Building the Sustainable Transit Community

2007 RAIL-VOLUTION
Miami, Florida
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IBI Group
Building the Sustainable Transit Community

• How Public Transportation can be used to introduce sustainability to a community
• Sustainability in the Arizona Desert
• Tempe Transportation Center
Tempe Transportation Center

• Design Team Consultants
  – Otak Architects
  – Architekton
  – LSW Engineers
  – A Dye Design
  – Michael Baker Jr. Inc.
  – BDA Engineers
  – Natural Logic Inc.
  – Akali Lighting
  – Thinking Caps
  – Knipp Design
  – Lee Engineering
  – Construction Consultants
  – Natural Systems Inc.
  – Solarc Inc.
City of Tempe Consultants

- Construction Manager at Risk: Adolfson & Peterson Construction
- Commissioning Agent: Sebesta Blomberg
- City Construction Manager: underway
- Environmental Artist: Lorna Jordan
  Focus: Community Room and Coutyard
- Plaza Artist: Tad Savinar
  Focus: Engraved granite pavers and LRT platform sculptures
Key: Early and Integrated

So simple it’s easy to miss it:

• Everyone
  All stakeholders at the table, from the beginning (impact on “time to market”)

• Everything
  All aspects of the project, from design to materials specification, from energy systems to circulation planning (impact on synergies)

• Early
  High performance, regenerative approach as core driver and design context, not “it would be nice if we could…” that risks getting value engineered out later (impact on economics)

• Exceptional
  Commitment to deliver results that exceed environmental, economic and stakeholder expectations
Integrated Design Team

- Client
- Builder
- Design Lead

- Decision Maker
- Staff Reps.
- Facilities Mngmt.
- Structural Sub.
- Civil Sub.
- Mech Sub.
- Millwork
- Finish Subs.
- Electrical Sub.

- Commissioning Agent
- Structural Eng.
- Planner
- Habitat Spec.
- M.E.P. Eng.
- Energy Modeler
- Landscape Arch.
- Waste Specialist
- And so on...
The Basic Elements of Integrated Design

– Client involvement in the design decision process
  • 100% commitment to the process and goals
  • Indemnification

– Team Selection (Be there early enough to do so)
  • Select the right team: and project delivery method
  • To design ecosystems we need to deal with ego-systems. (Franklin)

– Goal Setting of environmental targets and education
  • with all participants

– Optimization of the design of systems

– Follow through in Construction Process
– Commissioning
– Maintenance and Monitoring

WHOLE-SYSTEM INTEGRATION
LEED Checklist

Sustainable Sites
Site Selection – Density
Alternative Transportation
Reduce Heat Island
Reduce Light Pollution
Stormwater Management
Landscape

Water Efficiency
Water Efficient Landscape

Energy & Atmosphere
Reduce Heat Gain
Efficient HVAC System
Utilize Renewable Energies
Perform Additional Commissioning
Shading Components

Materials & Resources
Construction Waste Management
Recycled Content
Local/Regional Materials
Rapidly Renewable Materials

Indoor Environmental Air Quality
Low Emitting Materials
Daylighting & Views

Innovative & Design Process
LEED Accredited Personnel
Site Analysis
Conceptual Plan/ Program

[Diagram showing various sections labeled with functions such as bike rental, transit store, public restrooms, retail, transportation offices, conference/community room, transit operations, restrooms, and leasable space.]
Plaza Design
The Transit Center building has been organized to balance efficiency with the best possible work environment. Due to the building's unique positioning and proportions, service functions occur within an expressive core that provides a natural buffer on the west elevation. A simple, open floor plan is adjacent to the core, which allows for protected daylight from the south, north, and east exposures. This relationship of service and served spaces works on all three levels, creating efficiencies in plumbing, mechanical, and occupant circulation.

All glazing on both the office/retail and community room will be shaded from direct sunlight. This provides an opportunity to create an architecture that expresses its relationship with our specific environment, which also functions well with LEED goals. It is this synergy that we strive for when designing projects. Every form, material, and relationship should have more than one purpose or function. Our goal is to create a Transportation Center that serves public transit patrons, is cost efficient while in harmony with our environment, and is a wonderful icon for the community.
Bikestation is working to change the way people travel.

Bikestation offers secure bicycle parking. Park your bike at Bikestation and you can be assured that your vehicle is safe, secure and covered.

Whether you ride your bike to public transportation, to work, or you simply need a safe place to store your bike for the day, Bikestation is available to serve you. It's simple, convenient and affordable.

Each Bikestation location provides unique services and amenities; but every Bikestation provides:

- A secure parking spot;
- Shared-use bicycle rentals;
- Access to public transportation;
- Convenient operating hours;
- Friendly and helpful staff;
- Information to plan your commute trips.

Bikestation Welcomes Andra White, new Executive Director!
Solar Responses
Sustainability Goals
- Overall reduction in energy consumption
- Maximize the use of daylighting
- Use a green roof as a thermal barrier to prevent heat gain
- Minimize construction and occupant waste
- Use fully or partially recycled building products
- Increase the overall quality of the indoor environment
- Reduce water consumed by building occupants
- Reuse waste water for irrigation and gray water systems
- Vegetated roof contributes to water reclamation
- Vegetated roof reduces urban heat island