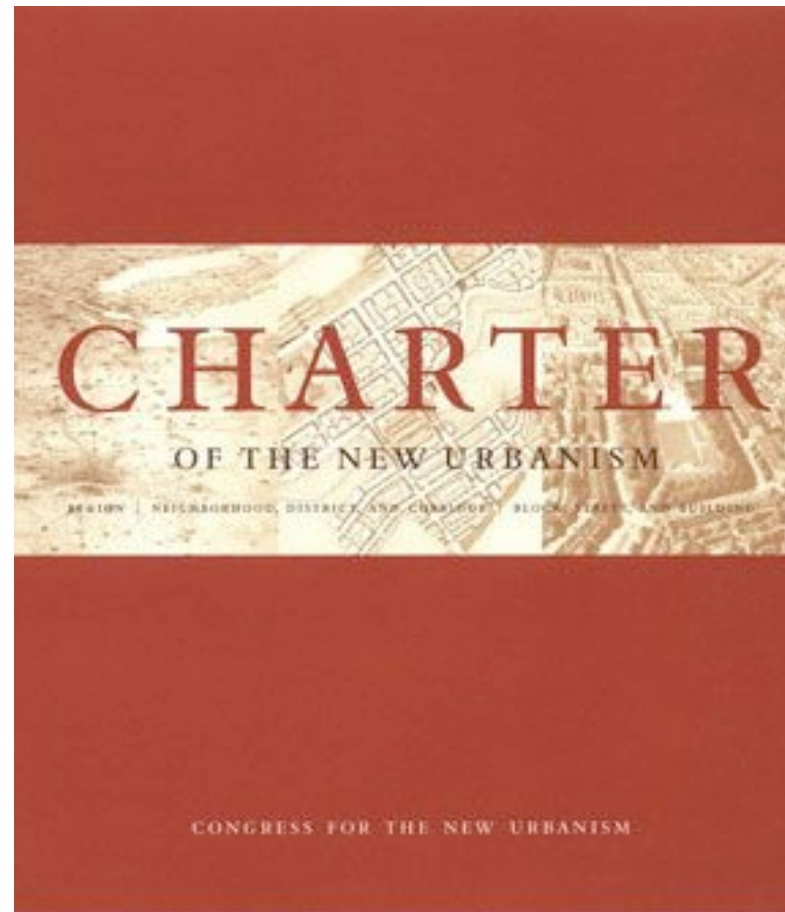


# Charter of the New Urbanism



1996

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## Colonial america



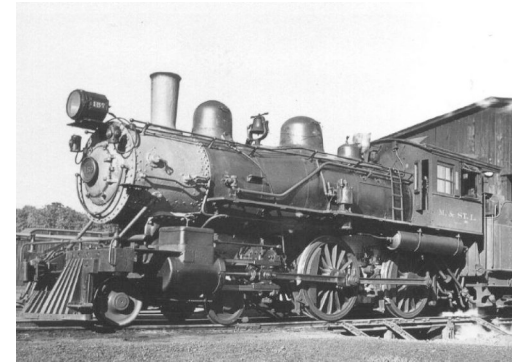
No person shall be . . . deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.



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# American towns become cities



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# Urbanism co-evolved with Transit



GM buys streetcars and replaces with diesel buses



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# Embrace of Traditional Urbanism

Traditional Neighborhood development



Naperville, IL.



Chicago, IL.



1900-1920

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# Embrace of Traditional Architecture

