increase Social Interactions
- Low public infrastructure costs
- Less dependence on Cars
Restrict certain land uses.

<table>
<thead>
<tr>
<th>ENCOURAGE</th>
<th>DISCOURAGE</th>
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<tbody>
<tr>
<td>Transit supportive land uses</td>
<td>Non-transit supportive land uses</td>
</tr>
<tr>
<td>Affordable housing</td>
<td>Automotive sales &amp; display</td>
</tr>
<tr>
<td>Small lot single-family offices</td>
<td>Automotive services &amp; repair</td>
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<tr>
<td>Health Clubs</td>
<td>Car washes</td>
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<tr>
<td>Personal services</td>
<td>Large format/warehouse retail</td>
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<tr>
<td>Retail shops</td>
<td>Large format food stores</td>
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<tr>
<td>Restaurants</td>
<td>Drive-in/drive-through services</td>
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<tr>
<td>Grocery Stores</td>
<td>Warehouse distribution</td>
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<tr>
<td>Coffee shops</td>
<td>Outdoor storage</td>
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<tr>
<td>Local pubs</td>
<td>Regional parks</td>
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<tr>
<td>Outdoor cafes</td>
<td>Funeral homes</td>
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<tr>
<td>Financial institutions</td>
<td>Large format faith facilities</td>
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<tr>
<td>Dry cleaners</td>
<td>Parking lots</td>
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<tr>
<td>Entertainment facilities</td>
<td>Low density single-family housing</td>
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<tr>
<td>Neighborhood oriented businesses</td>
<td>Low intensity industrial uses</td>
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<tr>
<td>Athletic/recreational facilities</td>
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</table>
Encourage mixing compatible land uses in a building block.

- High Density Residential
- Commercial/Residential/Office
- Retail Commercial
- Parking
Plan land uses near transit stations and corridors.
Density

- Density concentration and transition
- Planning for future densification
Mixed Land Use Development

Creating zoning plan and formulating zoning codes

Land uses not organized around transit

Land uses organized around transit

Zoning Ordinance and Zone Map
Creating Hotspots of Urban Activity

Transit Nodes

Implementation Tools

400-600 meters
Creating Nodes

Implementation Tools
Street Design Improvements

- Designed for everyone
- Allows More Affordable Transportation Options
- Can be tailored to fit needs
- Promotes Safety & Health

Complete Streets
Street Design Improvements

Prospect Park West, New York

Before

After
Accessibility (Universal Design)

- Curb cutouts
- Low floor busses
- Braille signage
- Wide entrances
- Ramps and elevators
**Transit Oriented Development**

**Intent:** To plan higher density around transit nodes, better accessibility and mobility, improved transit experience, increase in transit use, walking, and bicycling.

**Methods:** high-density mixed use development, cohesive urban design, preservation of historical character of the port area, integrated modes of transportation, accessibility for all transit users.

**By 2016**
- Select stops for development of TOD nodes
- Create a zoning codes and plan for TOD
- Create urban design guidelines
- Create a historical conservation program

**By 2030**
- Mixed use development at transit nodes
- Complete streets design implemented around transit nodes
- Full build-out of handicapped accessible amenities at transit stops
- Added technologies and services to meet demand for transit
Sustainability and Green Technology

- Green Buildings
- Water and Waste Policies
- Community Engagement
Green Buildings in Brazil

Environmental
- 30% in Energy Savings
- 50%-90% in Waste Reduction

Economy
- 35% reduction in CO₂ Emissions
- 30%-50% in Water Savings

Equity
Green Buildings in Brazil

**Potential:**

- **Reduced Operation Costs**
  - 20% water savings
  - 10% energy savings

- **Vacancy Rate Reductions**
  (2.8% < market avg. rate)

- **Return on Investment (ROI)**

- **Building Values Rise by up to 20% in Brazil**
  - Rental Premium Price USD 10.5/m
  - Sale Premium Price USD 1.900/m²

