



# Adaptive Use and Sustainable Design: Three Perspectives

*Ecobuild America*

December 11, 2008

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- Tom Liebel, Associate Principal
  - Marks Thomas Architects
- Stephen Hulse, Operations Manager
  - Struever Bros. Eccles & Rouse
- Fran Weld, Dir. Sustainability & Preservation
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## ***SUSTAINABILITY***

envisioning the enduring prosperity of all living things.

## ***SUSTAINABLE DESIGN***

asks how communities, buildings, and products can contribute to this vision.

*Or*

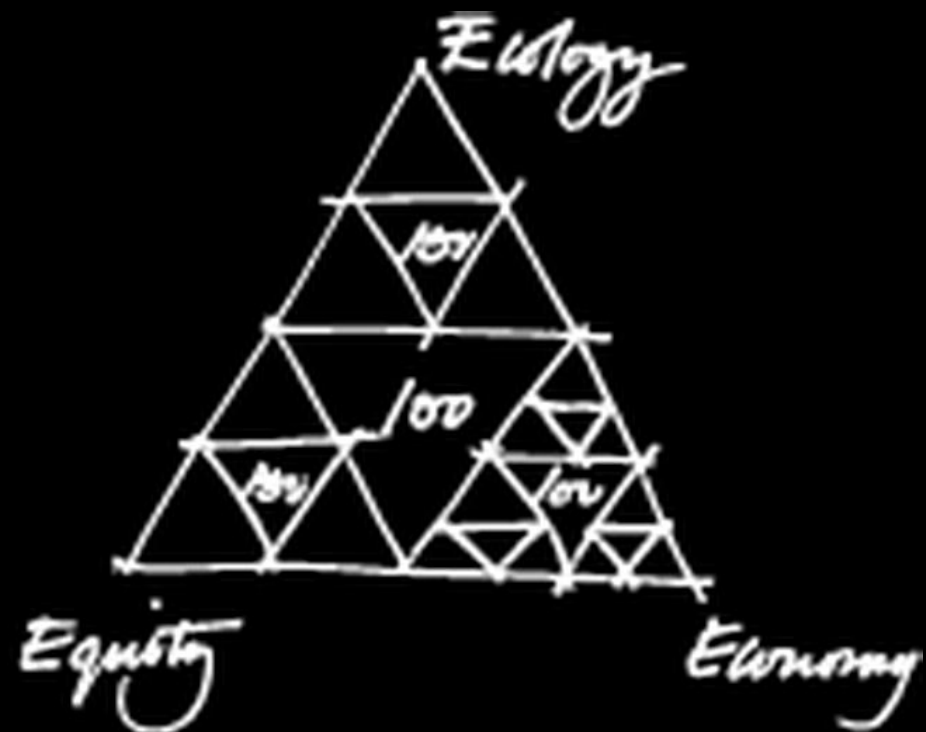
## ***SUSTAINABILITY***

Meeting society's current needs without compromising the ability of future generations to meet their needs

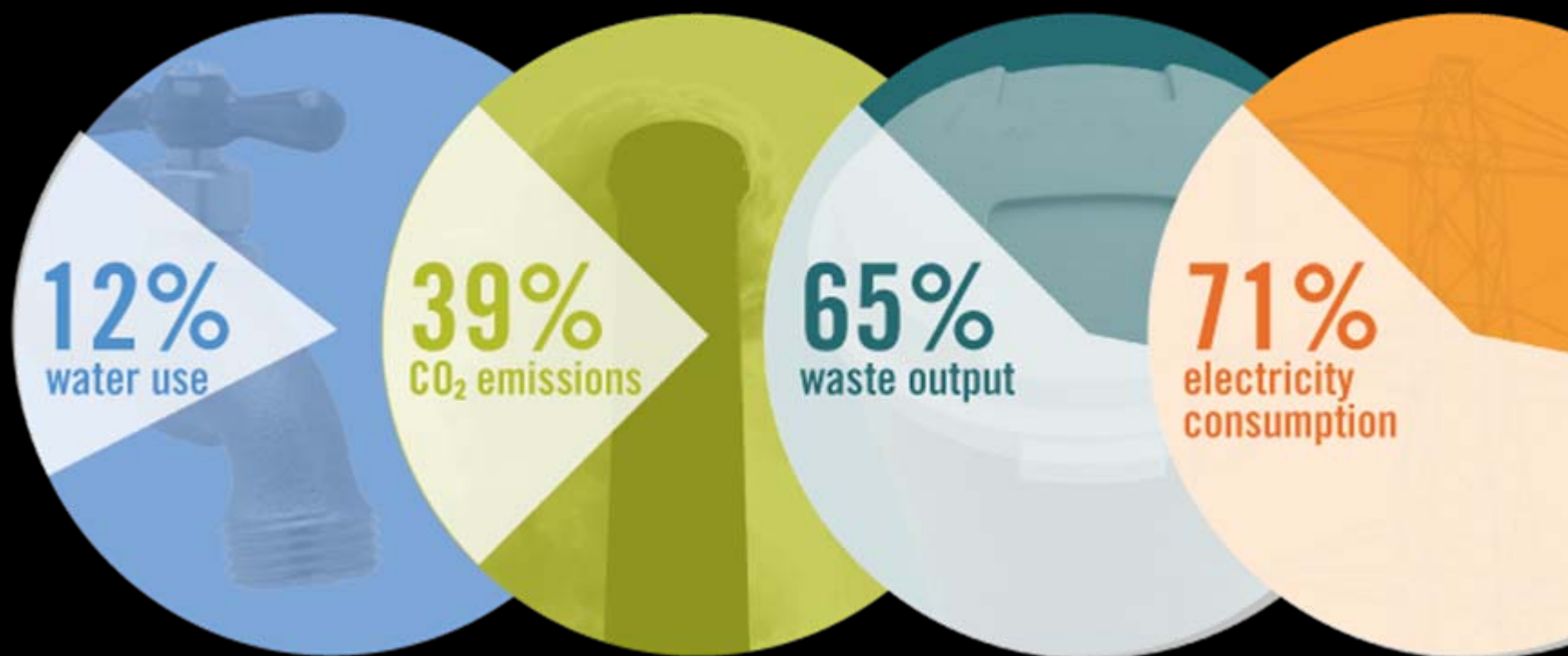


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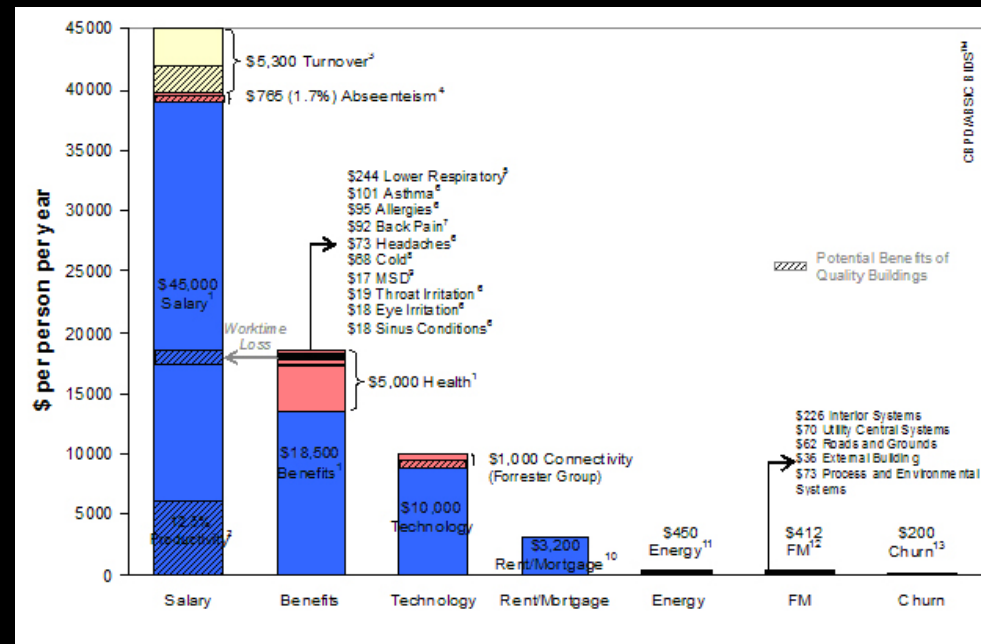


## U.S. Building Impacts:



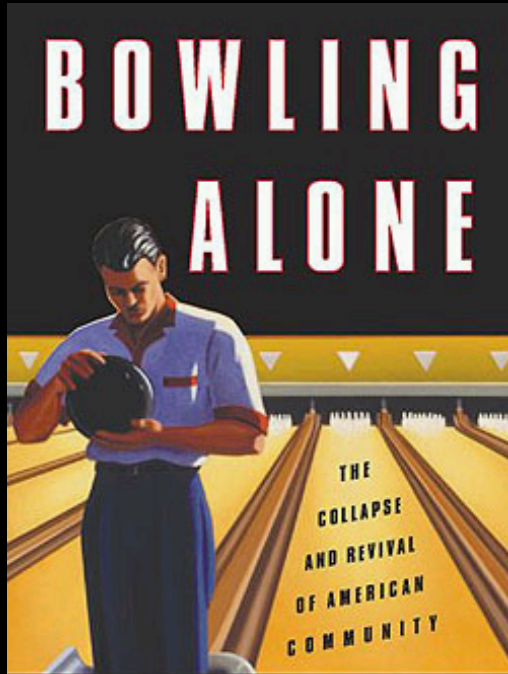
# Economic Benefits

- Over a 30 year life cycle of a commercial building, Design and Construction (D&C) Costs account for just 2% of total cost.
- Operations and Maintenance (O&M) costs account for 6% of total costs.
- Personnel costs account for 92% of costs.



