

# The Regent

950 North Glebe Road  
Arlington, Virginia



COOPER CARRY



THE JBG COMPANIES



# Why Go Green?



COOPER CARRY



THE JBG COMPANIES

# Commercial Sector Energy Consumption

Buildings Energy Data Book: 1.1 Buildings Sector Energy Consumption

October 2009

## 1.1.3 Buildings Share of U.S. Primary Energy Consumption (Percent)

	Buildings			Industry	Transportation	Total	Total Consumption (quads)
	Residential	Commercial	Total				
2000	21.1%	17.7%	38.8%	36.1%	25.2%	100%	97.2
2001	20.7%	17.6%	38.3%	36.3%	25.4%	100%	97.5
2002	21.2%	17.7%	38.9%	35.4%	25.6%	100%	98.5
2003	21.4%	17.5%	38.9%	35.0%	26.1%	100%	99.4
2004	21.2%	17.7%	38.9%	34.6%	26.5%	100%	100.1
2005	22.0%	18.2%	40.2%	33.2%	26.6%	100%	98.7
2006	20.9%	18.0%	38.9%	32.7%	28.4%	100%	99.5
2007	21.4%	18.2%	39.6%	32.2%	28.2%	100%	101.4
2008	21.5%	18.2%	39.7%	32.5%	27.9%	100%	102.3
2009	21.7%	18.2%	39.9%	32.0%	28.1%	100%	102.2

Note(s): 1) Renewables are not included in the 1980 data.

Source(s): EIA, State Energy Data 2005: Consumption, February 2008, Tables 8-12, p. 18-22 for 1980-2005; and EIA, Annual Energy Outlook 2008, Mar. 2008, Table A2, p. 117-119 for 2006-2030 data and Table A17, p. 143-144 for non-marketed renewable energy.





# Commercial Sector Energy Consumption by Type

Buildings Energy Data Book: 3.1 Commercial Sector Energy Consumption

October 2009

## 3.1.1 Commercial Primary Energy Consumption, by Year and Fuel Type (Quadrillion Btu and Percent of Total)

	Natural Gas		Petroleum (1)		Coal		Renewable(2)		Electricity		Total		Total(2)	Growth Rate 2006-Year
	Sales	Losses	Sales	Losses	Sales	Losses	Sales	Losses	Sales	Losses				
2000	3.25	18.9%	0.76	4.4%	0.09	0.5%	0.13	0.7%	3.96	9.00	12.96	75.4%	17.18	-
2001	3.11	18.1%	0.74	4.3%	0.09	0.5%	0.11	0.7%	4.06	9.10	13.16	76.5%	17.21	-
2002	3.22	18.5%	0.68	3.9%	0.09	0.5%	0.12	0.7%	4.11	9.21	13.32	76.4%	17.43	-
2003	3.29	18.9%	0.77	4.4%	0.08	0.5%	0.13	0.7%	4.09	9.07	13.16	75.5%	17.44	-
2004	3.20	18.0%	0.75	4.2%	0.10	0.6%	0.14	0.8%	4.20	9.33	13.53	76.4%	17.72	-
2005	3.09	17.2%	0.72	4.0%	0.09	0.5%	0.14	0.8%	4.35	9.56	13.91	77.5%	17.95	-
<b>2006</b>	<b>2.92</b>	<b>16.3%</b>	<b>0.68</b>	<b>3.8%</b>	<b>0.08</b>	<b>0.5%</b>	<b>0.16</b>	<b>0.9%</b>	<b>4.43</b>	<b>9.66</b>	<b>14.09</b>	<b>78.6%</b>	<b>17.93</b>	<b>-</b>
2007	3.11	16.8%	0.68	3.7%	0.07	0.4%	0.16	0.8%	4.58	9.90	14.48	78.3%	18.49	3.1%
2008	3.15	16.9%	0.69	3.7%	0.09	0.5%	0.16	0.8%	4.62	9.94	14.55	78.1%	18.63	1.9%
2009	3.04	16.3%	0.63	3.4%	0.08	0.4%	0.16	0.8%	4.67	10.04	14.71	79.0%	18.61	1.3%

Note(s): 1) Petroleum includes distillate and residual fuels, liquefied petroleum gas, kerosene, and motor gasoline. 2) Includes site-marketed and non-marketed renewable energy. 3) 2006 site-to-source electricity conversion = 3.18.

