THE ORIGINAL GREEN: DESIGNING EFFICIENCY INTO OUR COMMUNITIES

ENERGY EFFICIENCY WORKING GROUP
Santa Fe
11MAR07

STEPHEN A. MOUZON, AIA CNU LEED
THE NEW URBAN GUILD
Miami Beach, Florida, USA
What’s the Problem?

1. the Absence of Plain-Spoken Sustainability
2. the Supply-Side Focus
3. the Carbon Focus
4. the Achilles Heel of Architecture
5. the Trouble with Consumption
6. the Problem of Growth
7. the Fate of “Ought-To”
8. the Dilemma of Global Warming
9. the Danger of Wishes
10. the Absence of Plain-Spoken Sustainability

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9. the Danger of Wishes

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8. the Dilemma of Global Warming

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7. the Fate of “Ought-To”
6. the Problem of Growth

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5. the TROUBLE with CONSUMPTION

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Planned Obsolescence

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Throwaway Buildings

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Throwaway Places

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4. the Achilles Heel of Architecture

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the Necessity of Uniqueness
the enormous effort to figure it out

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3. the **Carbon Focus**

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2. the Supply-Side Focus

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1. the 2.5 Billion People
What Can We Do?

10. the Things that Work
9. the Diversified Extent
8. the Diversified Environment
7. the Diversified Means
6. the Expanded Uses
5. the Narrowed Resource Range
4. the Expanded Comfort Range
3. the Localized Operations
2. the Sharing of Wisdom
1. the Involvement of Everyone

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10. the Things that Work

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9. the **Diversified Extent**

[Image of a cityscape with a focus on greenery and buildings]

[Website URL: www.originalgreen.org]
The Transect is the operating system of the New Urbanism. The idea of the Transect originated in the 1900's as an ecological tool used to describe a series of natural habitats, but transects have existed in nature since the dawn of time.
the Transect

★ **T1:** Natural (the wilderness)

★ **T2:** Rural (fields & meadows)

★ **T3:** Suburban (the outskirts)

★ **T4:** General Urban (neighborhoods)

★ **T5:** Urban Center (main street)

★ **T6:** Urban Core (downtown)
7. the Diversified Means

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6. the Expanded Uses

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5. the Narrowed Resource Range

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4. the EXPANDED Comfort Range

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CONDITIONING
the
Buildings First

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CONDITIONING
the
Humans First

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LIVING in Season

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3. the **Localized Operations**

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Large-Scale Operations

Localized Operations

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Web of Daily Life

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2. the **Sharing of Wisdom**

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1. the Involvement of Everyone

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What Is A Living Tradition?

★ Inspiration
★ Resonance
★ Repetition
★ Adoption

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Workings of a Living Tradition

★ Easily Perceived
★ Easily Loved
★ Easily Performed
★ ... by the People, not just the Specialists

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THE OPEN CANON

★ Limitations > Necessity > Invention
★ Millions of Minds
★ Inventiveness of the Pre-Employed
★ Inventiveness of Practice
★ Inventiveness of Age & Experience

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GIZMO GREEN

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“This is how we build here”
That which can reproduce and live sustainably is green; that which is incapable of doing so is not green.

This is the standard of life.

Life is that process which creates all things green.
What Is the Original Green?

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PLACES

The Original Green
The Original Green
PLACES

The Original Green

BUILDINGS

NOURISHABLE
PLACES

ACCESSIBLE

NOURISHABLE

BUILDINGS

The Original Green
The Original Green

PLACES

NOURISHABLE

ACCESSIBLE

SERVICEABLE

BUILDINGS
The Original Green Places

Nourishable

Accessible

Serviceable

Securable

Buildings
The Original Green

PLACES

NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS

LOVABLE

BUILDINGS
The Original Green

NOURISHABLE  LOVABLE

ACCESSIBLE  DURABLE

SERVICEABLE  SECURABLE

PLACES  BUILDINGS
The Original Green

PLACES

BUILDINGS

NOURISHABLE

ACCESSIBLE

SERVICEABLE

SECURABLE

LOVABLE

DURABLE

FLEXIBLE
The Original Green

PLACES
NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS
LOVABLE
DURABLE
FLEXIBLE
FRUGAL
The Original Green