Traditional Neighborhood Development



Traditional  
Farmhouse

45' lot  
2 dwellings



Charleston Single  
House

25-30' lot  
1 dwelling



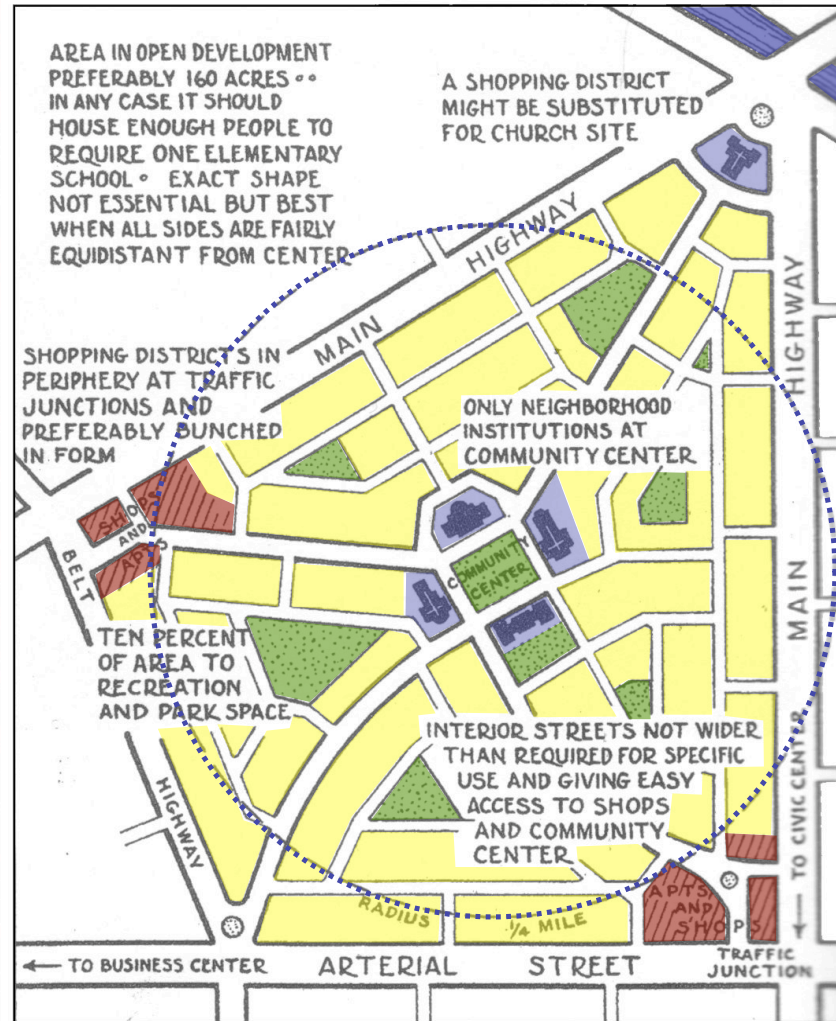
Georgetown  
Rowhouses

16-24' lot  
1 dwelling



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# Rediscovery of the Neighborhood



Clarence Perry, 1926

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# U.S. Green Building Council



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# LEED - Categories

Sustainable Sites



Energy & Atmosphere



Indoor Environmental Quality



Addresses natural light

Water



Materials & Resources



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# U.S. is the world leader in something



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# Greenbuild 2006 Goals for LEED

## Platinum Projects are Free

Successful projects are refunded fees

## 100,000 LEED Buildings by 2010

Less than 1,000 LEED out of 1,500,000 annually

## Raise Building Energy Performance

Minimum 50% better than average by 2007



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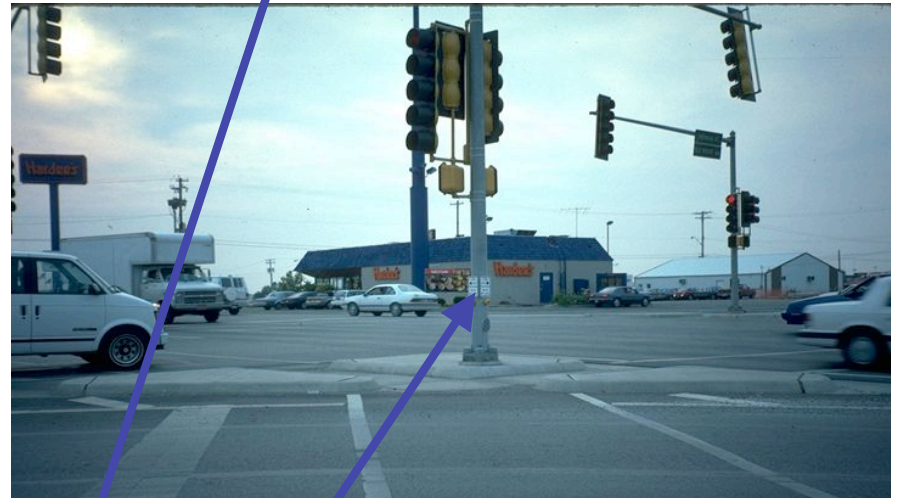
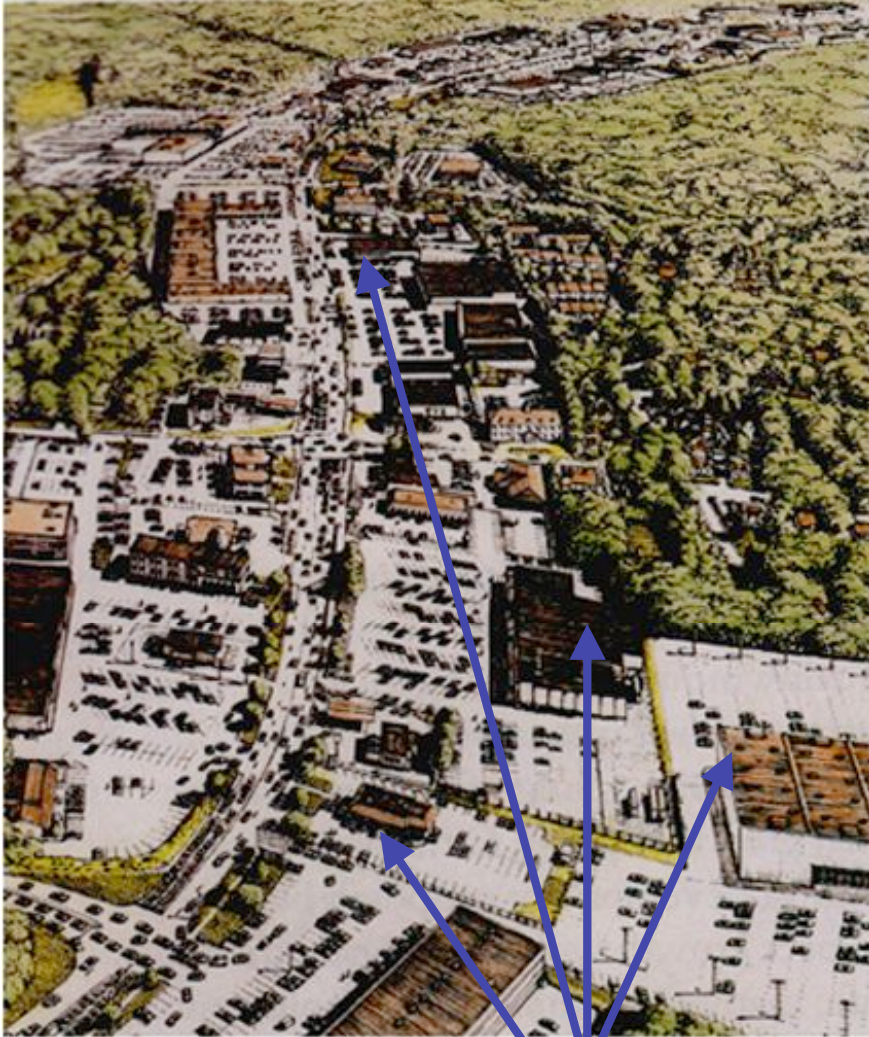