Source: Center for Building Performance at Carnegie Mellon University

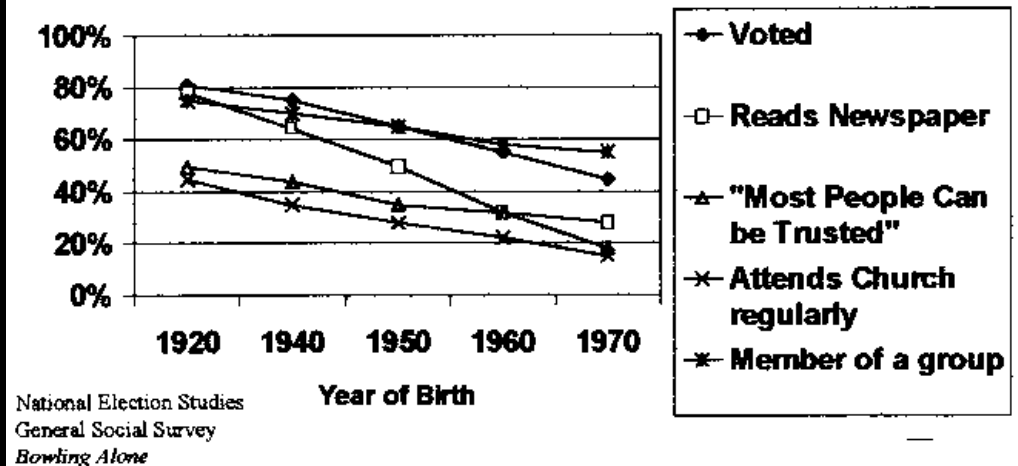
# Social Sustainability



Social Capital...

With each Generation... they are less civic-minded

Generational Trends in Civic Engagement

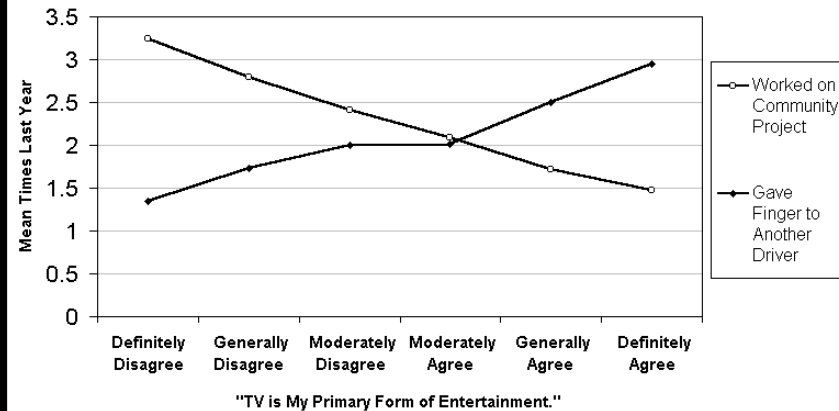




# Social Sustainability



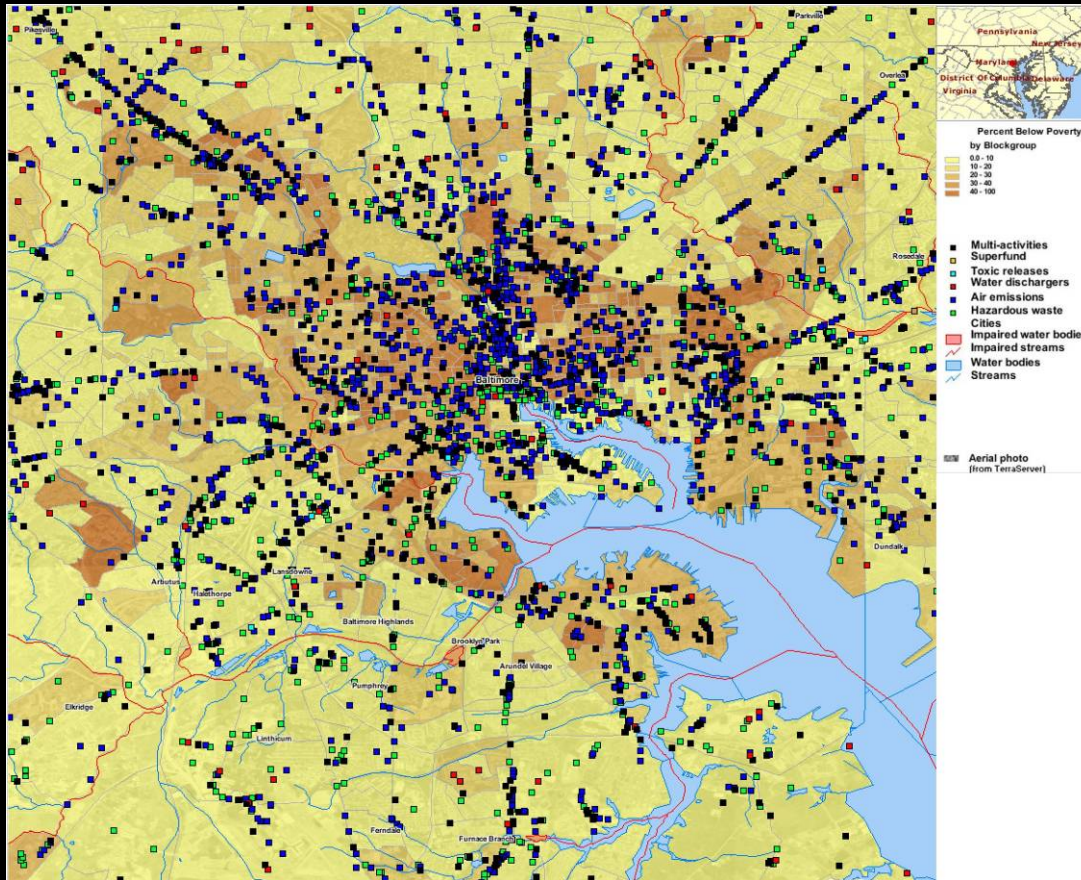
Figure 66: TV Watching and Comity Don't Go Together



...has value.