PLACES: Nourishable, Lovable, Accessible, Durable, Serviceable, Flexible, Securable, Frugal

BUILDINGS: PLACES
The Original Green

PLACES

NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS

LOVABLE
DURABLE
FLEXIBLE
FRUGAL
The Original Green

PLACES

NOURISHABLE  L O V A B L E
0.0  1.0

ACCESSIBLE  D U R A B L E
0.0  1.0

SERVICEABLE  F L E X I B L E
0.0  1.0

SECURABLE  F R U G A L

BUILDINGS

LOVABLE

DURABLE

FLEXIBLE

FRUGAL
The Original Green

NOURISHABLE  LOVABLE

ACCESSIBLE  DURABLE

SERVICEABLE  FLEXIBLE

SECURABLE  FRUGAL

PLACES

BUILDINGS
The Original Green

PLACES

NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS

LOVABLE
DURABLE
FLEXIBLE
FRUGAL
The Original Green Buildings

PLACES
- Nourishable
- Accessible
- Serviceable
- Securable

BUILDINGS
- Lovable
- Durable
- Flexible
- Serviceable
- Frugal
The Original Green

PLACES

NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS

LOVABLE
DURABLE
FLEXIBLE
FRUGAL
The Original Green

PLACES

NOURISHABLE
0.0

ACCESSIBLE
0.0

SERVICEABLE
0.0

SECURABLE
0.0

BUILDINGS

LOVABLE
1.0

DURABLE
1.0

FLEXIBLE
1.0

FRUGAL
1.0

0.0

0.0

1.0

1.0
The Original Green

PLACES

NOURISHABLE
ACCESSIBLE
SERVICEABLE
SECURABLE

BUILDINGS

LOVABLE
DURABLE
FLEXIBLE
FRUGAL

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The Original Green
The Original Green

PLACES

NOURISHABLE
0.0
X

ACCESSIBLE
0.0
X

SERVICEABLE
0.0
X

SECURABLE
0.0
X

BUILDINGS

LOVABLE
1.0
X

DURABLE
1.0
X

FLEXIBLE
1.0
X

SERVICEABLE
1.0
X

FRUGAL
1.0
X
NOURISHABLE PLACES
Tightly-Embedded

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Oppportunistic
Slope-Adaptable

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Multi-Layered

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Scales of Agriculture

★ Employing Farm
★ Family Farm
★ Allotment Garden
★ Edge Yard Garden
★ Courtyard Garden
★ Roof Garden
★ Arbor Garden
★ Wall Garden
★ Balcony Garden
★ Window Garden

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EMPLOYING FARM

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Edge Yard (Front Yard) Garden

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Courtyard Garden

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ARBOR GARDEN

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Balcony Garden

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Window Garden

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Accessible Places

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Walkability: Alleys

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Walkability: Frontages

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Serviceable Places

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Reducing Property Values of the Adjacent Homes

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Affordability: Cottages

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Affordability: Rear Lane Addresses

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Affordability: Mews

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Securable Places

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Lovable Buildings

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THREE SOURCES of LOVABILITY

★ Things that Reflect Us

★ Things that Delight Us

★ Things that Put Us in Harmony

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Things that Reflect Us

★ Reflecting the Human Form
★ Reflecting the Culture of our Groups
★ Reflecting the Culture of our Region
★ Reflecting the Culture of our Nation

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Horizontal Arrangement
Things that Delight Us

★ Sensual
★ Group
★ Memory
★ Intellectual
★ Sheltering
★ Challenging

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Sensual Delight

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Warmth
Cool Breeze
Sounds
SIGHTS
Group Delight

