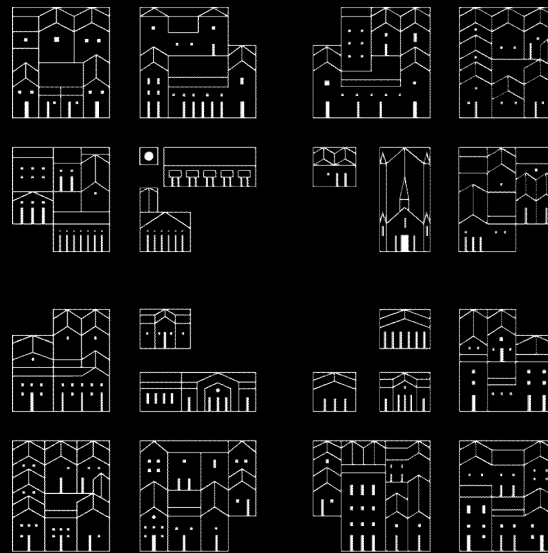


The Green Mile: Aligning Firm Ideology with Sustainability



TORTI GALLAS AND PARTNERS

Architects of Sustainable Community

Inspiration For A Sustainable Society

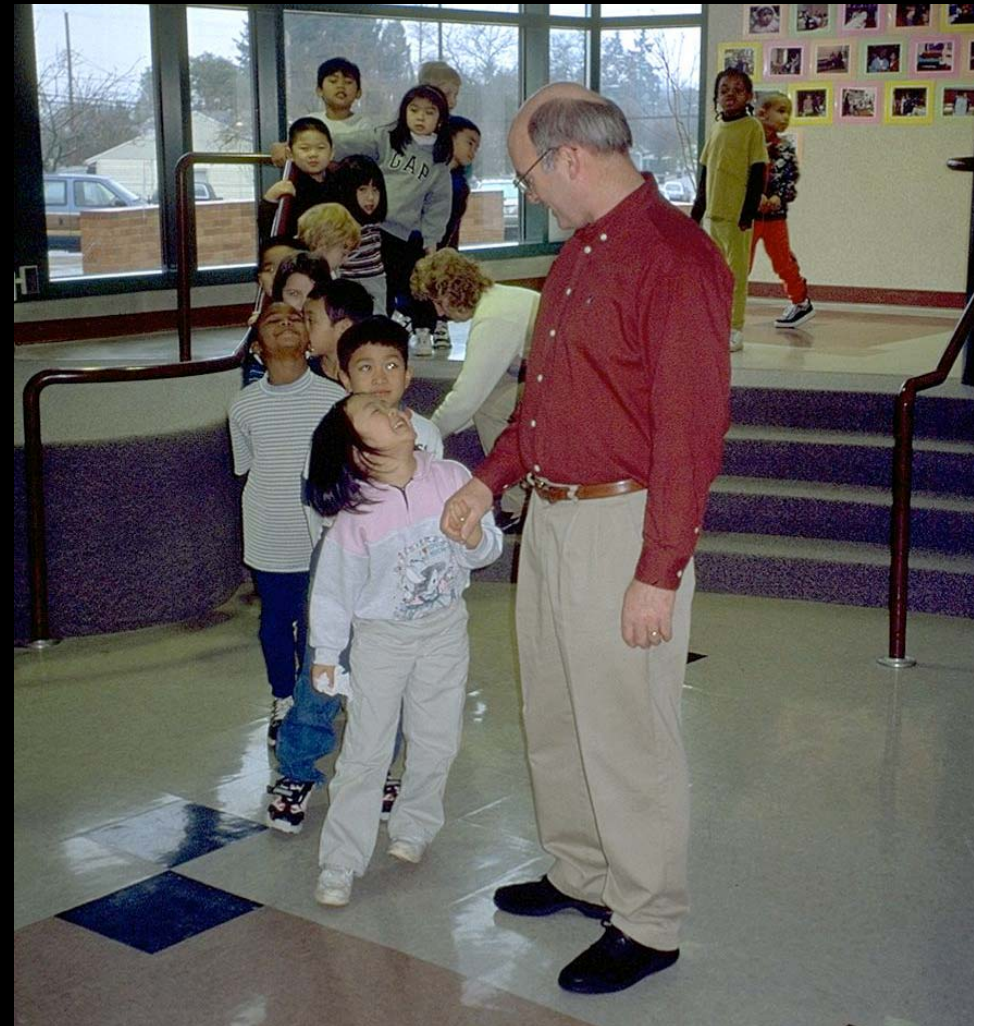


“The earth belongs to each...generation during its course, fully and in its own right. The second generation receives it clear of the debts and encumbrances of the first, the third of the second, and so on. For if the first could charge it with a debt, the Earth would belong to the dead, and not the living generation. Then, no generation can contract debts greater than may be paid during the course of its own existence.”

Thomas Jefferson
September 6, 1789

Inspiration For A Sustainable Society

- Interdependency Between Economic Prosperity, Environmental Quality and Social Equity For Current and Future Generations
- United States Citizens Consume 30 to 40 Times the Energy and Natural Resources of the “Average” Person in the Rest of the World
- “...Abrupt and Irreversible Damage” if We Don’t Take Immediate Action



A Sustainable Imperative

- Why Commit to Sustainability?
 - Supply Does Not Equal Demand
 - Population Growth
 - Expanded Use of Technology
 - Climate Change
 - Diminishing Resources



Consumption Needs to be Modified to
Maintain Our Quality of Life in the Future

Where Are The Leaders?

- The Design Community Must Lead
- We Must Accelerate the Greening of Our Buildings and Our Communities
 - Requires Change and Evolution
- A Non-Stop Journey
 - The Longer We Wait the Higher the Price Later