*Source: Centro de Tecnologia de Edifícios & CoStar Group*
Green Buildings in Brazil

- Health Benefits
- Local Economic Development
- Integration of Marginalized Communities
Green Buildings Policy

- Regulatory processes and codes can help to promote green development practices
- Performance vs. Prescriptive Codes
- Expedited Permitting Programs
- Performance Bonds

Policy

Legislation

Standards

Codes of best practice

Guidelines and Manuals

Training, services and support
Incentives can stimulate the adoption of green development practices

- Offset the “learning curve” in new markets with incentives
- Design incentives to motivate or change behavior
- Offer monetary or process oriented incentives based on what works best in the market
  - Monetary vs. Non-monetary incentives
Buildings and Landscape

Renewables:
- Sustainable building practices
- Water efficiency
- Solar power
South Waterfront, Portland, Oregon, USA
- Waterless urinals, water saving showerheads and toilets
- Rapidly renewable resources (<10 years)
- Drought resistant plants
- Heat resistant glass
- Solar trombe wall: saves 36 tons of CO2 annually
- Passive Cooling Design: sun shades can double as solar panels
Bioswales
- Prevents rain run-off
- Reduces unsanitary pooled water and concrete heat
- Encourages oxygen producing vegetation
Putting Environmentalism on the Urban Map

The Prototype and the Plans

The Solaire, completed in 2003, was built to meet environmental standards known as Leadership in Energy and Environmental Design, or LEED.

Remaining projects in Battery Park City are to meet or exceed the Solaire’s rating. An existing building has been retrofitted to be more environmentally friendly; others may follow.

Saving Water

The Solaire uses about half the water that a similarly sized building would by recycling it. Rainfall is also collected for reuse.

1. Rainfall is held in layers below plantings on the 17th- and 29th-floor gardens, which cool the roofs. It wicks up to the soil layer to keep plants watered.

2. In heavy rains, excess water is stored in a tank for roof irrigation in dry weather.

Saving Energy

During the hottest summer hours, the Solaire uses about 65 percent less electricity than a similar conventional building would. Overall, it uses 35 percent less energy for heating, cooling, and built-in lighting.

The Solaire uses natural gas in summer for cooling to reduce demand for electricity. Gas is cleaner than the fuels that are used at power plants during peak periods.

Reclaimed Water System

1. Water used by residents is sent to a treatment system in the basement.

2. The water is cleansed to the same standard as in a typical swimming pool.

3. The cleansed water is used in the building’s air-conditioning system and the toilets, and to irrigate a nearby park.

Sources: Battery Park City Authority; Paul Clarke Park Architects; Del Cobb Fried & Partners

Bill Marsh and John Papazisis/The New York Times
Average Annual Rainfall (inches)

- Portland: 36.0
- Rio de Janeiro: 46.2
- Vancouver: 47.2-62.5
- New York City: 49.9
Water and Waste

Technology → Accountability → Conservation

Water Efficiency
Water Proposal

Technology

• Advanced Sealing Technology (Tokyo)
• Electronically controlled flow meters (Tokyo)
• Graviational/Biological Controlled filtration (Vancouver)
• Solar powered RFI feedback (Tokyo)

Policy

• Commercial and Residential buildings are appropriately charged
• NGO’s and Water Conservancy groups promote and monitor water conservation (Boston)
• Annual Water reporting on Municipal, State and Federal Level
• Partnership of private and public sector
Waste Proposal

Technology

- Building specific self-contained recycling (organic and in-organic) (Toronto)
- Self-contained vacuum systems to reduce need for physical retrieval in public spaces (Barcelona)
- Big Belly Trash cans (solar powered to compact inorganic waste for transport) (Seattle, Atlanta, Dublin)
- Solar powered RFI technology monitors building usage and refuse collection (Sunnyvale)

Policy

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Partnerships to build sustainable communities and green jobs

Community Engagement Leads to Perpetuating and Progressive Public Policy
SOCIAL JUSTICE
Civic Engagement