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# The Half Measures of Green Building



LEED-Retail?  
LEED-Volume Build?



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## Location Efficiency LEED-CI Pilot

“The LEED Rating System does not distinguish between the size (or quantity) of mass transit systems in proximity to a project... Awarding extra credit would create an added advantage for projects located in larger metropolitan areas.”



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## Paved, Auto-Dominated Zones



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# This is not an either-or situation

## U.S. CO2 Emissions

Transportation	484.9 m.tons	32.6%
----------------	--------------	-------

Residential	284.5 m.tons	19.0%
-------------	--------------	-------

Commercial	238.4 m.tons	15-16%
------------	--------------	--------

<b>Buildings Subtotal</b>		<b>34-5%</b>
---------------------------	--	--------------

## Oak Ridge Labs



Transportation is the fastest growing sector

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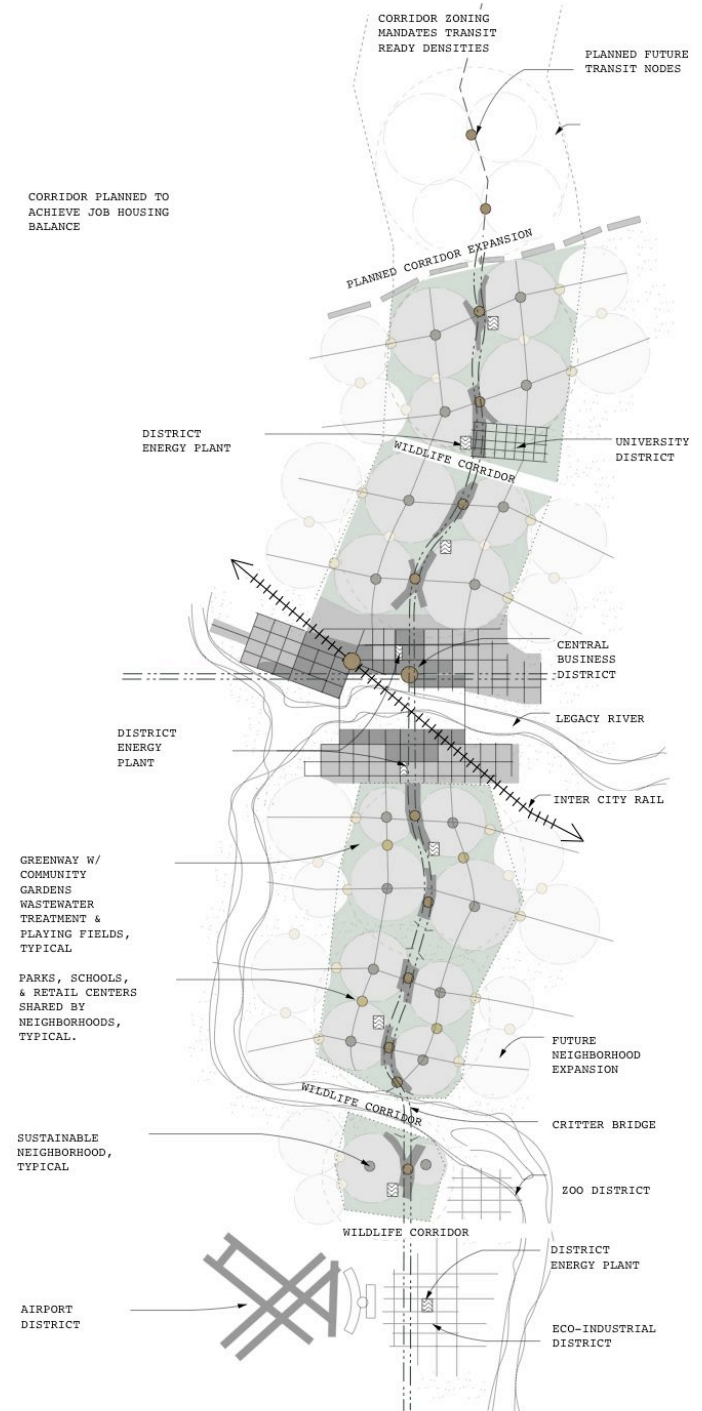
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# Thesis Implications



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How specifically will Sustainable Urbanism  
affect the practice of architecture?