Our Path Along the Green Mile



Lead or Follow

New Urbanists and Classicists

- Already Inherently Sustainable



Sustainable Communities Require A Comprehensive Solution



Our Path Along the Green Mile

- How to Make Change Happen in a Large Firm



- Individual Efforts
- Interns Made It Happen



Our Path Along the Green Mile

MILE
2
0
0
0.1

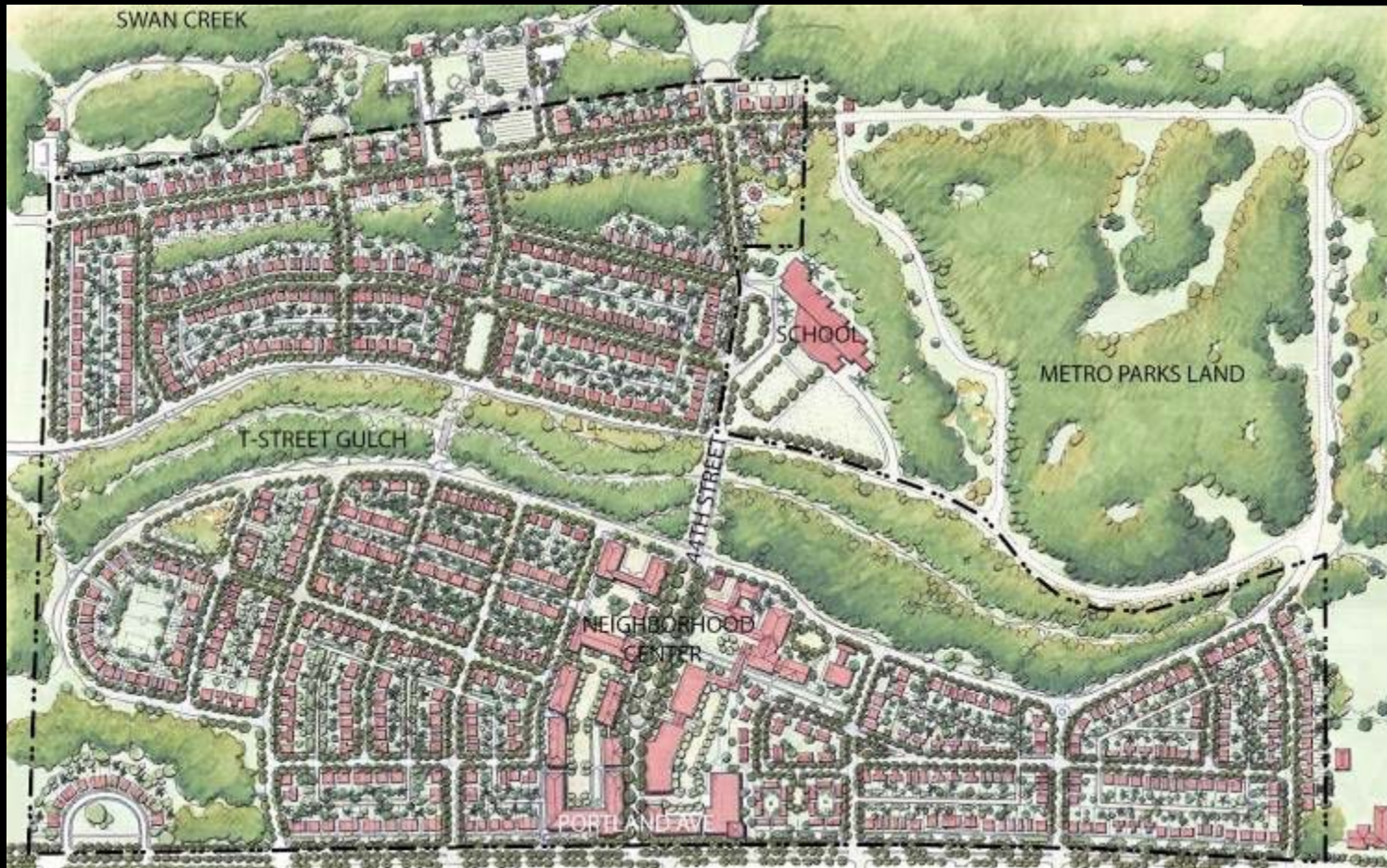
- Intern Driven Grass Roots



Salishan: Low Impact Master Plan

MILE
2001
0.2

MILE
2000
0.1



Vision of Salishan as a Sustainable Community

Coho Salmon-Endangered Species

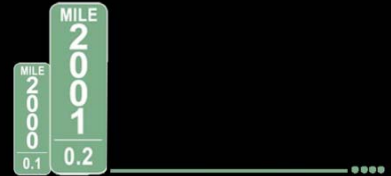
Centennial Clean Water Fund Grant

91%
Infiltration
of
Stormwater

 TORTI GALLAS AND PARTNERS
Architects of Sustainable Community

 The Green Mile:
Aligning Firm Ideology With Sustainability

Salishan: A Realized Vision



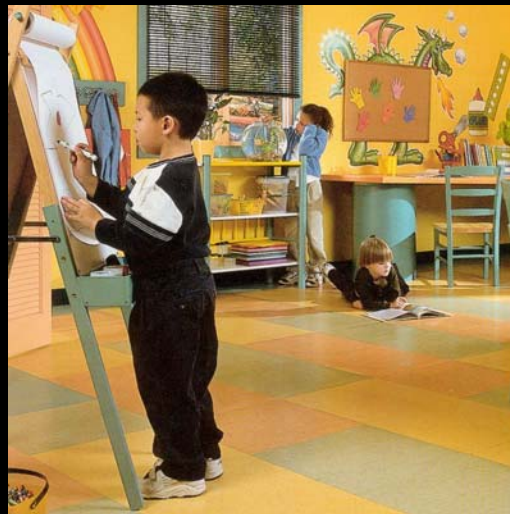
“Make Running Water Walk”



Our Early Attempts



- **Learn about Sustainability to Understand How to Integrate it with Our New Urbanist Principles**
 - 10 Materials We Can Use Now
 - Sustainability 101



First LEED AP's



Passive Solar Shading



- Fort Irwin : A Liveable Community in the Desert”