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SPORTS
Political Assembly
Social Assembly
SETTING the STAGE

★ Accidental Meetings
★ Geometry

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Front Porch Principles

Porch Floor Height

(Above sidewalk, measured at front edge of porch)

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Front Porch Principles

Fence, Hedge & Wall Reduction Factors
(Deduct from minimum required porch floor height)

Top (double dot) line is fence
Bottom (single-dot) line is hedge & wall

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Front Porch Principles

Porch Railing Adjustment Factors
(Adjust minimum required porch floor height)

Top (dotted) line is additional height required when no railing is used.
(This does not work close to the sidewalk because of building code requirement that railing be used for porches higher than 30” above grade at porch edge.)

Bottom (triple-dot) line is height reduction allowed for masonry or 75%+ solid wood rails.

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Memory Delight

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Intellectual Delight

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SHELTERING DELIGHT

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Embracing Spaces
CHALLENGING DELIGHT
Bracing Places
THINGS that Put Us in HARMONY

★ Mathematical
★ Simplicity
★ Authenticity
★ Natural Processes
★ Natural Laws
★ Natural Forms
★ Harmony with the Region

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Mathematical Harmony

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RATIONAL PROPORTIONS
Plan Proportions
The Third Dimension
Harmony with Natural Processes

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HARMONY with NATURAL LAWS

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THERMODYNAMICS
HARMONY of NATURAL FORMS
HARMONY with the Region

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Beaufort
Durable Buildings

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Flexible Buildings

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Proximity to Street

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Ceiling Height

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Simplicity of Massing
Simplicity of Circulation

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Pipes

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Frugal Buildings

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SUSTAINABILITY and the MELTDOWN

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Be Frugal First

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Then Bridge The Gap

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Putting Buildings Back to Work

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The Original Green

PLACES

NOURISHABLE
Organic Farming
NU:
Codes

ACCESSIBLE
Compact & Walkable
NU:
Diverse

SERVICEABLE
Diverse
NU:
Identity

SECURABLE

BUILDINGS

LOVABLE
Living Traditions

DURABLE
Living Traditions

FLEXIBLE
Living Traditions

FRUGAL
Gizmo Green
What Can I Do?

10. All the Other Stuff
9. Don’t Succumb to the No-Maintenance Myth
8. Choose It for Longer Than You’ll Use It
7. Smaller with Many Uses
6. Choose Community Instead of Gates
5. Operate Naturally
4. Raise a Victory Garden
3. Build Outdoor Rooms
2. Live Where You Can Walk to the Grocery
1. Make a Living Where You’re Living

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10. Do All the Stuff You Already Know
9. Give a Gift to the Street

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8. Choose It for Longer Than You’ll Use It

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7. Choose Smaller Stuff with Double Duty

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6. Live Where Friends Visit Unannounced

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5. Operate Naturally

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4. Raise a Victory Garden

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3. Build Garden Rooms

in Your Yard

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2. Live Where You Can Walk to the Grocery

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1. Make a Living Where You’re Living

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Lenses
★ Value
★ Meaning
★ Delight
★ Wellness
★ Connectedness

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Value

★ Usefulness
★ Time
★ Money

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Value Based on Usefulness

★ Working
★ Learning
★ Playing

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Value Based on Time

★ Time Savings
★ Incremental Activities

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Value Based on Money

★ Current

★ Future

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Efficiencies

★ Municipal
★ Neighborhood
★ Citizens
Municipal Utility Use

★ More Miles = More Street Lighting

★ More Acres = More Irrigation
Municipal Vehicles

★ Energy to Operate
★ More Miles = More Vehicles
★ More Miles = More Employees
INFRAS TrUCTURE

★ Municipal & Neighborhood Issues
★ Embodied Energy of Materials
★ Energy of Installation
★ Operational Waste (Leakage & Loss)
Open Space Maintenance