Context

- PPTS and COTS guidelines
- UPP Social (City)
- Territories of Peace (State)

- 17 NGOs within area
- Neighborhood councils
Civic Engagement
Timeline

By 2016

• Consult with existing community networks to promote citizen participation in government decision-making
• Establish and adhere to guidelines for community meetings
• Outreach strategies for information dissemination
• Community walking teams informing residents of future meetings and projects

By 2030

• Build community centers to address population demand
• Establish UPP Social in more areas
• Strengthen local leadership through leadership and community development courses

Outcomes: Trust, accountability and transparency produce buy-in amongst community members.
Social Impact Report

- Consultation
- Announcement
- Measurement
- Implementation
- Feedback
- Integration
NGOs and Government plan in partnership
Use of local knowledge for projects
Resource mapping

Outcomes: Open dialogue will result in political transparency and bipartisanship,
Community priorities integrated in plan
Ensuring announcement of draft plan is thorough and wide reaching

Outcomes: Community has knowledge of projects, builds trust and transparency
Schedule public forums to provide residents with an opportunity to provide input
• Written comment period
• Set 30 day limit to provide comments

Outcome: Public participation
Apply public feedback to final draft of project
Create performance indicators for both residents and project managers

**Outcome:** Transparency
• Program staff implements project according to objectives
• Track fulfillment of performance indicators

**Outcome:** Builds trust in the community
Evaluation and Measurement

- Public, Private, NGO and residential feedback
  - Surveys & recommendations
- Deadlines to meet objectives
- Continuous feedback loop
- Working document available online

**Outcomes:** Effectively achieving community and project objectives
Housing

Context

- Relocation programs occurring concurrently
- New investment, new workers, new residents
By 2016

- Dedicate percentage of new residences built for low income residents
- Preference to displaced residents in both business and housing
- Keep history alive

Outcomes: Adequate housing and social sensitivity
Education Context

- 5 schools in area
  - 1 High School
- Public/non-profit services
**Education**

**By 2016**
- Facility building
- Olympic Curriculum
- Enrichment
  - Programs to build relationships and skills
  - Risk prevention
- Historical conservation

**By 2030**
- Quality control
- Continue enrichment and engagement programs; use evaluations to build on models

**Outcomes:** High quality schools, productive, high-skilled youth
Workforce Development

- Capacity Building Programs
  - Civil construction, restoration, dock work, telecommunication
Workforce Development

By 2016
• Increase capacity
• Design trainings according to social profile
• Determine percent of local workers recruited
• Job matching
• Outreach

By 2030
• Local small business formalization and tax breaks
• Outreach

Outcomes: Economic development and skill building.
Health Care

Context

• Walking Teams
  – NGOs providing basic health care and vaccinations

• Medical Facilities
  – 2 hospitals-1 federal, 1 SEUS
  – 1 mental health facility
  – 1 municipal center of health
  – 1 clinic
Health Care

By 2016
- Walking teams
  - Team restructure to improve service quality
  - Training local residents to do simple medical tasks
  - Communication and education (HIV, sexual health, etc.)

By 2030
- Medical Facilities
  - Increase medical resources
    - Personal, equipment, and outreach
  - Increase facilities to meet demand
    - Expected future increase in population
    - Placement issues

Outcomes: Improved quality of services, self-motivated employment, and community involvement
A new quality of city life.

Live, Work, Play.

It’s all here.
Why is Branding important?
City **planner and marketers** worked together. Invited people to see the area to **gain peoples’ trust**. Increased functionality of **The National Aquarium**, and Harbor place (downtown festival markets). Launched the place on a **Special Celebration Day** and promote surrounding areas.
How is the project perceived?

Integration is a challenge
How is the project perceived?

*Disjointed with no clear center*
How is the project perceived?