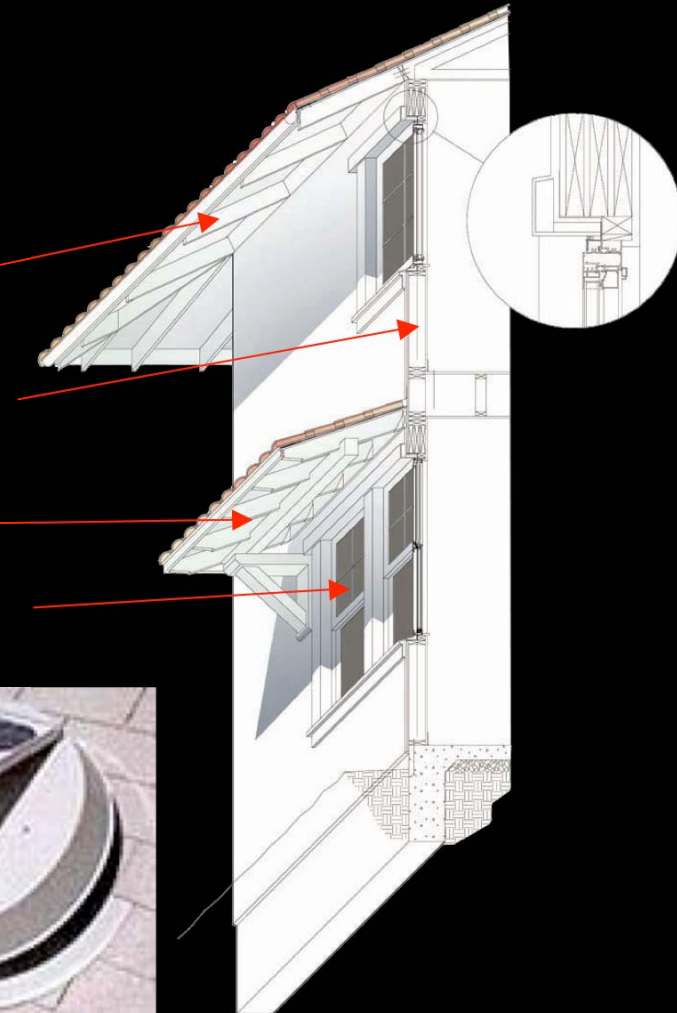


Passive Solar Shading



Solar Kit of Parts

- Deep Roof Overhangs (3')
- 2x6 Exterior Walls with Increased Insulation (R19/R38)
- Window Shading (Awnings)
- Small/Fewer Windows Facing East and West
- Covered Porches and Patios
- Solar Powered Attic Fans



Passive Solar Shading



Customization of Homes Relative to the Sun



North Facing Facade

- 18” Hip Roof
- Projecting Bay Window
- More/Larger Windows



South Facing Facade

- 36” Gable Roof
- Window Shading Devices
- Fewer/Shorter Windows



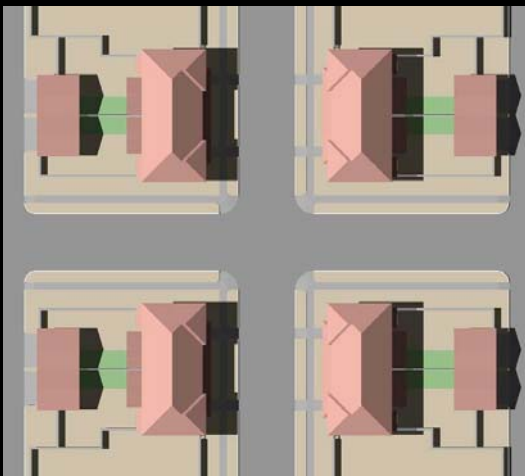
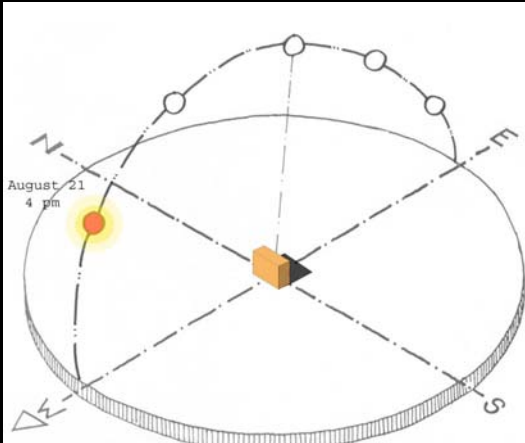
East/West Facing Facade

- 36” Hip Roof
- Projected Window Shutters
- Smaller Windows

Passive Solar Shading

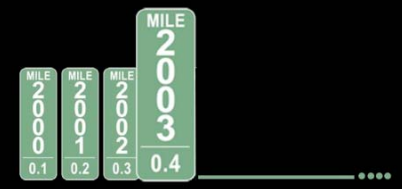


Customization of Homes Relative to the Sun



East/West Facing Homes

Passive Solar Shading



Large Overhangs



Shaded Patios

Passive Solar Shading



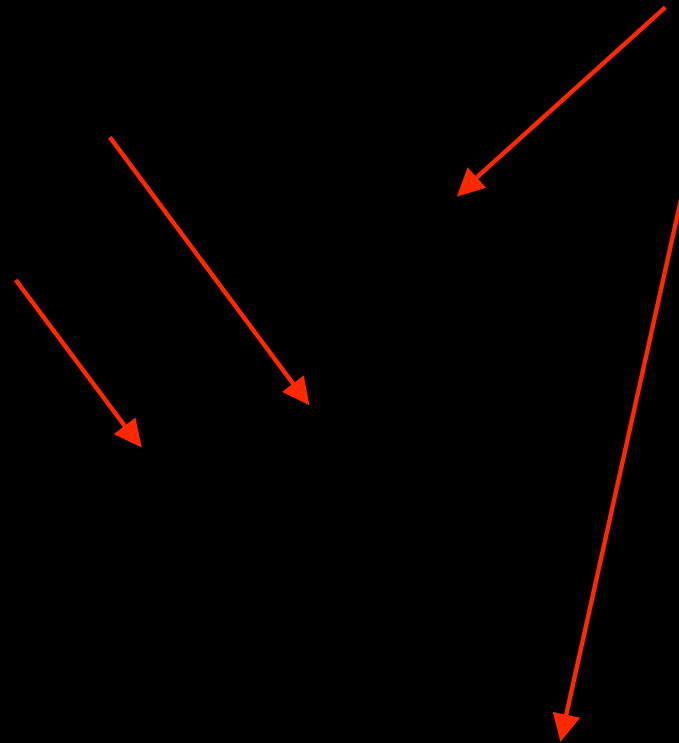
- Regulatory Mandate
 - California Energy Code: Title 24



50% Reduction in Energy and Water Usage

Proactive Design Can Create Passive Sustainability

Making Outdoors Livable With an Outdoor Cool Tower





Still Limited Firm Wide Commitment Up To This Point

Sustainable Accomplishments



- In-house Training
 - Taught By Interns
- 10 Principals LEED AP's



Discourse as a Method for Strategic Change

- Organic Evolution
- A Shared Sense of Ownership
- Better Chance for Change to be Embraced and Implemented



Discourse Format

- Friday Afternoons
- Breakouts
- Presentations
- Discussions
- Outside Speakers
- Games



TGP Los Angeles

In Offices... At Church... At Hotel... Via Video

Discourse as a Method for Strategic Change

- Used in the Mid-90's
 - Transformation from Architects of Suburbs to Architects of Community
 - Focus on Urban Design
 - Concurrent with 1st CNU
 - 50 People-6 Months