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## #1 Change:

Code adoptions of LEED Neighborhood Development may start as early as 2010



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# What is LEED-ND?



Joint venture of USGBC, CNU, NRDC (SG)  
national certification for “smart” development  
Primary market: development teams  
Secondary market : planners & local government



## How does LEED-ND apply?



- Developments of multiple buildings and developer-supplied infrastructure
- May be mixed-use, or entirely residential or commercial if adding diversity to surrounds
- Will inform land-use component of LEED
- Currently 9 pre-requisites, 100 credits



# How is LEED-ND organized?

Three Big Questions:

## Where?

- Locate in or near existing urban areas
- Avoid sensitive areas

## What?

- Compact, connected, & complete place

## How?

- Project construction and maintenance



# Where: Smart Location and Linkage



## Prerequisites

- Smart Location
- Water and Wastewater Infrastructure
- Imperiled species and habitats
- Wetland and water body conservation
- Farmland preservation
- Floodplain avoidance





# Where: Smart Location Pre-Requisite

INFILL,  
REDEVELOPMENT,  
OR ADJACENT  
PLANNED  
EXISTING  
SERVICE  
DRIVE LESS  
THAN  
REGIONAL  
AVERAGE  
WETLAND  
AND WATER  
BODY  
PROTECTION  
SPECIES  
AND  
ECOLOGICAL  
COMMUNITIE  
S



CONGRESS  
FOR THE  
NEW  
URBANISM



# What: Neighborhood Pattern and Design



## Prerequisites

- Open Community
- Compact Development





How:

## Green Construction and Technology



## Prerequisites

- Erosion control



## Credits Earned through Architecture

Compact development	5	
Walkability Credits		8
Affordable For Sale Housing	2	
Green Buildings		3
Energy Efficient Buildings	3	
Water Efficient Buildings		2
Subtotal		23*

Equivalent to 2 LEED levels



## #2 Change:

You need to be in the business of selling dense development



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# Housing sorted by # of Stories

2-3 Flrs.



3-4 Flrs.



4-6 Flrs.



6+ Flrs.



#3 Change:

Design Car Free Housing



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# Travel Density

## Population density versus travel density

LOCATION	POPULATION DENSITY <i>(people per acre)</i>	PERSON TRAVEL <i>(vehicle travel per person per day)</i>	TRAVEL DENSITY <i>(vehicle travel per acre per day)</i>
Healdsburg	5 people/acre	30 miles/person	150 miles/acre
Berkeley	30 people/acre	10 miles/person	300 miles/acre
Downtown San Francisco	250 people/acre	4 miles/person	1,000 miles/acre





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# Car Sharing



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## #4 Change:

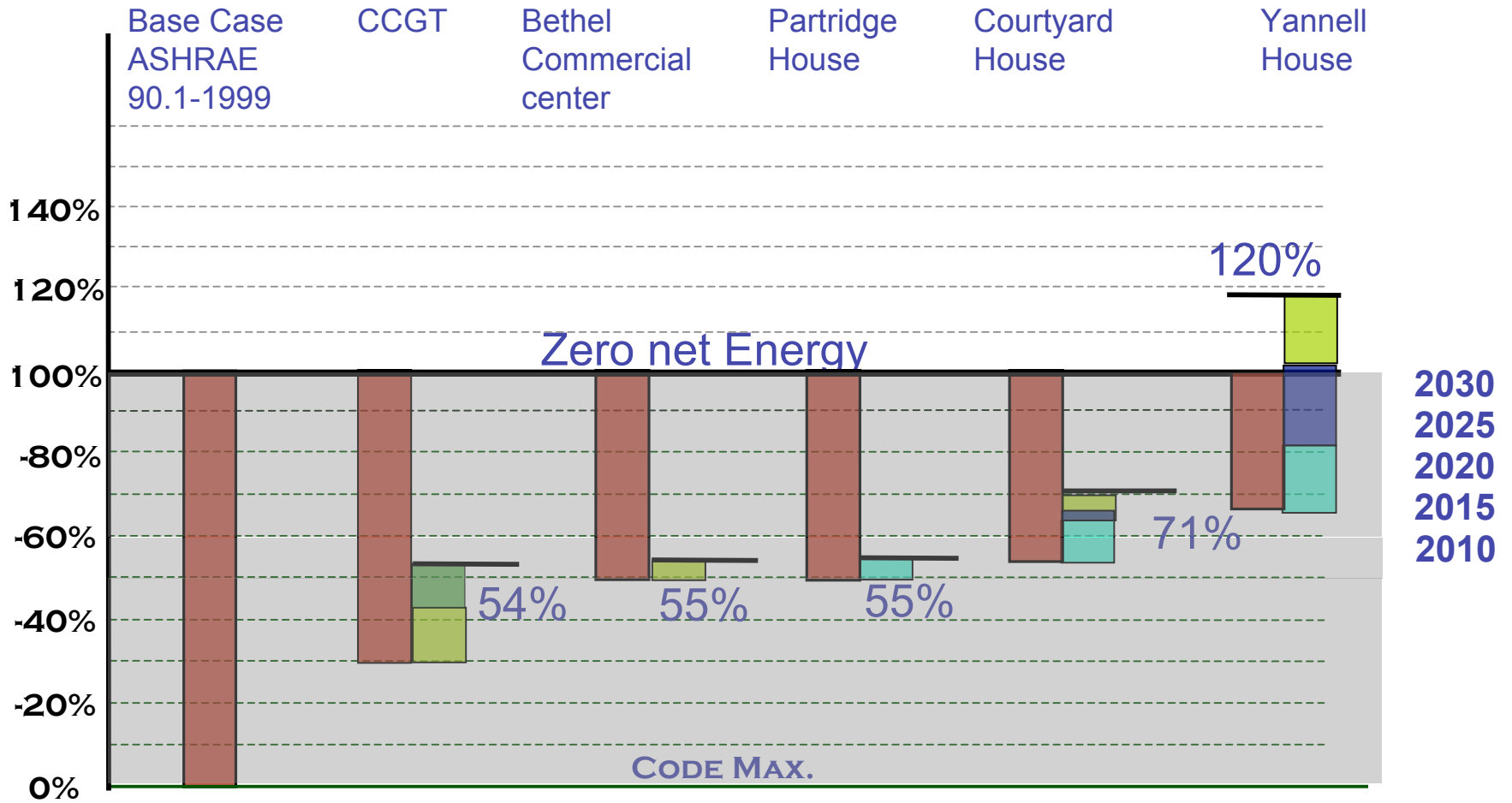
# Use Urban Form to Help Meet the 2030 Architecture Challenge