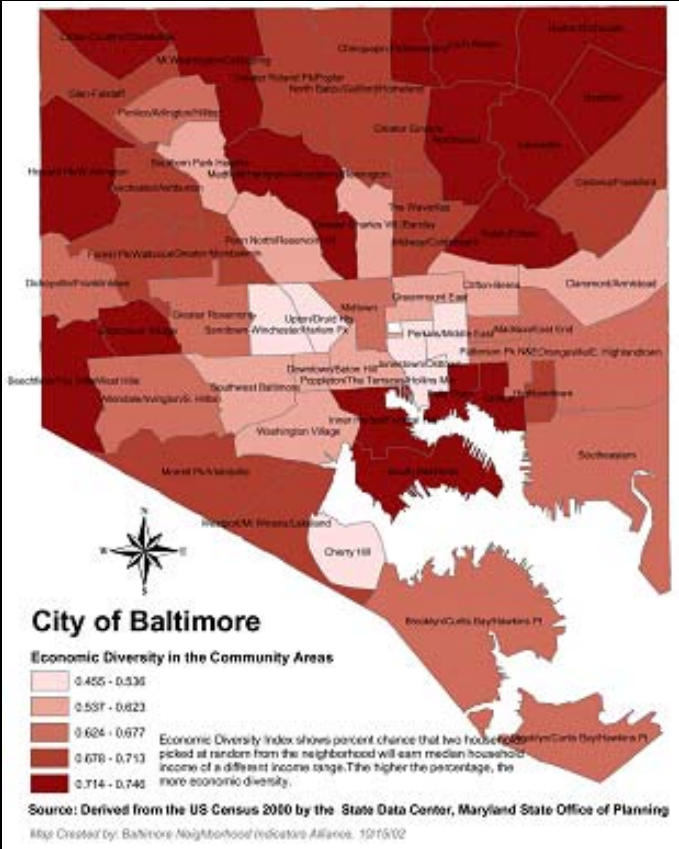
# Social Equity — Environmental Justice



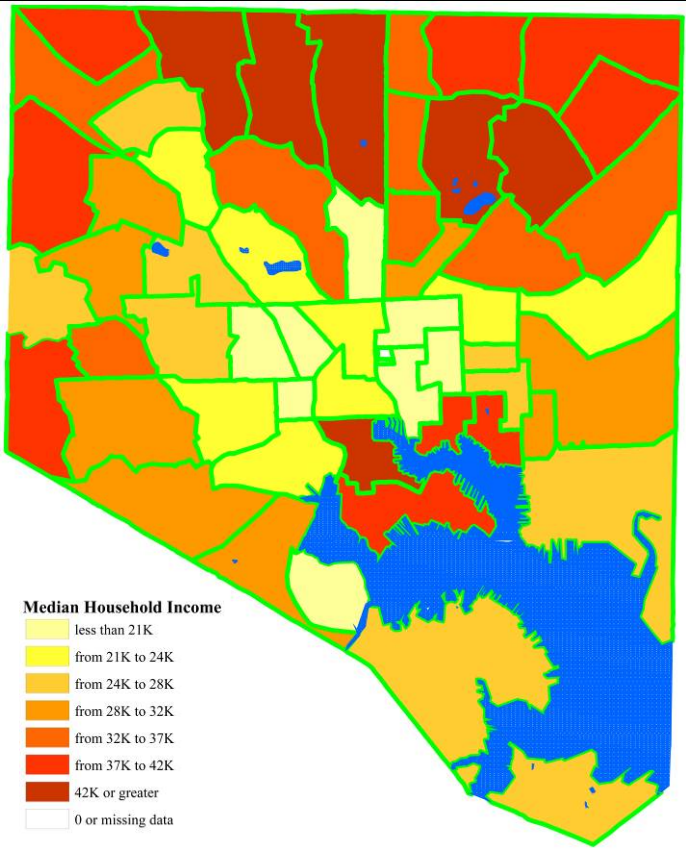
Environmental Concerns vs. Percentage in Poverty

Source: US Environmental Protection Agency

# Social Equity – Economic Justice



Economic Diversity



Median Household Income





# Social Equity - Environmental Labor Movement



Metal Smelter - Russia



Steel Mill - China

# THE NEXT GENERATION'S PERSPECTIVE WILL INCREASE GREEN BUILDING

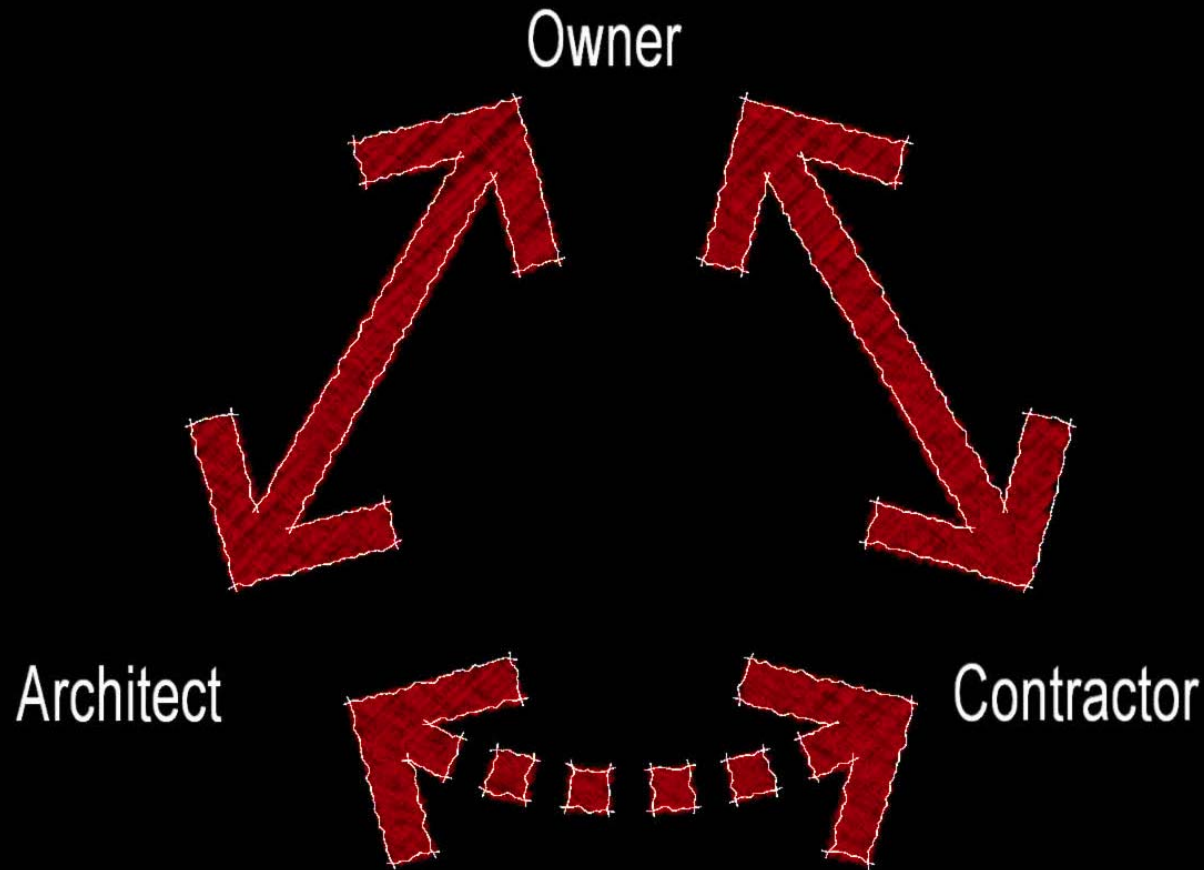
**89%** choose brands aligned  
with social cause