Lafayette Courts



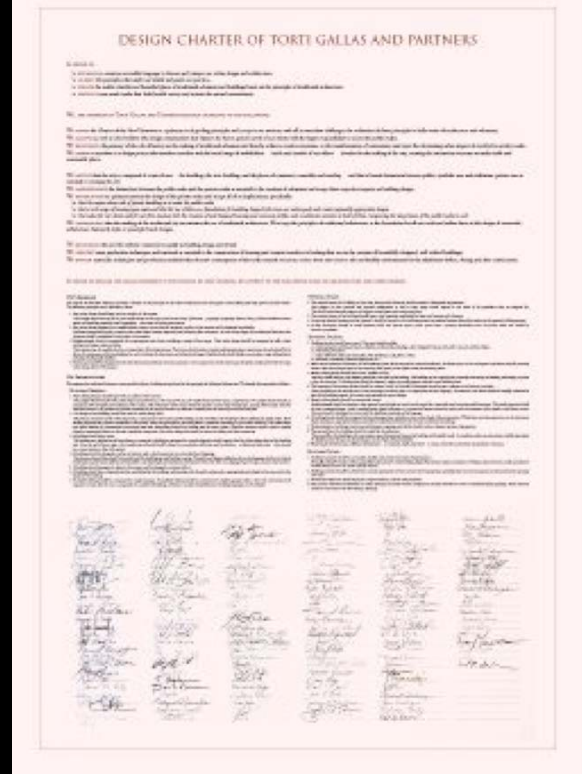
South Riding



King Farm

Discourse as a Method for Strategic Change

- New Millennium (1999-2000)
 - Integrated Urban Design with Architecture Design
 - 2 Years (100 People)
 - 1st Torti Gallas Design Charter



City West



The Garlands at Barrington



The Ellington

Discourse as a Method for Strategic Change

- Larger = Harder
- Not Just Because John and Tom Say So
- A Way to Teach/ Learn
- A Way to Gain Confidence
- A Way to Lead Clients



Sample Discourse Topics

- Site Priorities
 - Creating a Balance of Uses
 - Impact of Development and Design on the Site
- Site Design
 - Density as Related to Context
- Building Design (The Form and Tectonics of Sustainability)
 - Building Typology
 - Building Design Flexibility
 - Building Materials



Firm Strategic Plan



Goal III - **Realize** Sustainable Design as Integral to the Firm's Practice

- **Strategic Objective 3.1**

- Everyone in the Firm will have a basic **understanding of how Sustainable Design can be incorporated** into both our planning and architecture projects.

- **Strategic Objective 3.2**

- **Market Sustainable Design** opportunities as integral to New Urbanism and Smart Growth with potential clients.

- **Strategic Objective 3.3**

- After a client engages the Firm, **promote specific opportunities for Sustainable Design**, and when the client agrees, **incorporate into the design goals, approach and implementation.**

A Growing Commitment



- First Green Week
- Tom Gilmore gives John Torti Green Spec for Christmas

"Hi, It's Kermit the Frog here. I'm here to say I'm green for green week."

starting 8am Mon 6.27

green week schedule

Mon 6.27 :: Kick-Off | Ownership Mtg
 Tue 6.28 :: Green Products Roll-Out
 Wed 6.29 :: Lunchbox
 Tue 6.30 :: Green Projects Brown Bag
 Tue 7.01 :: Bike to Work | Design Discourse

brought to you by your
TGP Sustainability Committee



GREENSPEC Product Listings & Guideline Specifications
 DIRECTORY from BuildingGreen
 5TH EDITION

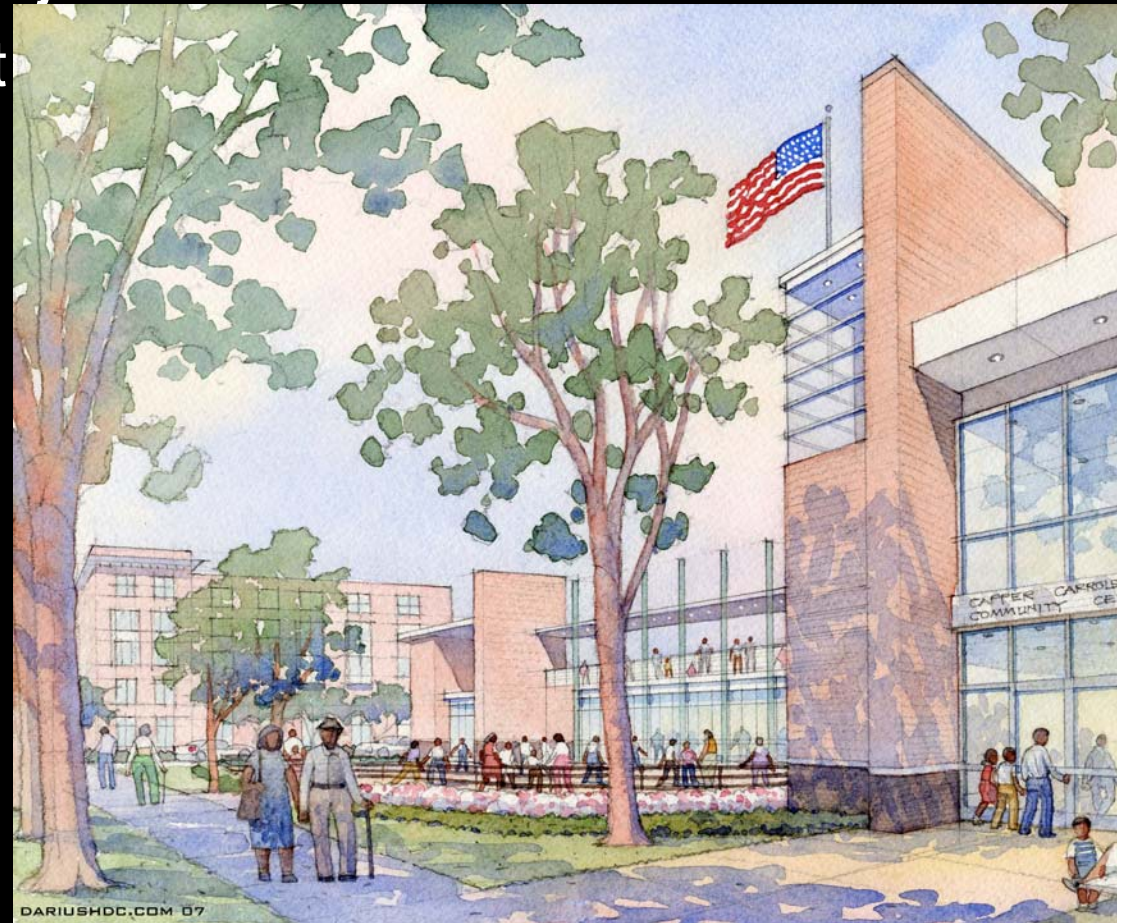


2005 Green Week Posters

Progress



- 1st LEED Certified Project
 - Split Costs with Client



Arthur Capper/ Carrollburg Community Center
Washington, DC

Sustainable Elements in Our Projects



 TORTI GALLAS AND PARTNERS
Architects of Sustainable Community

The Green Mile:
Aligning Firm Ideology With Sustainability

Sustainability Charrette Game



Objective:

- Maximize Sustainability within Budget Constraints by Applying **Most Trees** () for \$15 Budget

Rules:

- Team Selects Top 3 for Each Subject Category Within Budget

Sites:

- **City Vista** -High Density Mixed-Use Infill
- **Monterey** -Replacement Single Family Neighborhood
- **Flag House Courts** -Neighborhood Revitalization, Townhome Density
- **Taylor Yard** - Greyfield Infill Neighborhood, Mid-Density

Materials:

- **Sustainable Design Strategy Toolbox**

– **Project Budget: \$15**

 TORTI GALLAS AND PARTNERS
Architects of **Sustainable** Community



The Green Mile:
Aligning Firm Ideology With Sustainability

Sustainability Charrette Game

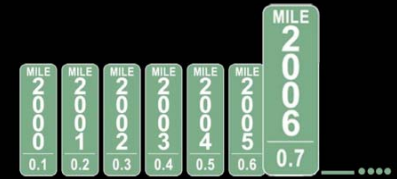


Community Involvement & Design-Construction Process

Client education materials (e.g., prepared by 3rd Party)		\$
Commission buildings		\$\$
Commit to sustainability goals at outset & put in contract & budget		0
Construction waste management plan		\$
Education materials/program (e.g., for maint. staff, residents, users)		\$
Environmental impact assessment		\$\$\$
Hire sustainability consultant		\$\$\$
Hold community meetings to establish/develop goals		
Include sustainability in market analysis		
Pre-qualify engineers & consultants		



Sustainability Charrette Game



Indoor Environmental Quality, Materials, and Finishes

CO2 monitoring

Construction IAQ Management

Local materials (e.g., concrete, gypsum board)

Low-VOC materials (e.g., paints, stains, adhesives, flooring, coatings)

Recycled-content materials (e.g., steel, tile, roofing)








Renewable materials (e.g., FSC-certified wood, bamboo, wheatboard)

Reuse materials (e.g., flooring, bricks)

Sustainable materials (e.g., Hardie siding, linoleum)

Zero-CFC/HCFC HVAC

Zero-Formaldehyde products (e.g., insulation, cabinetry)

	\$
	0
	\$
	\$
	\$
	\$
	\$\$



Walk the Talk



- Water Filters
- Torti Gallas Water Bottles
- Recycling Award
- LA Office Build-Out



Firm Survey



- *What is the Most Common Reason for Not Being Able to Realize Sustainability Firm-wide?*

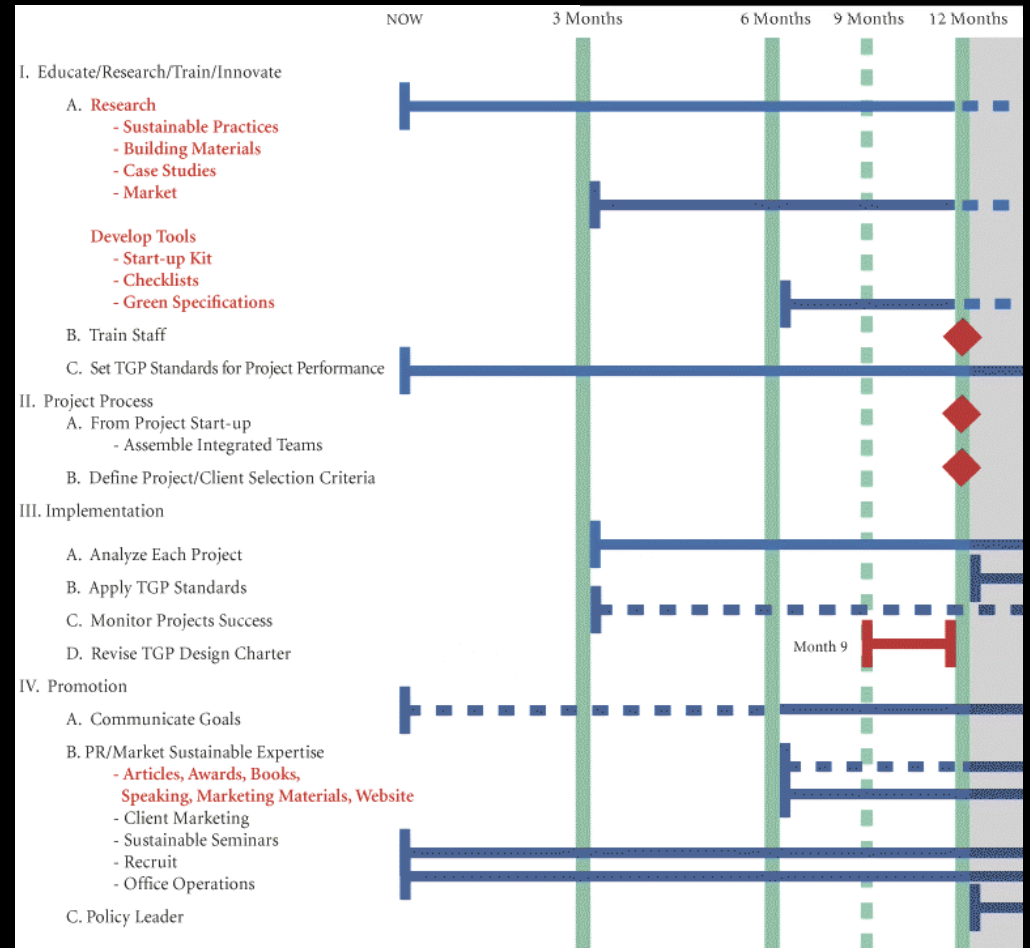
1. Most a limitation from Professional Staff/Process Knowledge/ Expertise
2. Should be LEED AP's Incorporate into Design Review Process
2. Lack of Experience
2. Applied Learning
3. Involve Consultants from Beginning/ Buy
3. Reluctance to Change/ Inertia
3. Expanding Design Processes/ Materials/ Precedents

Conclusion: Not Yet Confident!!