★ Municipal & Neighborhood Issues
★ Mowing
★ Spraying
★ Trash Removal
★ More Acres = More Equipment
★ More Acres = More Employees
PLACE-EFFICIENT FOOD

★ Municipal
★ Neighborhood
★ Citizens
Citizen Travel

★ Trip Capture (Pedestrian, Bike, & Car)

★ Transit Ready
Citizen Services

★ Time Savings of Working Nearby
★ Energy Savings of Working Nearby
★ Single-Crew Workplace Efficiency
★ Cooperative Purchasing
★ Cooperative Management
Securable Efficiency

★ Reduced Cost of Policing

★ Reduced Fire Protection Cost
Lovable Efficiency

★ Energy to Demolish
★ Embodied Energy of Materials
★ Energy to Construct
Durable Efficiency

★ Energy to Demolish
★ Embodied Energy of Materials
★ Energy to Construct
Flexible Efficiency

★ Energy to Demolish
★ Embodied Energy of Materials
★ Energy to Construct
Building Energy Use

★ Condition People
★ Condition Buildings Passively
★ Equipment for Extreme Days & Nights
Living Traditions through the Lens of Value based on Money

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The Toggle Switch

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Tear-Out Prevention Seminar

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BUILDERS’ WORKSHOPS
CLASSICAL - VERNACULAR 25-45

J - 1x4  H - 1x6 or 1x8  QR - 3/8" - 1¼"  CAP - 3/4" - 1½"
Custom Price

Standard Price

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Nourishable Places through the Lens of Value based on Money

- Operating at Great Distance = At Risk of Anything In Between
- Arrival of Peak Oil

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Food Security?

★ Exchange Rates
★ Political Issues
★ Agribusiness

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INDUSTRIAL ECONOMICS REQUIRE
BAD-NEIGHBOR AGRICULTURE

★ Chemical Fertilizer
★ Crop-Dusting
★ Fouled Runoff
★ CAFO

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Good-Neighbor Agriculture

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Man-Hour vs. Land Area Efficiency

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Efficiency of the Farmer on a Tractor?

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What’s Being Forgotten

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CALORIE INEFFICIENCY

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EXPORTING the Guilt

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Accessible Places through the Lens of Value based on Time

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Accessible Places through the Lens of Value based on Money

★ Economic Benefits of Better Health in Accessible Places

★ Fitness Alfresco in Accessible Places

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Automobile Poverty
An American thoroughfare formerly known as the freeway that, while it may cost billions of dollars to construct, nonetheless destroys more adjacent real estate value in cities in which it is built than it costs to build in the first place.
Norquist’s Law

★ Public infrastructure expenditure per square foot of developed space is inversely proportional to your ability to walk to lunch

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Subdivision
**Metrics**

- 90 acres
- 114 units
- No shops or offices

- 90 acres
- 814 units
- 99.27 SF/unit shops & offices
Civic Spaces & Buildings

★ NONE

★ 1 SQUARE
★ 4 POCKET PARKS/PLAYGROUNDS
★ 2.63 ACRES = 140 SF/UNIT
Major Thoroughfares

★ ARTERIAL: 13.3’/UNIT (creates no real estate value)
★ MAIN STREET: NONE

★ ARTERIAL: NONE
★ MAIN STREET: 2.13’/UNIT (creates high real estate value)
Minor Thoroughfares

★ Locals: 101.4’/unit = 3,650 SF of paving/unit @ typical sprawl width of 36’, but includes no parking

★ Streets: 28.03’/unit = 953 SF of paving/unit, and includes 2.02 guest spaces of parking on-street
Service Thoroughfares

★ Driveways: Average 108’/Unit
★ Paving area: 1,296 SF/Unit
★ Alleys: 4.45’/Unit
★ Rear lanes: 10.2’/Unit
★ Driveways: 9’/Unit
★ Paving area: 454 SF/Unit
Public Safety