**74%** listen to brands aligned  
with social cause

**69%** shop for brands aligned  
with social cause

**66%** recommend brands aligned  
with social cause

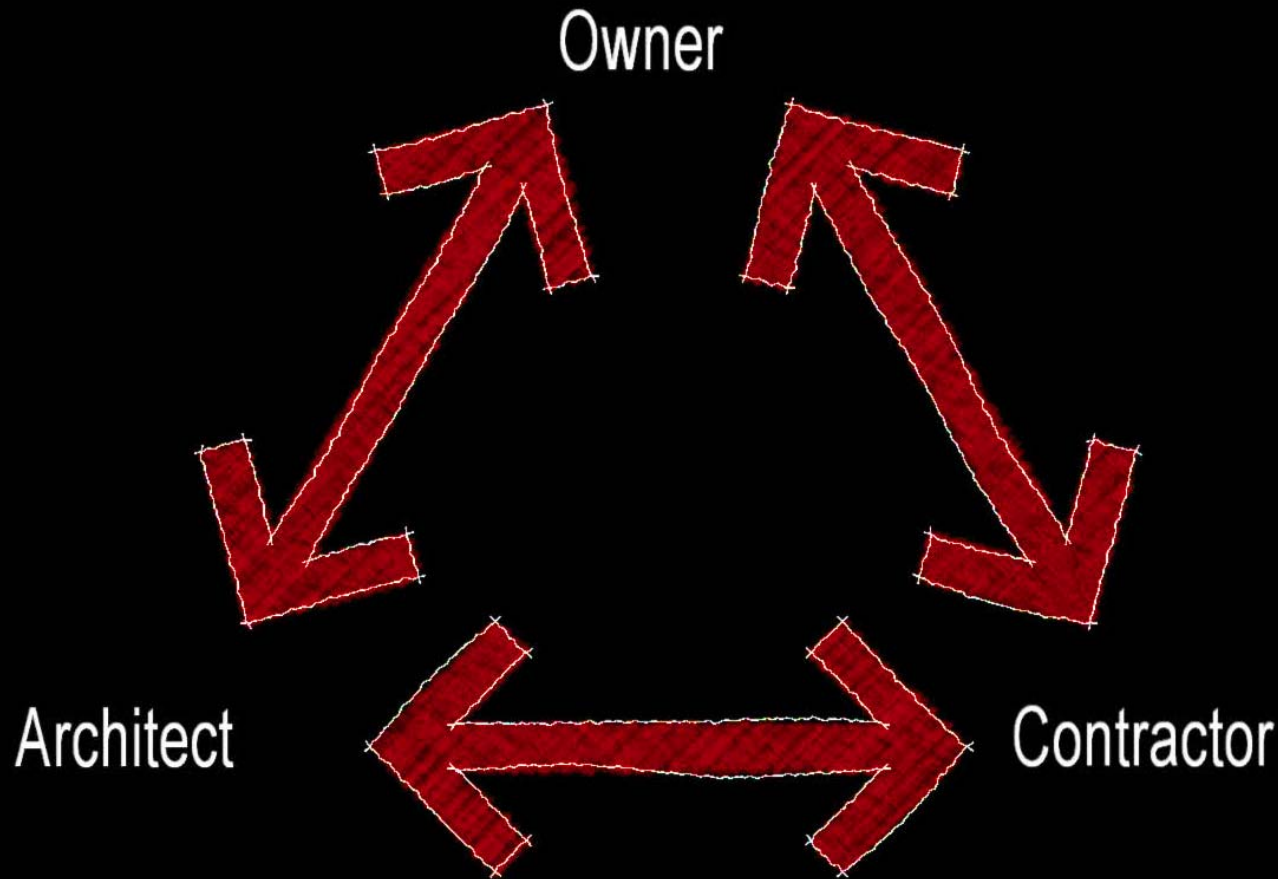
# Traditional Relationships



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# Ideal Relationships



# The Architect's Perspective

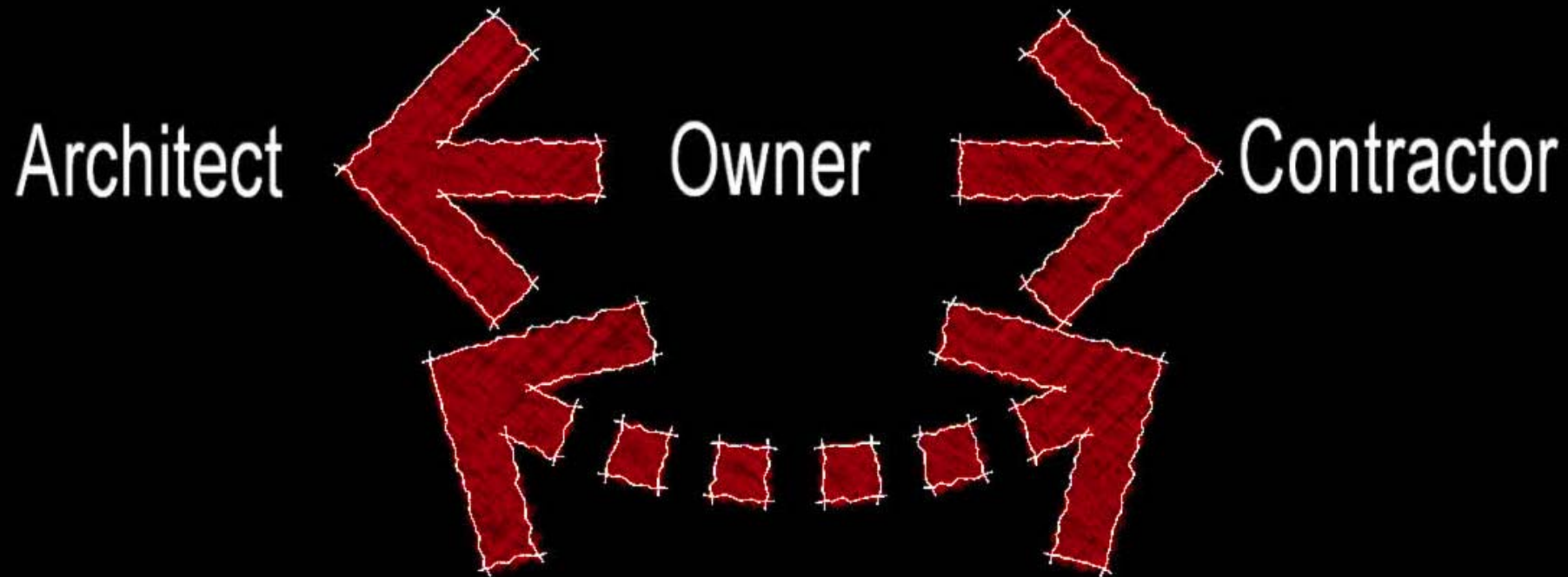


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# The Owner's Perspective



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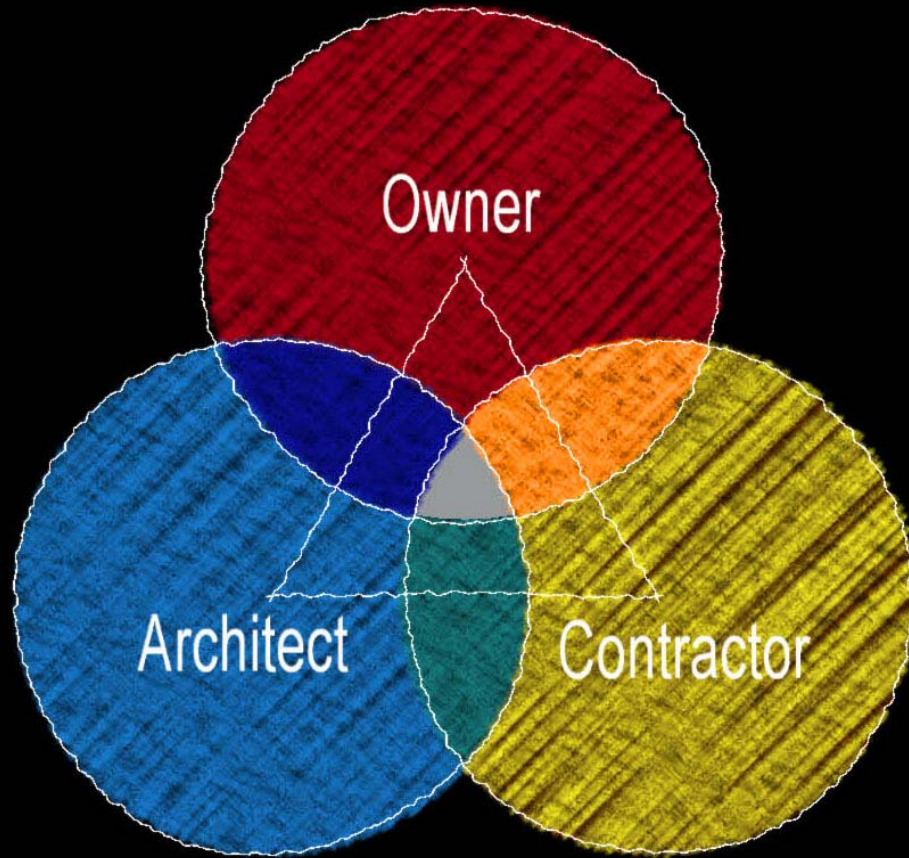
# The Contractor's Perspective



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# The Integrated Design Approach



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# How to Make This Happen

## Previously:

- Modify traditional contractual documents
  - A101™ – Owner/Contractor Agreement
  - B101™ – Owner/Architect Agreement

## Now:

- C195™–2008 Standard Form of Single Purpose Entity Agreement for Integrated Project Delivery



# Fenway Park Boston, MA



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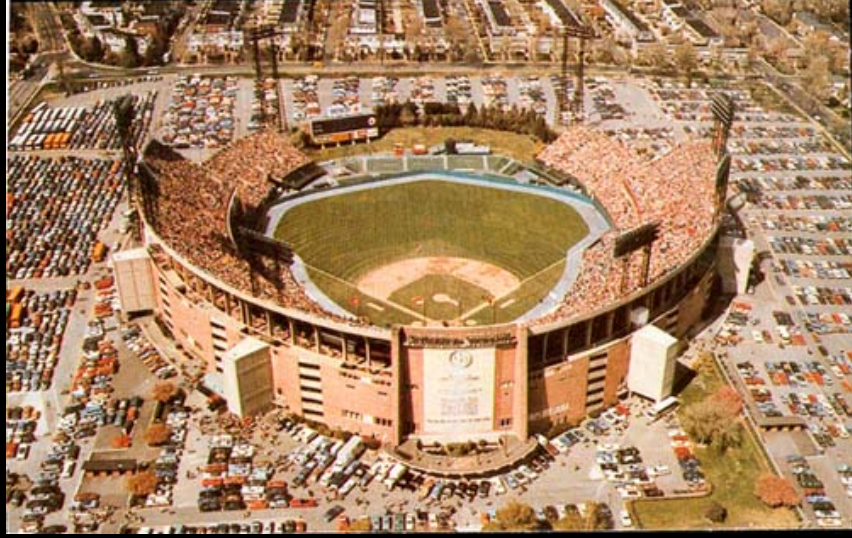
Outside Wrigley Field © Thomas Kolandra 1994