A 12-Month Discourse



- Friday Afternoons
- Led by Members of Firm at All Levels
- From Different Groups in the Firm



Timeline For Sustainability At Torti Gallas and Partners: 12 Month Discourse

Sustainability Action Plan



- I. Educate/ Research/ Train/ Innovate
- II. Redefine Design Process to Incorporate Sustainability
- III. Implementation
- IV. Promotion



Sustainability Action Plan



I. Educate/ Research/ Train/ Innovate

A. Research Topics to Understand Sustainable Products, Means and Methods

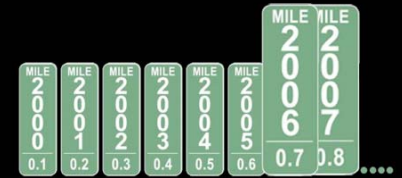
B. ~~Research Topics Presented~~ Develop Tools to Assist Implementation

- Sustainable Grading
- ~~Project Start-up Kit~~
Low Impact Development
- ~~Sustainability Checklist~~
Envelope Design
- ~~Database of Like-Minded Consultants~~
Modular Design
Daylighting
- ~~Set Minimum Office Standards~~
Water Saving Strategies
- ~~Green Specification as Firm Standard~~
VOCs

C. Teach LEED Accreditation Review Course

- Construction Waste Management
- Urban Family Housing

Sustainability Action Plan



II. Redefine Design Process to Incorporate Sustainability

A. Define Project Selection Criteria

- Apply TGP Goals for Project Selection Based on Client/ Site/ Building

B. Proactive from Project Inception

- Assemble Committed Design, Development and Construction Team
- Sustainable Strategy Workshop for Each Project
- Manage/ Lead Client Expectations
- Include Sustainability in All Design Reviews

Sustainability Action Plan



III. Implementation

A. Apply Torti Gallas Standards for

- Appropriate Density
- Transportation
- Building Orientation
- Climate
- Existing Natural Features and Topography
- Potential Water and Energy Use
- Daylighting, Views and Orientation
- Materials and Embodied Energy

B. Monitor Sustainability Realized Through Project Completion

SUSTAINABILITY PROCESS CHECKLIST
MASTER CHECKLIST

PROJECT NAME: _____
PROJECT NUMBER: _____
PROJECT STATUS:
 PROPOSAL
 CONCEPTUAL DESIGN
 WORKING DRAWINGS
 CONTRACT DOCUMENTS
 CONSTRUCTION

Analysis

Understand the Site Within its Region

- Seek out regional/local plans, studies: growth boundary, planned transit, etc.
- Study regional climate: temperature, precipitation, humidity, wind, weather
- Study history, culture; gather regional precedents for style, type, materials

Focus on the Site and its Climate

- Study location of site in transect, context (density, use, street network, etc.)
- Diagram top, solar and wind conditions; consider views
- Survey existing trees, soils, hydrology/stormwater
- Examine existing buildings, infrastructure for possible reuse

Understand Applicable Incentives/Requirements

- Research potential FAR bonus, tax credits, rebate programs, grants
- Contact local foundations, research groups, energy providers
- Consider LEED or other rating program

Site Design

Programming

- Provide minimum parking required; provide preferred parking for efficient vehicles
- Locate higher density, mixed-used development at transit nodes (TOD)
- Design for healthy mix of incomes, lifestyles, and family types, where appropriate
- Design for mix of uses; basic services within reach; pedestrian access

Site Selection

- Promote infill/ redevelopment; emphasize reuse of infrastructure, existing buildings
- Promote brown- and greyfield redevelopment.
- Preserve agricultural and park land or proffer remote greenfield land "trade"
- Avoid sensitive areas: wetlands, floodplains, habitats, natural features, agricultural land
- Incorporate use of transit into design; anticipate future transit

Site Layout

- Reduce heat island effect w/covered parking, shade, paving materials with min. 29 Solar Reflectance Index
- Size neighborhoods, blocks based on walkable distances
- Create interconnected networks: streets, sidewalks, bike lanes, trails and paths
- Minimize development footprint/grading to limit impact on trees, slopes, erosion, and habitats

Climate

- Create and analyze solar orientation studies of site/buildings to optimize solar/wind orientation
- Understand microclimate of site, neighborhoods, open spaces

Stormwater

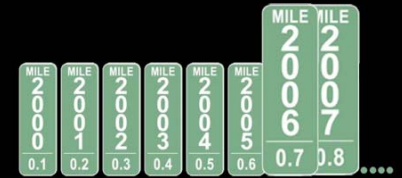
- Provide appropriate street sections, low impact stormwater strategies according to transect
- Consider treating stormwater on site: swales, green roof, wetlands, treatment center
- Maintain or restore natural drainage patterns and water features: streams, watersheds
- Utilize stormwater containment where appropriate (infiltration, evaporative cooling, etc.)
- Reuse precipitation: cisterns, lawn trays, irrigation, greywater systems
- Minimize impervious surfaces: alleys, parking, walks, conventional roof area; use pervious pavement, pavers

Natural Features/Landscaping

- Provide landscaping responsive to microclimate: shading hardscape, evergreens as wind buffers, deciduous trees as passive solar controls
- Provide native species landscaping coordinated with stormwater strategy; do not install permanent irrigation
- Provide high-efficiency equipment/climate-based controllers where irrigation is required
- Provide adequate planting strip along streets (minimum 5' wide)
- Preserve the night sky: design lighting for low contrast/glare, focus downward/cut-off fixtures

TORTI GALLAS AND PARTNERS
Tortí Gallas and Partners, Inc. | 1000 Spring Street, 4th Floor, Silver Spring, Maryland | 301.984.4000 | 1212 Hillside Street, Suite 202, Los Angeles, California | 310.461.0000 | 1

Sustainability Action Plan



IV. Promotion

A. A Recognized Leader in Sustainable Design

- Articles/ Speeches/ Sustainable Awards
- Marketing Materials/ Website
- Active Involvement in Organizations to Influence Policy
 - HUD HOPE VI
 - Greenbuild
 - AIA-COTE
 - Military Housing
 - LEED ND Pilot

B. Recruit Knowledgeable and Like-Minded Employees

C. Lead by Example

- 3rd Annual Green Week
- LA Office Buildout

Schedule

Mon	8-10 EST	Kick-Off & Welcome
10.1	12:00 EST	CLARENDON Project Presentation by Kara Strong SDC & Maurice Walters Brown Bag- 1.5h
Tue	12:00 EST	Guest Speaker: JASON HOLSTINE President of Amicus Green Building Center Brown Bag- 1.5h
	6:00 EST	Green Movie: DESIGN E2 Narrated by Brad Pitt Popcorn
Wed		Wear Green to Work Day
10.3	12:00 EST	Green Game: So You Think You Are Smarter Than An Intern? Brown Bag- 1.5h
Thu	12:00 EST	Guest Speaker: PAUL BERTRAM, CSI, CDT, LEED-AP "Sustainable Design Influences"
Fri		Alternative Transportation Day
10.5	1:00 PM	Fort Belvoir Community Center "Platinum Building 1 year ago vs. What we do today" Brown Bag- 1.5h
	4:00 PM	Happy Hour Intern Celebration LA -2 year Celebration