Source(s): EIA, State Energy Data 2005: Consumption, Feb. 2008, Tables 8-12, p. 18-22 for 1980-2005; and EIA, Annual Energy Outlook 2008, Mar. 2008, Table A2, p. 117-119 for 2006-2030 and Table A17, p. 143-144 for non-marketed renewable energy.



COOPER CARRY



THE JBG COMPANIES

# USGBC – LEED

USGBC Started in 1993

LEED Green Building Rating System Started in 2000

Practical, Marketwide Implementation began in 2002/2003



COOPER CARRY



THE JBG COMPANIES



# The State of the Building Industry When 950 North Glebe Was Designed in 2003

- USBGC/LEED largely an unknown commodity
- New Discipline within A & E firms
- New field of consultancy, beginning – Green Consultant
- Little GC & Subcontractor knowledge of LEED
- Little knowledge within development community
- Very little (if any) regulatory oversight

Result: Fear...Hesitancy...Unknown Cost/Schedule Implications



COOPER CARRY



THE JBG COMPANIES

# Where Are We Today?

- USGBC/LEED has grown tremendously and is now widely accepted
- Jurisdictions are mandating LEED
- Developers, A&E firms, “Green” Consultants all fluent in LEED Design (JBG now has 37 projects either certified or in-process of certification and an in-house “GREEN TEAM”)
- GC’s and subcontractors have in-house LEED expertise
- Product options have grown exponentially
- Tenant/End user awareness of sustainability issues is high

Result: Accepted Practice...Expected in New Construction



COOPER CARRY



THE JBG COMPANIES



# Cost Premiums of LEED for Office Buildings

Based on JBG experience and polling of 4 major GC's:

## Hard Cost Premium

<u>Level</u>	<u>Low</u>	<u>High</u>
Certified/Silver	0-1%	3%
Gold	2-5%	12.5%
Platinum	5%	15%

Note: LEED Consultant Costs in Addition to Above



COOPER CARRY



THE JBG COMPANIES



# Are Tenants Willing to Pay for LEED?

## Survey of 5 Prominent Brokers Who Say...

- Every tenant is different and economic conditions matter
- Corporate HQ, not for profits – more focused on LEED and will incorporate into their facilities
- Private sector greatly influenced by economy:
  - Law firms
  - Investment fund example
  - Gold building delivered in late '06 example
  - LEED TI
- GSA Requires it...so YES!
- Practically LEED = Class A so tenants inherently paying for it.
- Full Service vs. NNN lease structure matters (brokers can educate tenants)
- Class B tenants vs. Not LEED conscious...only price sensitive
- Green Leases



COOPER CARRY



THE JBG COMPANIES

# Do Investors Pay for LEED?

- Yes. LEED buildings will result in lower operating expenses, higher NOI's and therefore higher sale prices at the same exit cap rates.
  - \$0.25/RSF higher NOI at a 7% cap rate = \$3.57/RSF of sales value.
- Yes. Investors do not want to own an obsolete building and at some point non-LEED buildings will obsolete. “Non LEED buildings will become conspicuous by lack of certification.”