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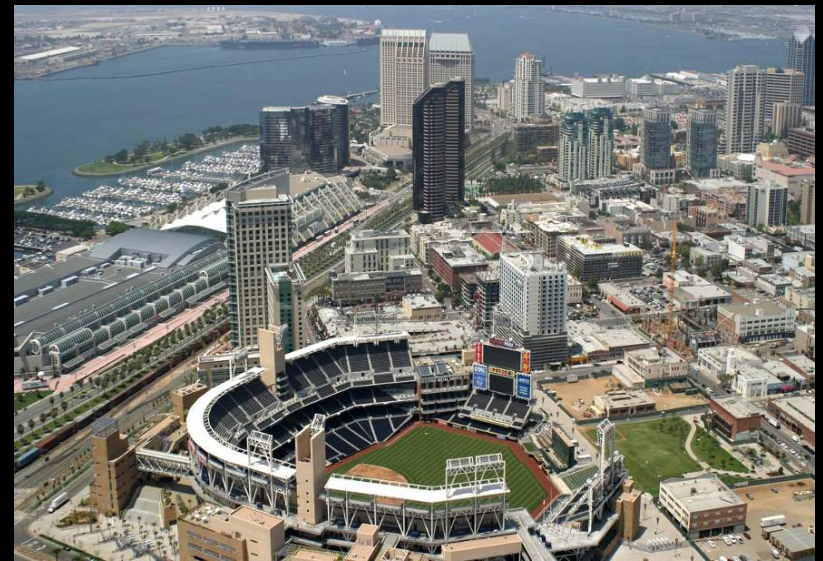
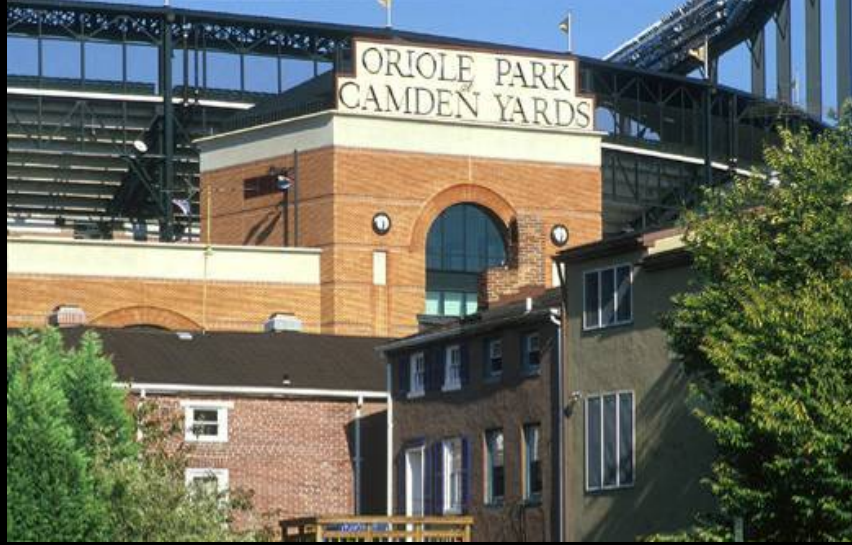




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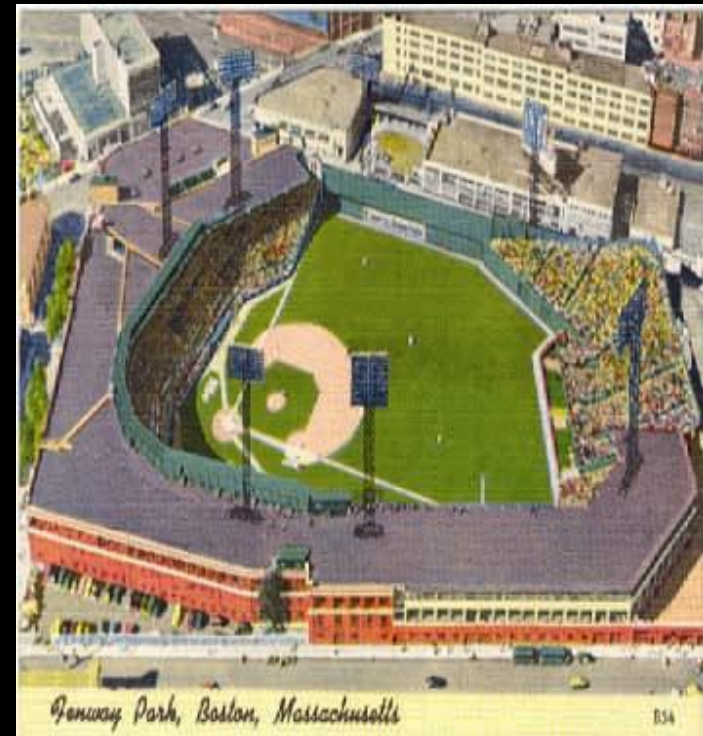
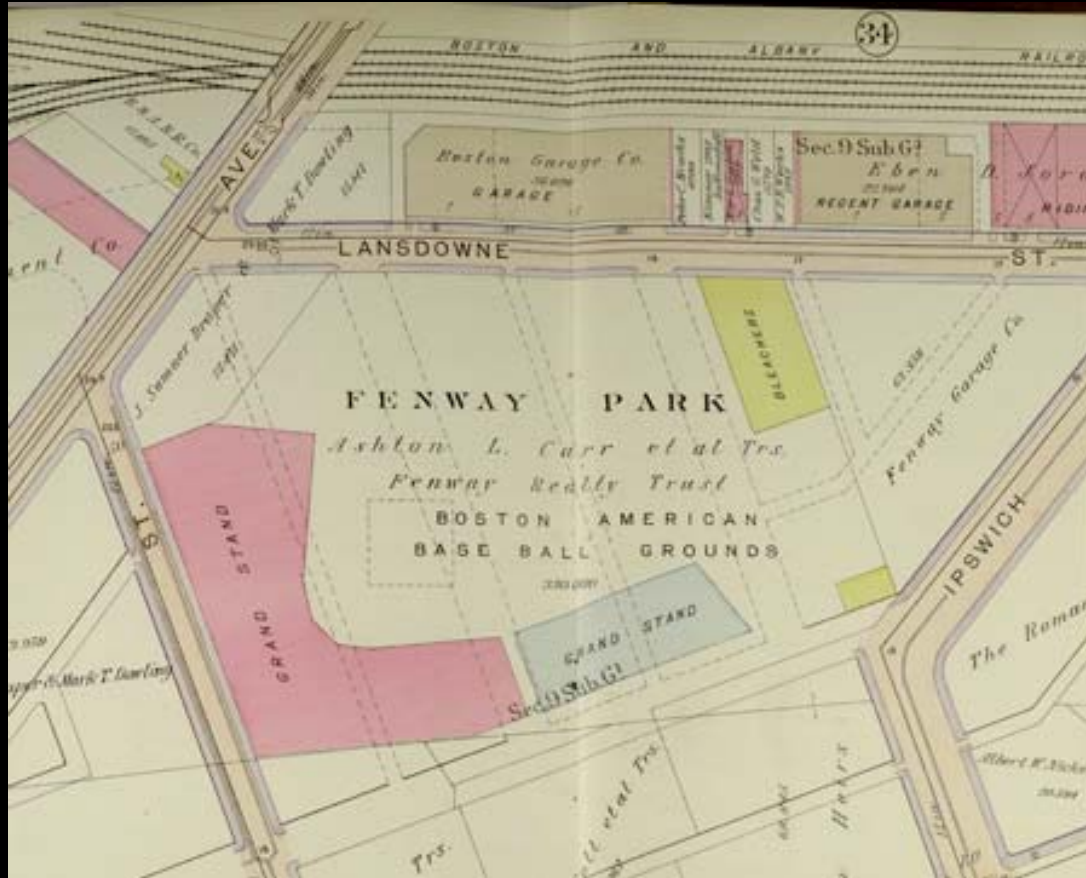


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# Fenway Park – Boston, MA



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Copley Square, showing Hotel Westminster and Trinity Church, Boston, Mass.