2007 Green Week Posters



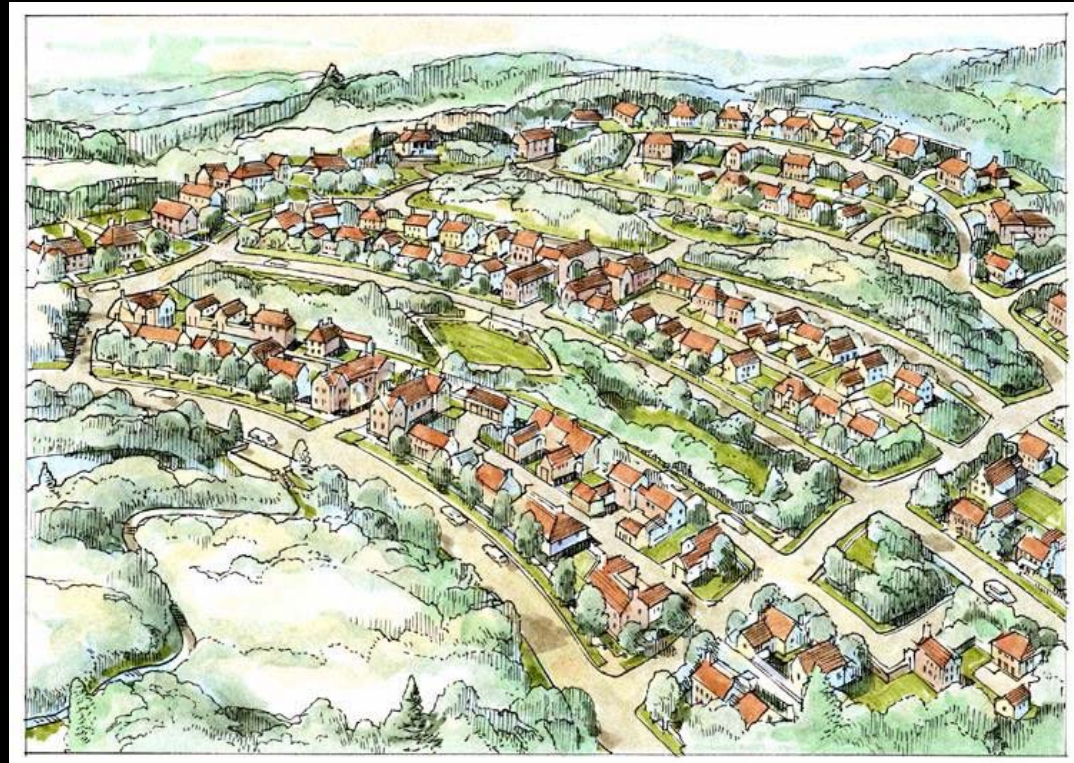
LA Buildout



Topics of Consensus



- Preserve and Restore Existing On-Site Resources: Trees, Slopes, and Infrastructure

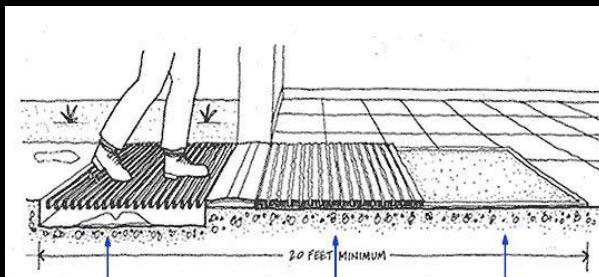
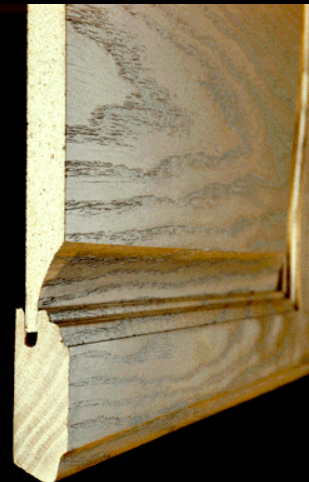
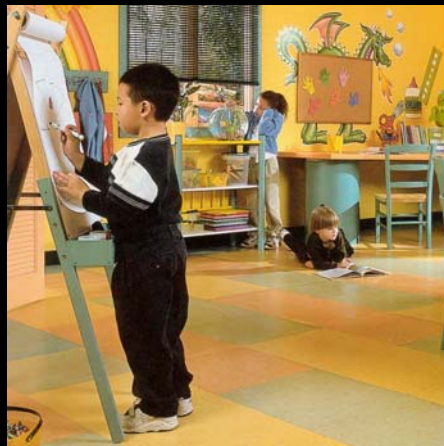


Biscuit Run

Topics of Consensus



- Promote Good Indoor Air Quality



Topics of Consensus



- Enable Flexibility/Modularity of Buildings for Future Use



PATH House

Topics of Consensus



- Create Diverse Communities: Mixed-Use, Mixed Income



Twinbrook



LeMoyne Gardens

Topics of Consensus



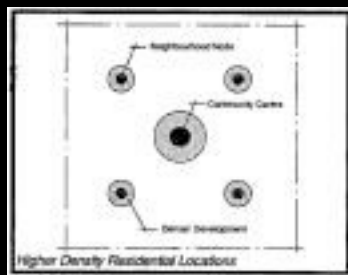
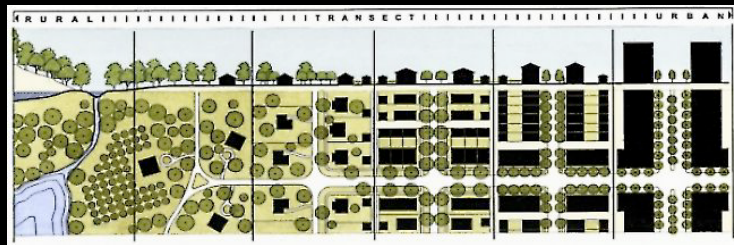
- Reduce Impact of Development on Hydrology