# The Regent

950 North Glebe Road  
Arlington, Virginia



THE JBG COMPANIES



COOPER CARRY



TERRALOGOS  
ECO ARCHITECTURE, PC

**structura**  
an engineering collaborative

30 YEARS  
VIA

**TOLK, Inc.**  
Consulting Engineers

PARKER RODRIGUEZ



COOPER CARRY



THE JBG COMPANIES

# The Regent

950 North Glebe Road  
Arlington, Virginia

01/2003 Entitlements / Schematic Design Began

01/2004 Design Documents Start

01/2005 Construction Start

03/2007 Certificate of Substantial Completion

07/2007 Applied for LEED Certification

10/2008 USGBC Decision on Certification

12 Stories – 11 Office / 1 Retail

263,000 GFA + 156,000 below grade parking

471 Parking Spaces in 3 stories below grade

20 Parking Spaces on site

\$35M Hard Cost – includes below grade



COOPER CARRY



THE JBG COMPANIES





950 N GLEBE  
ROAD SITE



COOPER CARRY



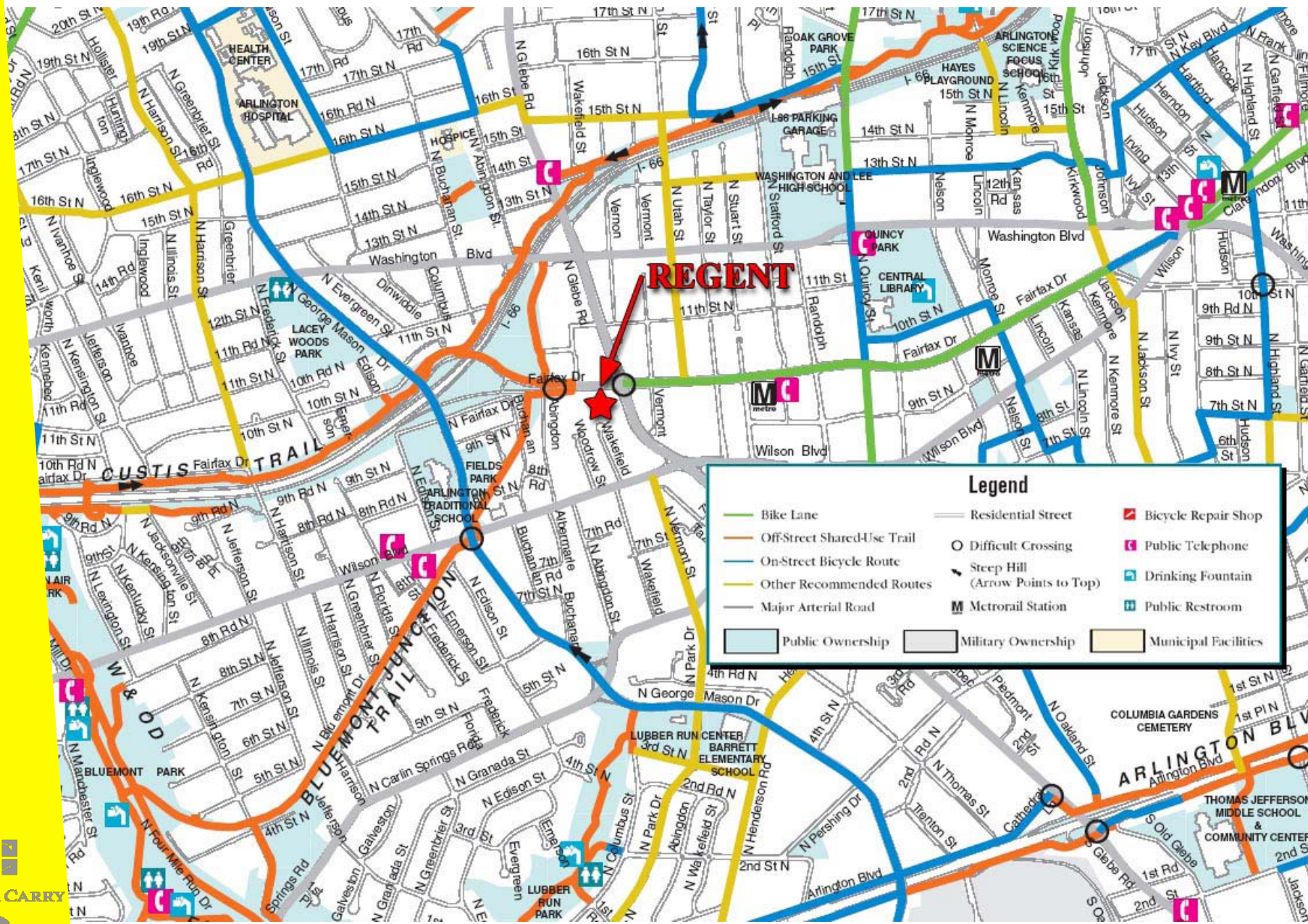
THE JBG COMPANIES



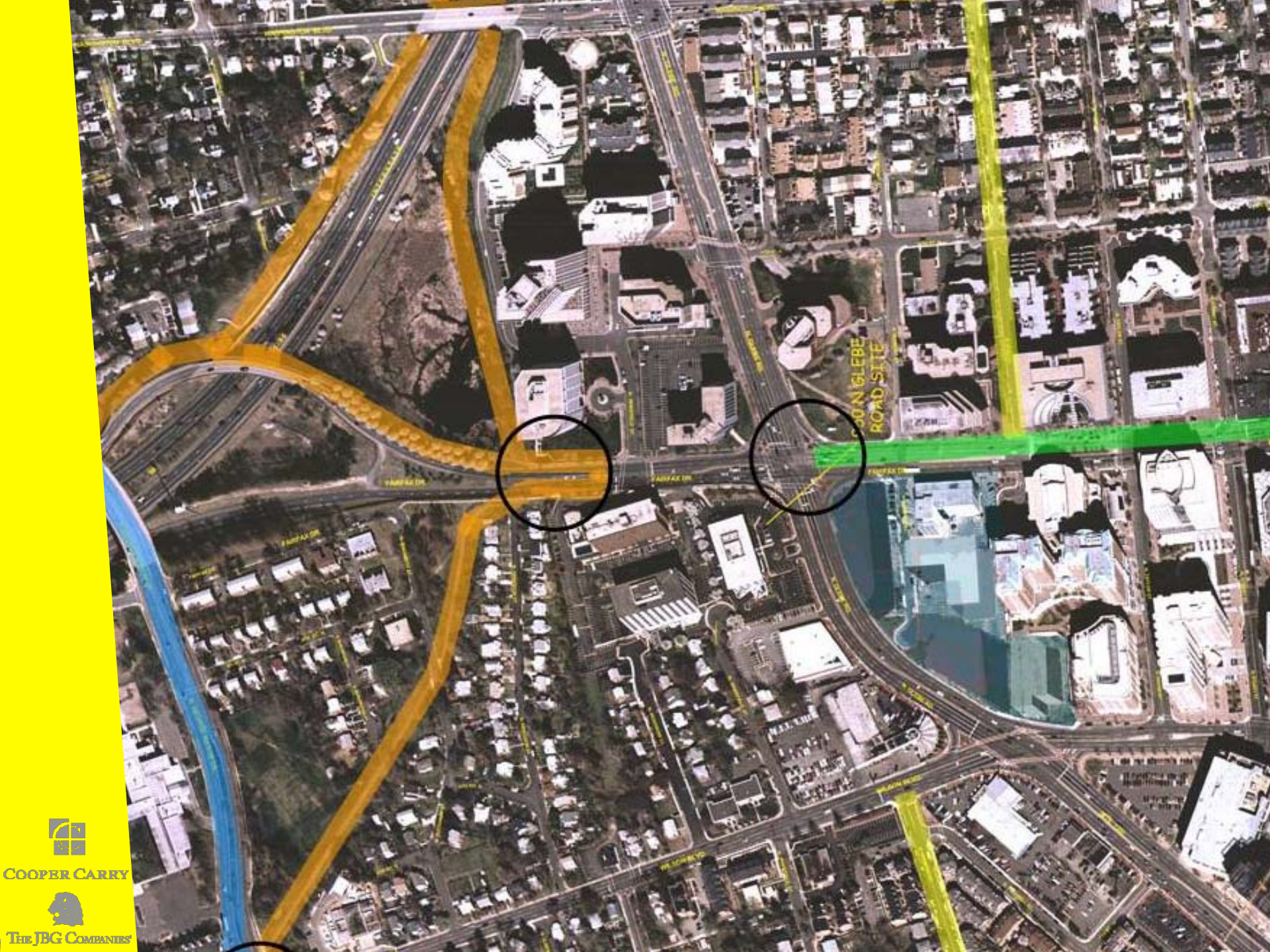
# REGENT

### Legend

	Bike Lane		Residential Street		Bicycle Repair Shop
	Off-Street Shared-Use Trail		Difficult Crossing		Public Telephone
	On-Street Bicycle Route		Steep Hill (Arrow Points to Top)		Drinking Fountain
	Other Recommended Routes		Metrorail Station		Public Restroom
	Public Ownership		Military Ownership		Municipal Facilities







COOPER CARRY



THE JBG COMPANIES



FAIRFAX DR.

FAIRFAX

N. GLEBE RD.

N. WAKEFIELD





COOPER CARRY



THE JBG COMPANIES



COOPER CARRY



THE JBG COMPANIES





50 feet 20 m





950 NORTH GLEBE



COOPER CARRY



THE JBG COMPANIES





COOPER CARRY



THE JBG COMPANIES



# Sustainable Sites/ Innovation in Design

- Heat Island
- Used LEED-ND credit language to support two ID narratives
- Access to mass-transit, zip car
- Transportation Demand Management Plan
- Incentives to use mass transit

Today:

Still target similar credits

LEED 2009 - Sites / Urban Connectivity is heavily weighted  
In the DC area: Sustainable Sites can make up  
half of Regionalization Credits