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# Building Energy Performance



■ ENERGY USE   
 ■ SOLAR DHW   
 ■ PV SOLAR   
 ■ BLDG. ORIENTATION (PASSIVE SOLAR)   
 ■ GREEN POWER

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# Chicago Center for Green Technology

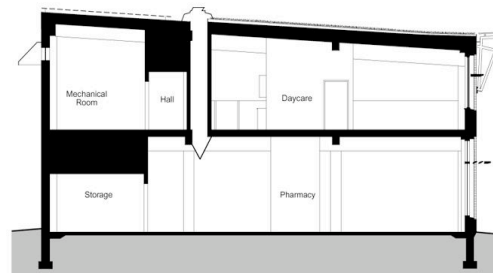
LEED Platinum (3rd in US)



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# Bethel Commercial Center



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PV Cornice



# Christy Webber Landscapes Headquarters

Chicago, IL



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# Tropical Courtyard House

Alys Beach, Florida



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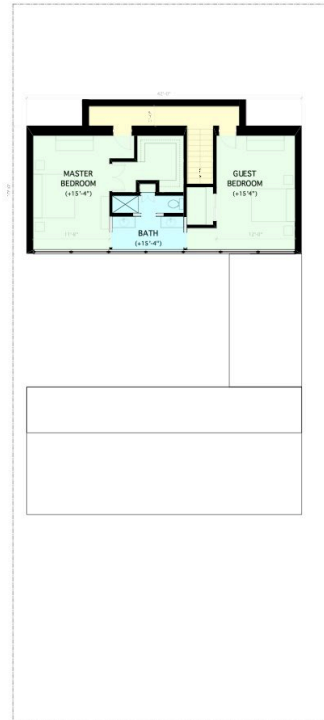
# Zero Net Energy House

Chicago, Illinois



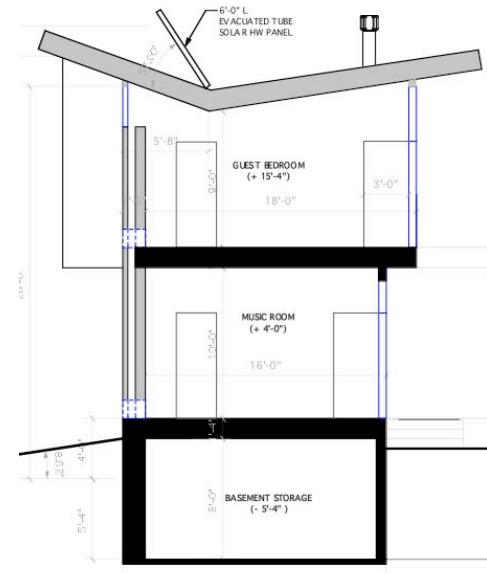
First Floor Plan - Scheme C3A\_NEW - Stair to Second Floor in North Wing  
Scale: 1/4" = 1'-0"  
Date: 1/31/07

Ground Floor



Second Floor Plan - Scheme C3A\_NEW - Stair to Second Floor in North Wing  
Scale: 1/4" = 1'-0"  
Date: 1/31/07

Second Floor



Section looking east



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# Urban Design - Solar Block Studies



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**SOLAR BUILDING ORIENTATION**





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# Retrofitting a Downtown



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# Normal: Form-Based Coding

## TOWER ELEMENT

A tower element is permitted for street facades located on the Circle. If a tower is desired, the following guidelines apply.