★ PROTECT 46 UNITS PER MILE TRAVELED

★ FRONT ACCESS ONLY

★ PROTECT 175 UNITS PER MILE TRAVELED

★ ALLEYS & REAR LANES PROVIDE SECONDARY ACCESS
INFRASTRUCTURE

★ 114.7’ OF UTILITIES PER UNIT

★ 30.16’ OF UTILITIES PER UNIT
Traffic

- Full Load Miles
- Cars: 89.9% of Trips
- Full Load Trips
- 18 Less Miles/Day/House
- Cars: 78.4% of Trips
- 1.53 Fewer External Trips/Day
LAND PRESERVATION
Serviceable Places through the Lens of Value based on Time

★ Time Lost Getting Services in Sprawl

★ “Every time you do something different, you’ve gotta drive.”
SERVICEABLE PLACES through the LENS of VALUE based on MONEY

★ FALLACY of SUPER-SIZING

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SERVICEABILITY PRINCIPLES

★ Make A Living Where You’re Living
★ Single-Crew Workplaces
★ Telecommute
★ Start Your Business
★ Corporate Village

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Re-Skilling the Post-Industrial Nations
Serviceable Places through the Lens of Value based on Money

★ Value in Tough Times
★ When the Subdivisions Tip
★ Smaller is More Securable
★ Ceasing Services: Where?

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Lovable Buildings through the Lens of Value based on Usefulness

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Lovable Buildings through the Lens of Value based on Time

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Down the Unlovable Carbon Stair-Steps

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Current Methods

★ Resident Town Architect
★ Multiple Architect Review Committee
★ Remote Reviews
★ “Canned” Face-To-Face
★ Interactive Face-To-Face

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Lovable Buildings through the Lens of Value based on Money

★ Enduring Value of Lovability: Carrying Value Deep into an Uncertain Future
★ Past Your Children’s Rejection
★ Sacrifice for Love

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Durable Buildings through the Lens of Value based on Money

★ 1,000 Year Life Cycle Cost: 15% @ 50% Over

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Frugal Buildings through the Lens of Value based on Time

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Frugal Buildings through the Lens of Value based on Money

★ Architecture’s Original Scam: Glass Towers

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LEED Economics

★ Additive System
★ Pay for Diagnosis, Not Cure
★ Cannot Ensure Sustainability
Towards A Sustainable Architecture

Sustainability is a function of the building and of the community within which it is built.

The Community

* Should offer transportation choice (including walking.)
  * Should have ordinary daily needs available within walking distance.
  * Should have streets and public spaces which are convivial and secure.
  * Should have housing suitable for diverse age, income, and family structure.
  * Should have a suitable set of civic spaces.
  * Should have facilities for the processing of storm water and waste.
  * Should have common facilities to process and market agricultural produce.

The Building

Productive

* Dwellings should provide places for food production as appropriate to the transect zone.
* Dwellings should have adequate area dedicated to food processing and storage.
* Lots should provide places for tool storage, as appropriate to the transect zone.
* Buildings should catch and reuse rainwater for domestic use.
* Buildings should be prepared for the installation of photovoltaic panels and/or wind generators.

Contextual

* Buildings should provide frontages that engage the pedestrian passersby.
* Building function, configuration and disposition on the lot should support its transect zone.
* Building plans should be comfortable, functional and flexible.
* Buildings should incorporate the knowhow of their regional heritage.
* Sites should be designed integrally with the building, the landscaping and its appurtenances.
* Landscape material should be appropriate to the region.
* Buildings should be designed to minimize site grading

Buildable

* Building materials should be durable and cost effective.
* Building materials should be easily repaired, rather than requiring replacement.
* Building materials should be detailed and assembled in a proven manner.

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Footprint of the Garden

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Hearth Garden

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Kitchen Garden

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Meeting the Sky

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Breeze Chimney

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Tower of Wind and Water

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SIDEYARD SAIL

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Windows and Shutters

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Chickens and Compost

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Green Wall

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Curtain Columns

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Cool Dip in the Master Garden

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The Unburdening of America

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