Salishan

Topics of Consensus

- Use Appropriate Densities and Compact Development

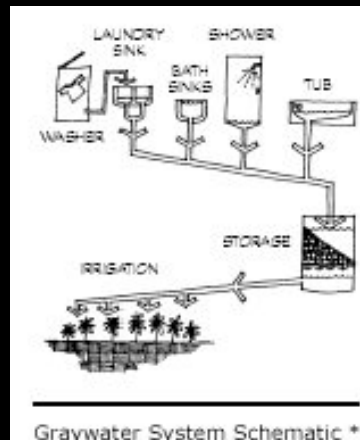


Monterey

Topics of Consensus



- Reduce Net Energy and Potable Water Usage



Clarendon Center

Topics of Consensus

- Promote Transit Oriented Development



Taylor Yards



The Ellington

Topics of Consensus



- Connect Users to the Outdoors



CityVista



NTC

The Need to Reconcile Sustainability with Our New Urbanist Beliefs



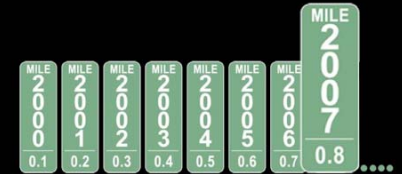
Topics for Debate

- **Project Design Options** Greenfield vs. infill development orientation for both kinds of buildings in plan & contextual design
Considerations proximity to transit
- **Material Strategy and Materials** Cost of materials vs. environmental impact (recycled, recyclable, toxicity (e.g. vinyl), etc.)



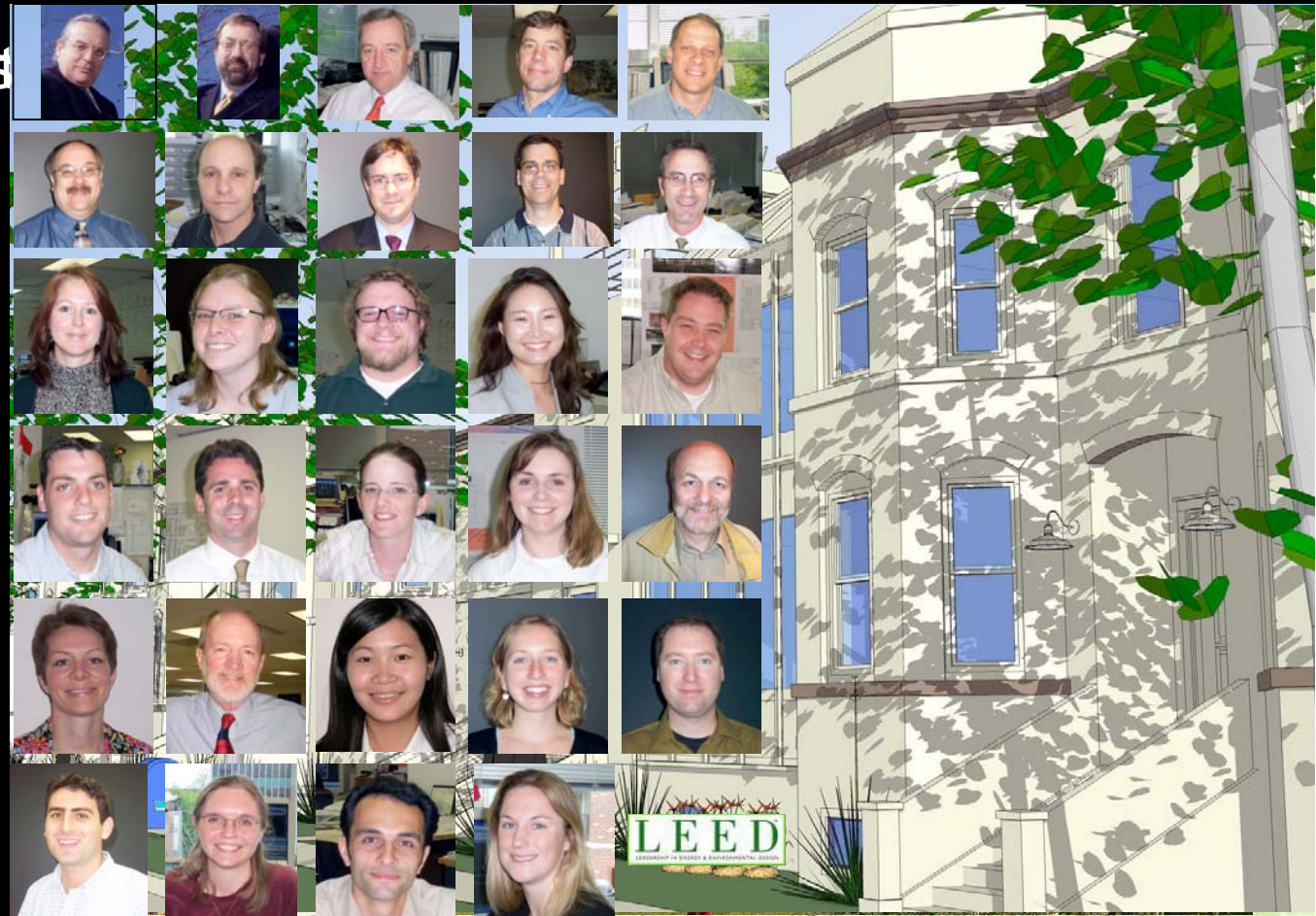
Greenfield Site vs. Urban Infill
Solar Orientation vs. Good Design

Progress So Far



- Further Along Than We Thought We'd Be

— LEED Platinum
 (BIFD) Buildings
 Certified
 Buildings



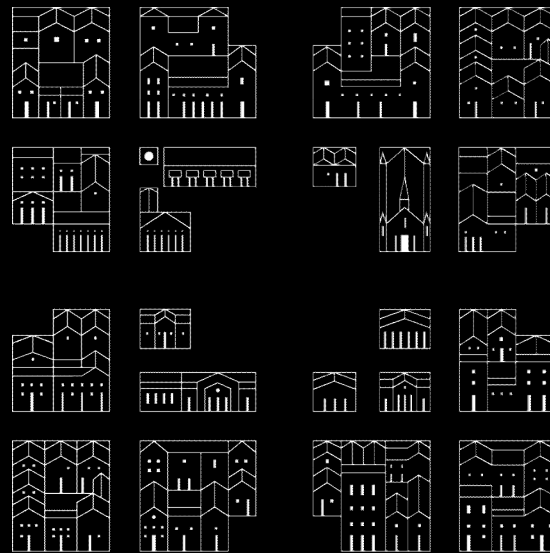
Bayview Center Neighborhood Center

A Powerful Journey

- No Longer Tentative
- Direct Clients Toward Sustainable Decisions Without Them Going Broke
- Always Seek a Larger Impact
- Long Journey: Many Miles to Go



The Green Mile: Aligning Firm Ideology with Sustainability



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