### Orientation

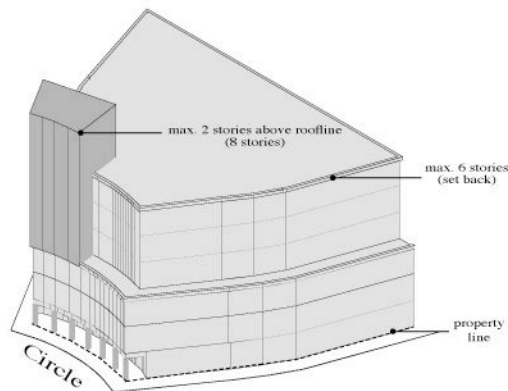
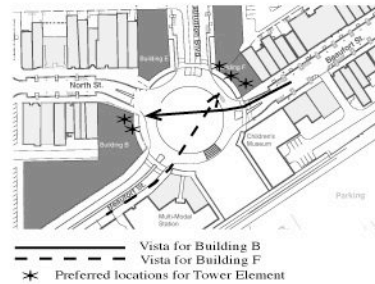
Tower may be oriented to the left, center, or right side of a street facade located on the Circle, based on the vista from the radial street opposite the building. When no vista is prominent, tower may be oriented to left, center, or right.

### Dimensions

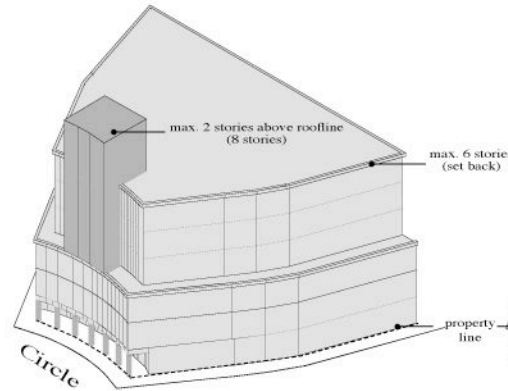
Tower may be a maximum of 30 feet wide and 30 feet deep.

### Height

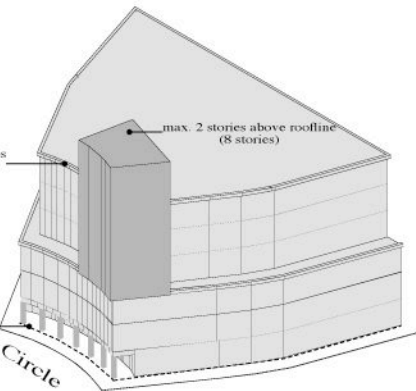
Tower may be a maximum of two stories above roofline, but no more than eight stories tall. Tower may not be located below the third story of a building.



Left Orientation of Tower



Center Orientation of Tower



Right Orientation of Tower

### Sample Building: View from Circle

Orientation of tower may be to left, center, or right, depending on the vista, refer to plan, above.

Draft

GENERAL GUIDELINES 7



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# Build-To Lines Instead of Setbacks



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## #6 Change:

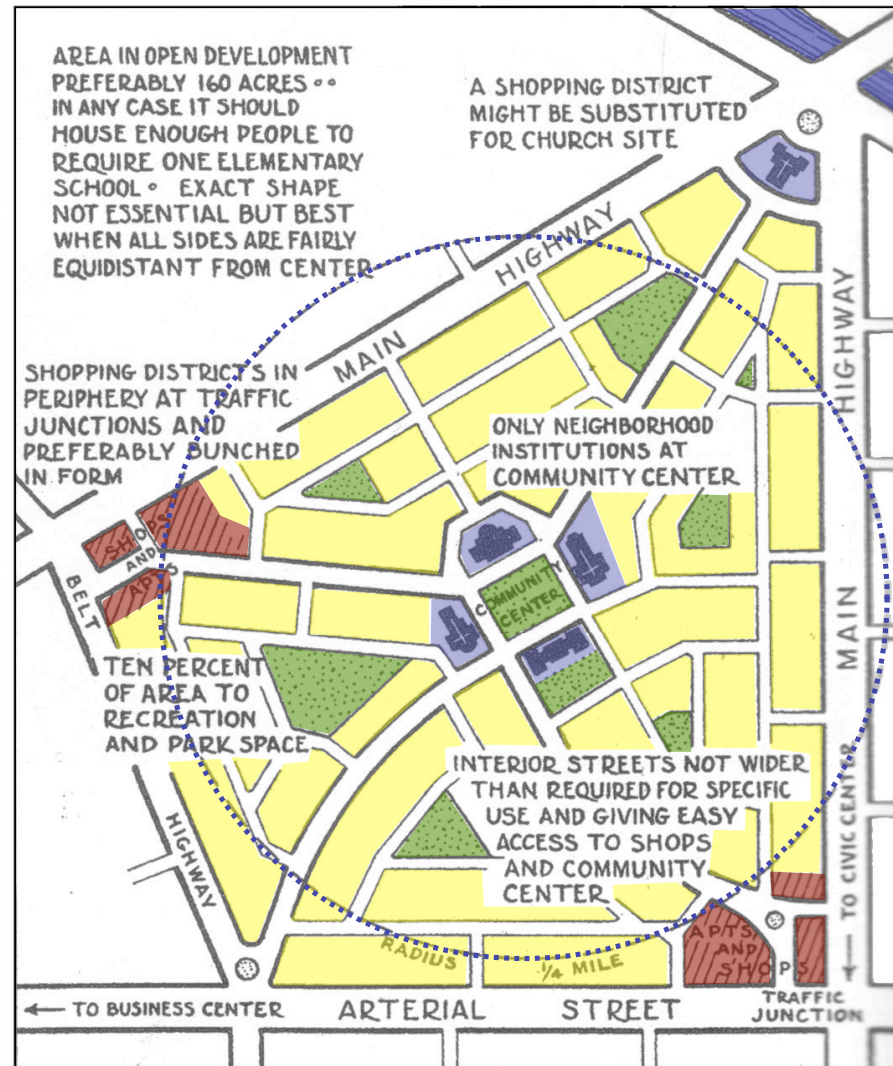
Expect continuous evolution in the integration of high performance buildings and infrastructure.