*It’s forward looking but needs to also embrace its history*
quality, new, life, live, just, neighborhood, close, work, study, fresh, connected, adventurous, modern, Marvelous, play, bold, innovative, business, opportunity, city, place, impact, Porto Maravilha, Rio de Janeiro
Beyond Multi Media: Streetscaping

- Inspiration for the idea: Ipanema

- Emphasize continuity with the rest of the city through a unique pavement pattern...

- Centered around a common theme: music, sports, other?
Current Residents & Entrepreneurs

What do they want?

- ownership
- involvement / participation
- improvement
- respect of culture & history
- not to be a human zoo

- new job opportunities
- inclusion / integration
- village life to remain intact
- access to credit
- recognition of innovation
Public Discourse, Participation and Perception

I want

on Broad
Current residents

Branding in Public Space
Current residents

Cultural Heritage
Current residents

Win Prizes and Gain the Pride of your Community

Video Competition
PORTO MARAVILHA MEANS BUSINESS
Encouraging small & local business development

- Preferential space reserved for local businesses… 10% of all new ground-floor retail space
- Based on the strongest business plans determined through competition
- Access to micro-loans, business skills training, and capacity building for promising local entrepreneurs
What do they want?

- safety
- amenities
- clean
- close to job
- connected to transit / city

- entertainment
- commonality with neighbors
- diversity…but still concerned with class
- middle-high income lifestyle
Future Residents

Live close to Work

1 month per year spent in your car

750 hours per year

3 hours per day
FACEBOOK IS IMPORTANT!
Encouraging dialogue and creating a buzz on social media platforms

Now

22% of Brazilians are on Facebook!

Possibility
Future Residents

Using a Novella (Soap Opera) to show that Porto Maravilha is a desirable place to live

"Piscinão de Ramos" became known nationally
Future Residents

Special Security for a Safe and Clean Living Space

• Neighborhood watch program
• Street cleaning
• Community friendly policing – "COMMUNITY AMBASSADORS"
Future Residents

• Rejuvenating the image of Porto Maravilha
• Respecting culture and Tradition, while welcoming modern lifestyle
Future Residents

Smart Phone Applications

Example: iSpain Iphone/Ipad Application
Real Estate Developers

What do they want?

- profit
- future demand for residents
- less bureaucracy
- cheap land
- financial incentives
- transparency

- to know that other projects will happen
- clear understanding of future of Porto Maravilha
- current inhabitants that are welcoming
Victoria Harbour

Commercial Developments

ANZ Building

The **ANZ building** at **833 Collins Street** is Australia’s largest single-tenant office building. ANZ is aiming for the highest current available environmental accreditations for its base building, and is also aiming high for the building fit-out.

It provides office accommodation, eateries, a gym and childcare facilities for up to 6,500 employees to support ANZ’s global business. The project overlooks **Docklands Park** and includes public open space and a promenade on the Yarra River.

Ericsson Building - 818 Bourke Street

**818 Bourke Street** is a nine level office building next to NAB’s headquarters. **Ericsson, AMP and Infosys’** Melbourne head offices have relocated here to take advantage of the burgeoning commercial precinct and waterfront location. Ground level retail includes a number of shops and amenities designed for the commercial and Waterfront Precinct.
Each precinct (núcleo) might have an identity, historic and contemporary identities
What are the unique value propositions of each area?
What are the ongoing and planned projects in each area?
Websites are essential
1. Amount of transportation linkages will make Porto Maravilha uniquely connected to the rest of Rio.
2. Many Cariocas work Downtown; the Port Area offers them a convenient place to live.
3. Real Estate prices in Porto Maravilha are significantly lower than in Barra da Tijuca.
Real Estate Developers

Revitalizes interest among investors on a regular basis
What do they want?

- fun
- unique experience
- safety
- restaurants
- tourist information centers
- hotels
- cleanliness
- convenience
- connected to the city
- shopping
A new arrival experience...

- Cruises: Ship-to-shore
- Boost economy
- Shopping
- Entertainment
- Food

We have arrived in Rio @ the Marvelous Port!
Visitors & Cruise Industry

Ship-to-Shore
O Porto Novo!