18331



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BOSTON IN THE FUTURE



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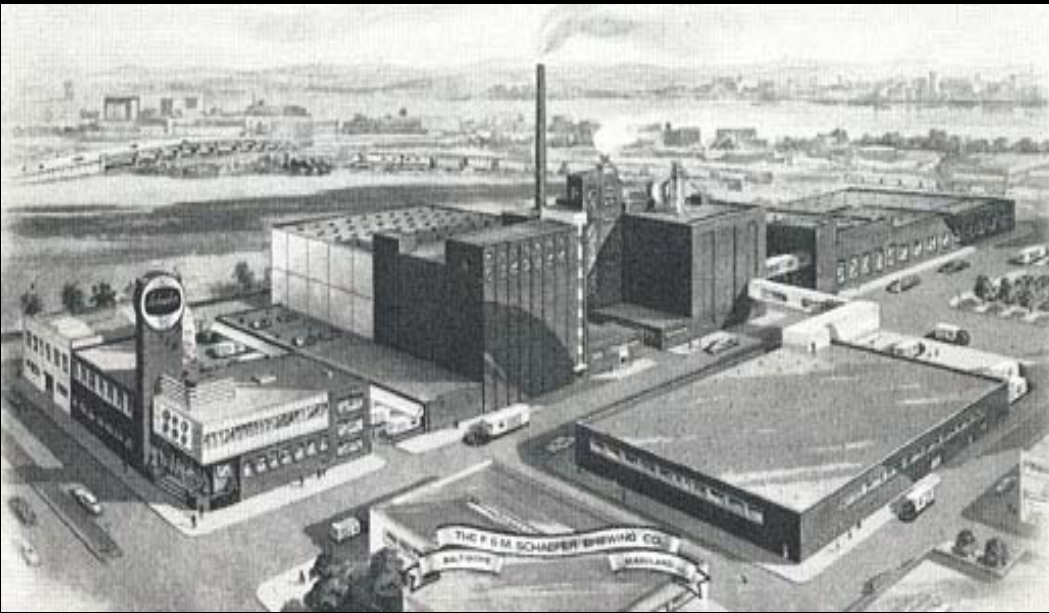
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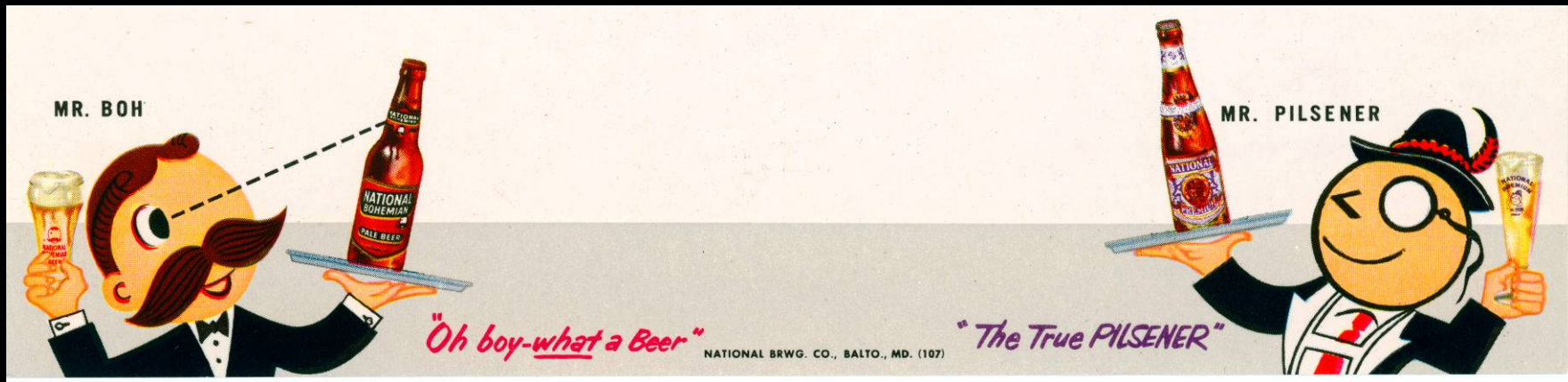


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# “The Land of Pleasant Living”





# The Land of- Not so Pleasant Living



Brewer's Hill – Baltimore, MD



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# Starting the Design/Green Process- Brainstorming

- How can Smartcodes be incorporated?
- How can the existing strengths of the Building be used?
- How to facilitate the Green Process?



# Subcontractor Complaints!

- “Too complicated.”
- “We’ve never had to do it like this before.”
- “We don’t have that in our price.”
- “It’s all Greek to me.”



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## Natty Boh / Phase One

# INSTRUCTIONS TO ALL BIDDERS RE: LEED / GREEN REQUIREMENTS FOR BIDDING, PRODUCT SUBMITTALS, AND CONSTRUCTION PRACTICE

This phase of the Brewer's Hill / Natty Boh project is going to conform to the standards of the U. S. Green Building Council's (USGBC) LEED (Leadership in Energy & Environmental Design) Version 2.0 requirements for Silver certification. To that end, the products and construction methodology used in this project are going to follow the LEED requirements. Your ability to maximize the LEED credit potential of this job will be strongly considered in the bid process. The Material Matrix and Construction Practice outlined below are applicable to all vendors/subcontractor's in that provide materials or work on the site. This information is supplemental to section 01352 LEED REQUIREMENTS of the Natty Boh Project Manual Volume One.

DESCRIPTION	LEED CREDIT	SUB RESPONSIBILITY	POSSIBLE APPLICATIONS (INCLUDING THESE PRODUCTS, BUT NOT LIMITED TO)
		<i>SUBMIT WITH BID</i>	
Show material separate from other cost in your bid – applicable to all subs/vendors regardless of whether they are supplying LEED qualifying material or not	All credits	Break out material cost from labor and equipment in all bids for Div. 2 - 12. This will also apply to subsequent proposals and change orders. Indicate what LEED credits below that you can comply with.	This enables us to compute the ratios of LEED qualifying material to total material
<i>INCLUDE ITEMS LISTED BELOW WITH SUBMITTALS</i>			
Resource Reuse – use min. 5%(MR 3.1) or 10 % (MR 3.2) salvaged or refurbished materials	MR 3.1 MR 3.2	Provide receipt if item is purchased.	Structural beams and posts, tanks, brick, flooring, doors, cabinetry, steel stairs, steel ceilings, decorative items
Recycled Content - use min. 25% (MR 4.1) or 50% (MR 4.2) materials that have recycled content	MR 4.1 MR 4.2	Determine a cost for the material with recycled content. Provide a certification from the manufacturer verifying the percent and type of recycled content as outlined below. ____% (by weight) of post-consumer content. ____% (by weight) of post-industrial content.	Concrete, rebar, compost, steel, misc. metals, wheatboard, MDO, metal roofing, membrane roofing, gypsum board, glass, ceramic tile, acoustical ceiling panels, carpet systems, paint, toilet compartments, signage
Local Materials			
Regionally Manufactured Materials – use min. 20% of total building materials that are manufactured (final assembly) within a 500 mile radius of building site	MR 5.1	Provide manufacturers statement declaring where product was made.	Dirt, compost, concrete, plants, steel and misc. metals, reclaimed products (wood, concrete), lumber, millwork, roofing, doors, windows, glass, gypsum board, ceramic tile, paint, caulk and sealants, accessories, signage, elevators, mechanical/plumbing fixtures and equipment, sprinkler pipe, electrical fixtures and devices
Regionally Extracted, Harvested or recovered Materials – of those regionally manufactured materials – use min. 50% that are extracted, harvested or recovered within 500 mile radius of building site	MR 5.2	Provide manufacturer's statement declaring which components of the local product were procured from within a 500-mile radius of the building site.	Dirt, compost, concrete, plants, steel and misc. metals, reclaimed products (wood, concrete), lumber, millwork, roofing, doors, windows, glass, gypsum board, ceramic tile, paint, caulk and sealants, accessories, signage, elevators, mechanical/plumbing fixtures and equipment, sprinkler pipe, electrical fixtures and devices
Rapidly Renewable Materials - for min. 5% of total building materials	MR 6	Provide written documentation from the manufacturer declaring the rapidly renewable materials contained in the products.	Bamboo flooring, wheatgrass cabinetry, sunflower seed board, poplar OSB, wool carpet, linoleum flooring, cotton batt insulation
Certified Wood – use for min. 50% of wood-based materials	MR 7	Provide chain-of-custody documents from the manufacturer declaring conformance with Forest Stewardship Council (FSC) guidelines for certified wood building components.	Wood windows, structural and general framing, flooring, finishes, furnishings, and non-rented temporary construction items such as bracing, concrete form work and barriers.