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# Ideal Neighborhood Plan



- Transit
- Storm water
- Sewage
- Heat island
- Power
- Food
- “Green” Infrastructure



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# Stormwater Detention & Filtration

Chicago Center for Green Technology



Detention Area



Bioswale



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# Stormwater Filtration and Detention

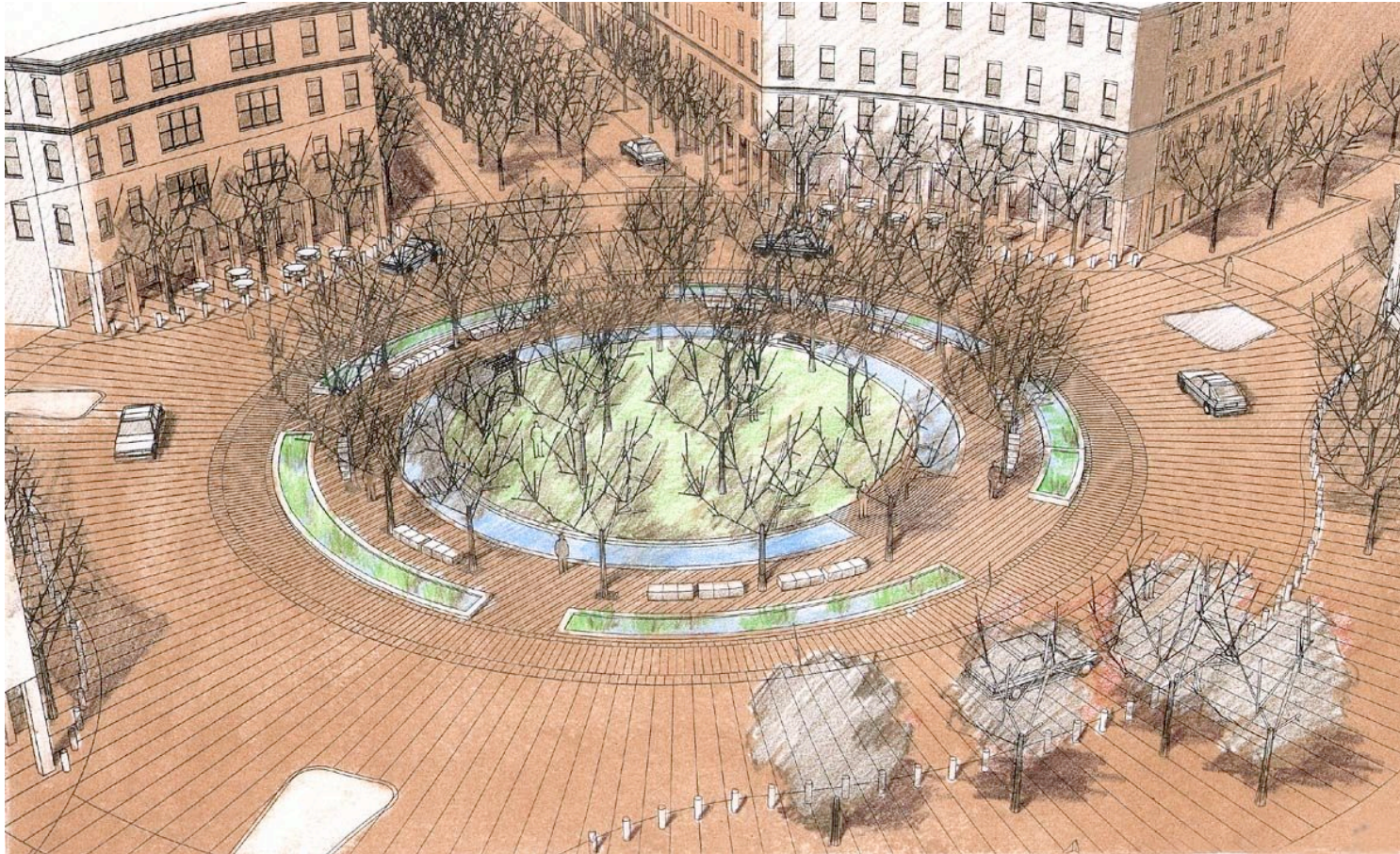


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# Normal, Illinois



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# Normal, Illinois



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# Whistler Crossing - Catenary Lighting



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# Whistler Crossing - Catenary Lighting



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# The Future of Infrastructure?

	Current Practice	2030 Sustainable Urbanist Ideals
Public Expectations	Outdoor Brightness	Outdoor Darkness
Light Level Regulations	Minimums	Maximums
Control Technology	On-Off	Addressable Ballasts allow Night time Dimming
Control	Municipal	Block and Neighborhood
Roadway Lighting	Pole Mounted	Built into Roadway Fabric
Human Links to Nature	Glare obscures all but a handful of stars	Milky way visible across North America



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#7 Change:  
Design for  
The 2030 Community Challenge

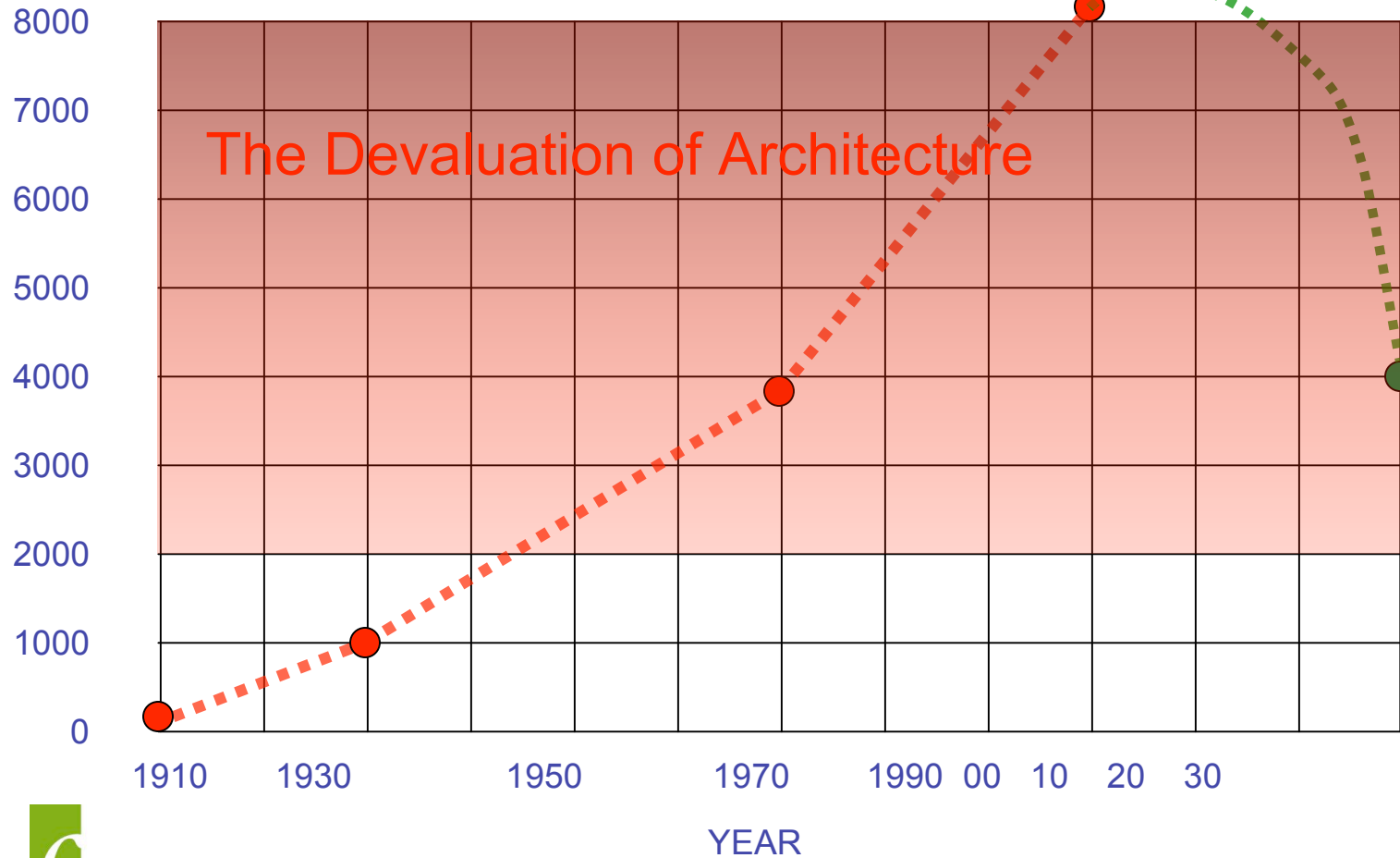


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# 2030 Community Challenge

Per Capita Vehicle Miles Travelled



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# 2030 Community Challenge

Per capita Vehicle Miles Traveled	Year	
100%	8000	2005
90%	7200	2010
80%	6400	2015
70%	5600	2020
60%	4800	2025
50%	4000	2030*

**\*Roughly 1970 levels**



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Thank you

Sustainable Urbanism:  
Urban Design with Nature

Published by John Wiley, October 2007



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