DESCRIPTION	LEED CREDIT	SUB RESPONSIBILITY	POSSIBLE APPLICATIONS (INCLUDING THESE PRODUCTS, BUT NOT LIMITED TO)
<i>ALL SUBS MUST USE LOW-EMITTING MATERIALS (OUTLINED BELOW) INSIDE THE BUILDING</i>			
All adhesives and sealants used in the building must conform to these standards	EQ 4.1	Provide manufacturer's MSDS that shows adhesives meet or exceed VOC limits of South Coast Air Quality Management District Rule #1168 AND all sealants used as a filler must meet or exceed Bay Area Quality Management District Reg. 8, Rule 51.	
All paints and coatings used in the building must conform to these standards	EQ 4.2	Provide manufacturer's MSDS that shows paints and coatings meet or exceed VOC and chemical component limits of Green Seal requirements.	Paint, intumescent paint, industrial coatings
All carpet systems used in the building must conform to these standards	EQ 4.3	Provide manufacturer's cut sheet that shows carpet systems meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.	Carpet pad, cove base, adhesives,
All composite wood and agrifiber products used in the building must conform to these standards	EQ 4.4	Provide manufacturer's cut sheet that shows composite wood or agrifiber products have NO urea-formaldehyde resins.	MDF, MDO, plywood, wheatboard





## CONSTRUCTION PRACTICE

### Construction Waste Management (MR 2.1 and 2.2)

We will be recycling, salvaging, and reusing as much as possible. The intent is to divert waste from the landfill. The first step is to try to salvage or reuse material during the demolition process. During demolition and construction designated recycling bins will be on site. It is every subs responsibility to separate their waste and scraps and put them in the appropriate bin.

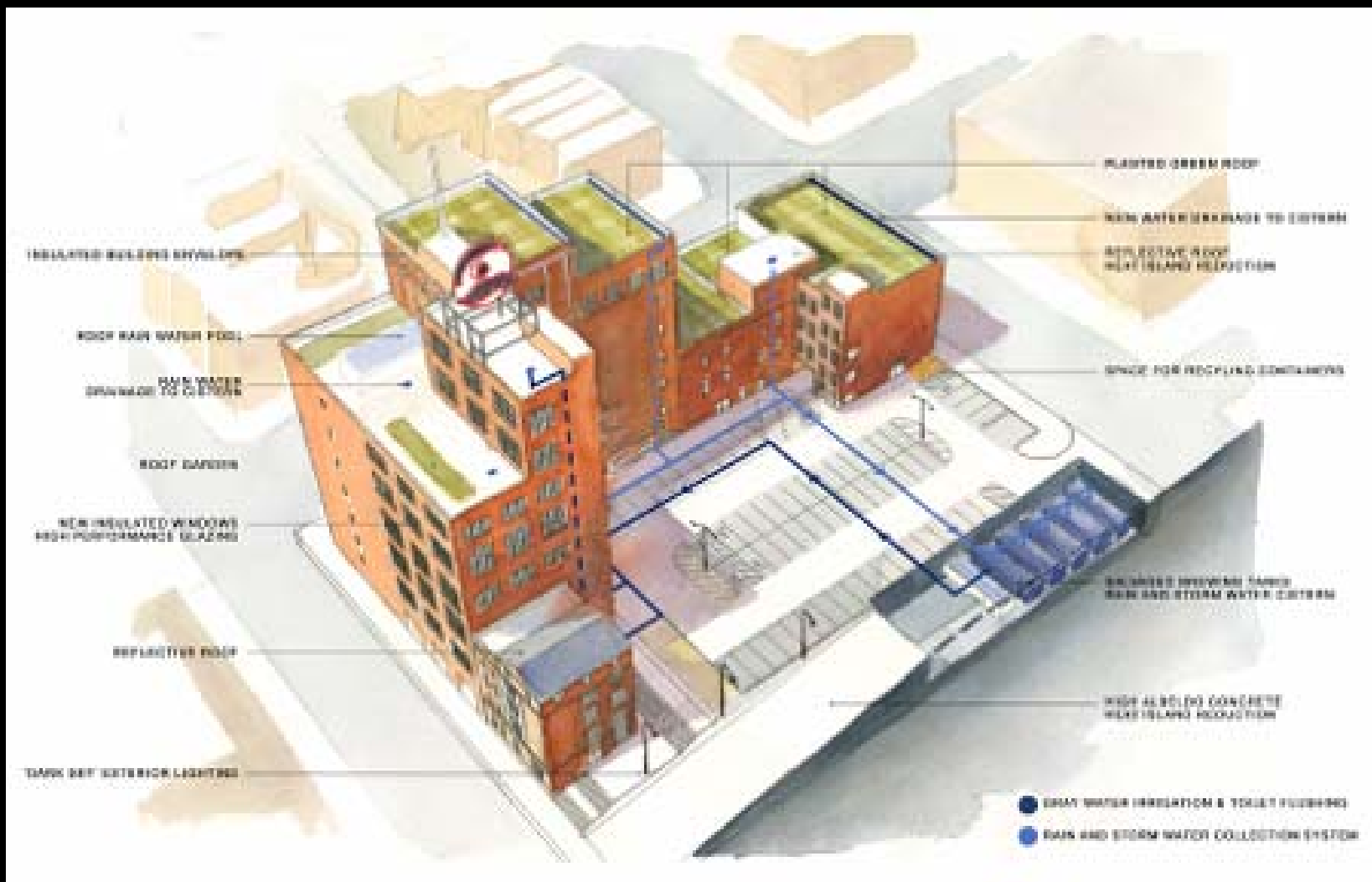
# Natty Boh Green LEED Check List

	What	Who	When
1.	Research invoices for any schedule of values (Div. 1-10)	Bryan	
2.	Final reports from Brian Toevs. Construction photos from Brian Toevs.	Julia	
3.	Update Construction Management Plan	Julia	
4.	Call subs for material costs etc.	Julia	
5.	Tenant Coordination – 1. Have them follow Construction Management Plan and other LEED procedures 2. Input material costs and other criteria in log	Julia/Tenant Superintendent/PM/Steve	
6.	Get MEP LEED checklists	Julia/Christine/Dan	
7.	Find a less expensive commissioning agent for tenant fit out	Julia	
8.	Get tenant fit out material costs and other LEED criteria	Julia	
9.	Roof Warranty info to Wells	Butch	
10.	SS7.1: Reduce heat island ▪ Highlight “high albedo” concrete surfaces on site (runs all the way to malt Mill) ▪ Do area calc of concrete surfaces and whole site – conc. should be at least 30% of non-roof impervious surfaces ▪ Get documentation that concrete meets 0.3 albedo reflectance	Bryan	



- Green Roof
- Storm Water Management





# Innovative Design



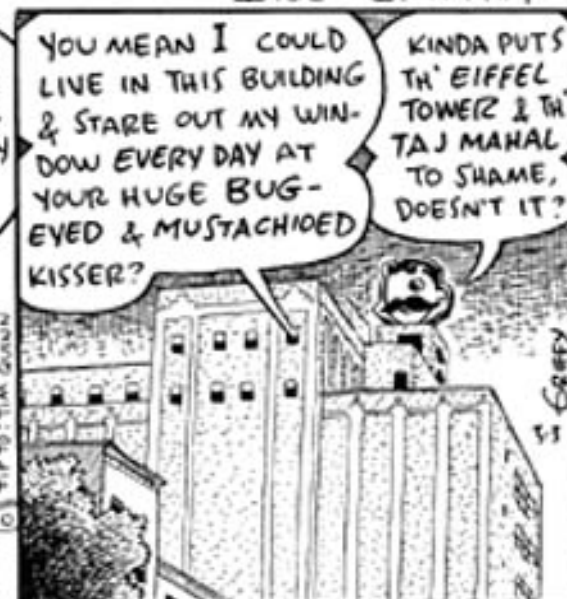
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**ZIPPY**

**"STRANGE BREW"**

**BILL GRIFFIN**







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# Miller's Court – Baltimore, MD



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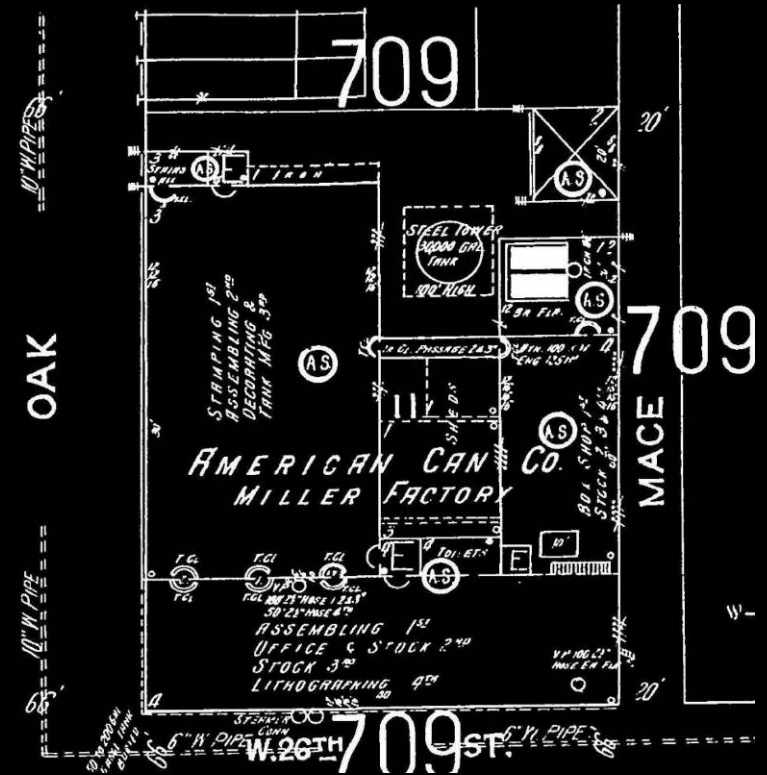
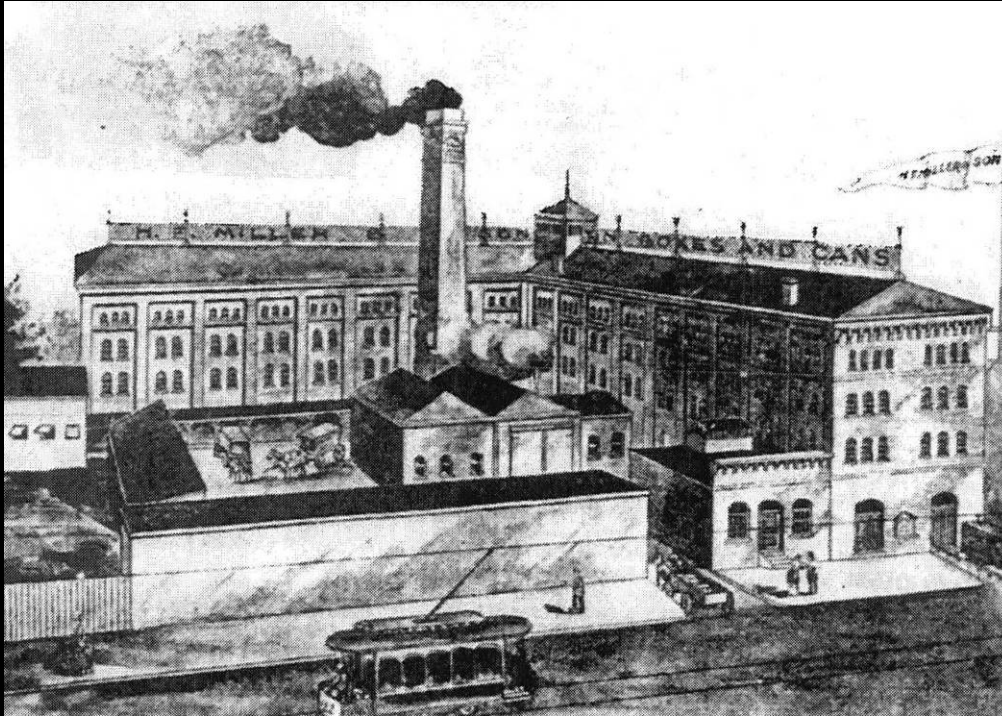


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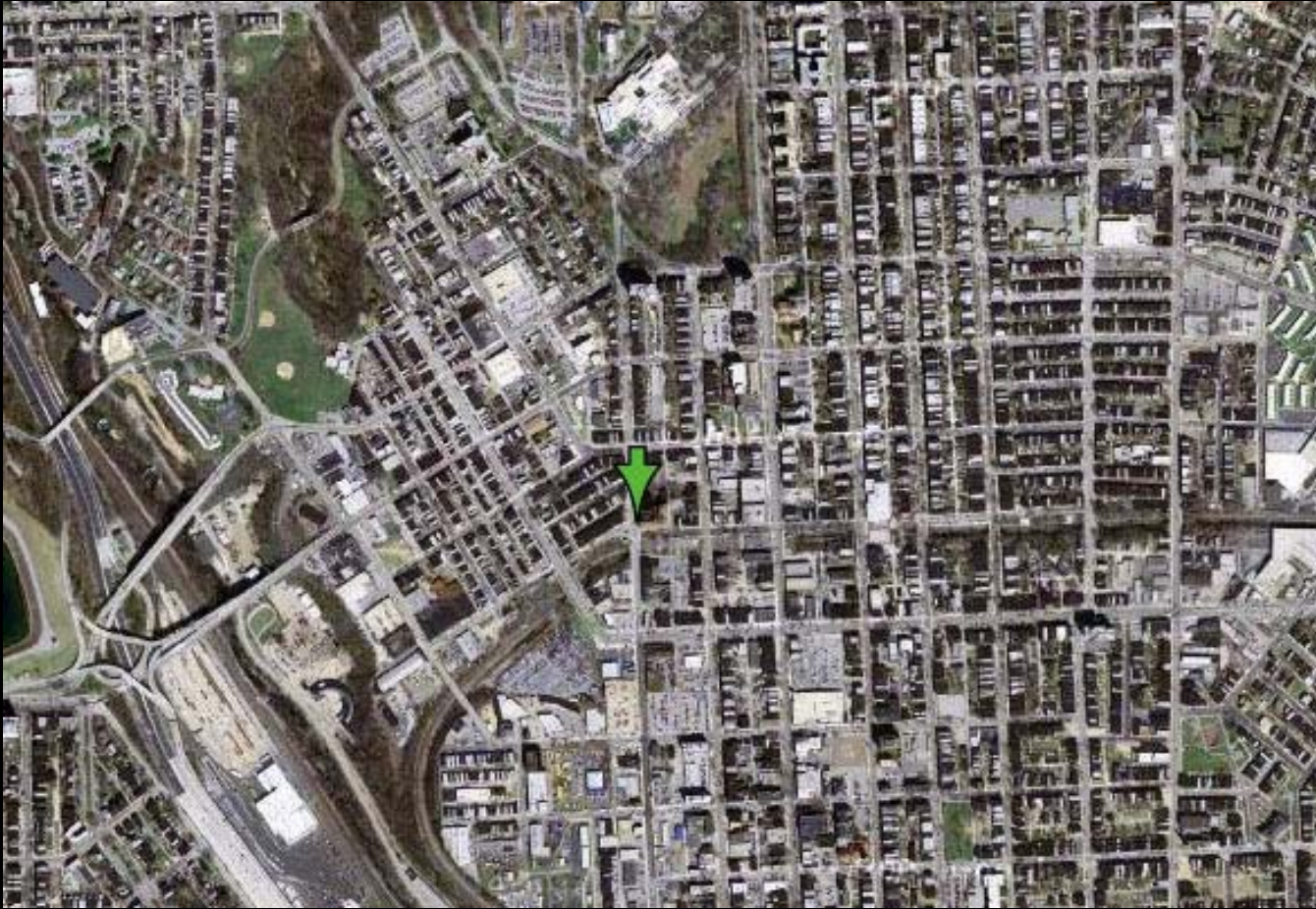


# Miller's Court - History





# Miller's Court - Site and Context



# Miller's Court - Previous Attempts

- Two previous developers
- Multiple schemes
- 90+ market rate residential units
- 60 parking spaces for “luxury” condos



# Thinking Outside the Box

- Mixed-use Development
- Innovative Mechanical System
- Opportunities to Establish Community
- Shared Amenity Spaces
- Inner Court as “Urban Oasis”
- Community Engagement through Art





# Miller's Court - Design Concept



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# Transforming the Past to Preserve Our Future



It is not necessary to change.  
Survival is not mandatory.

- W. Edwards Deming



# Contact Information

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