COOPER CARRY

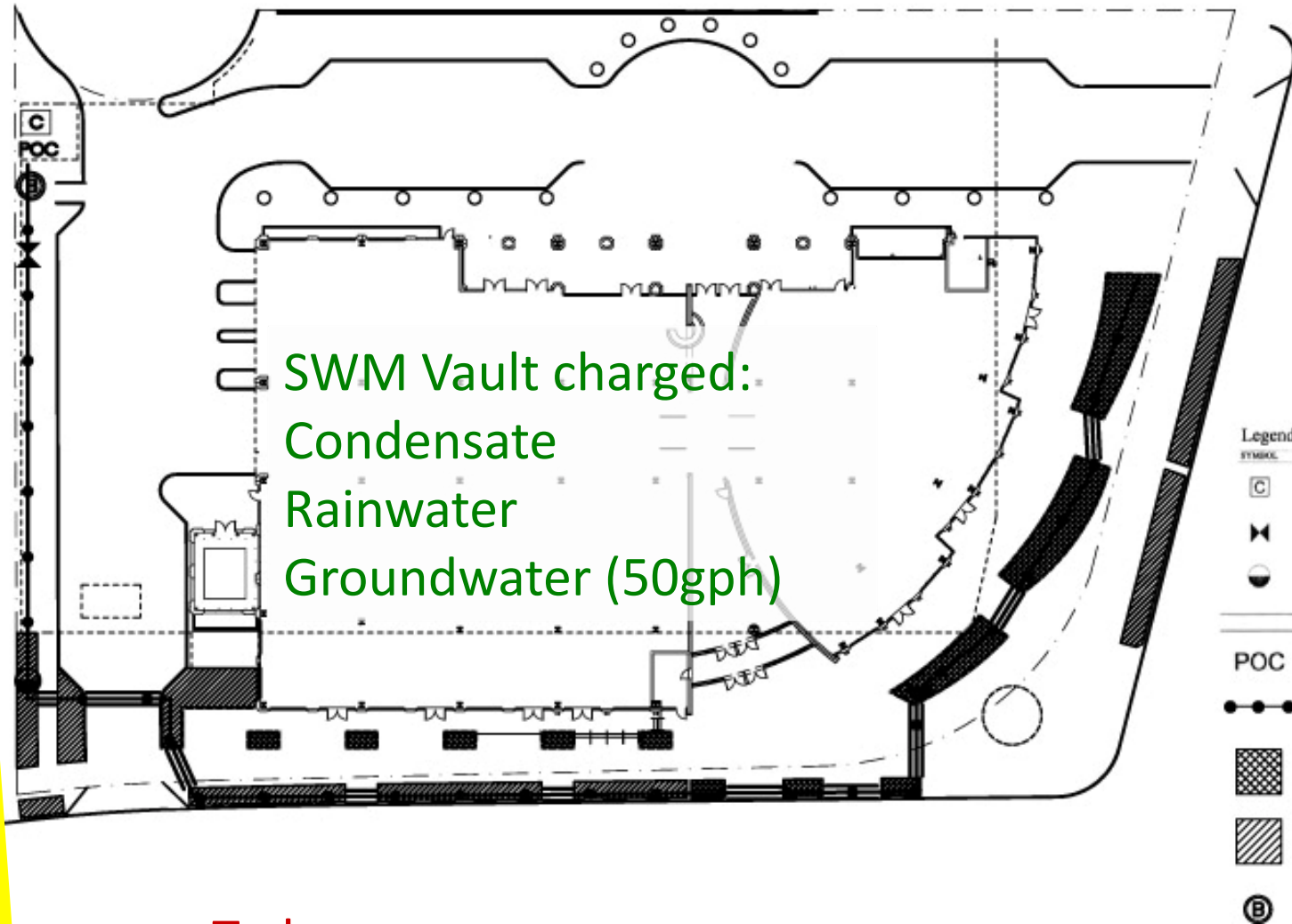


THE JBG COMPANIES



# Water Savings

No potable water - irrigation



Today:  
Continue to use this approach



COOPER CARRY



THE JBG COMPANIES



# Water Savings

37% Water Use Reduction



- Low-flow lavatories (.5)
- Automatic controls
- Dual-flush toilets (1.6/.8)
- Low-flow toilets (1.1)
- Low-flow showers (1.8)

~~Dual Flush by Caroma~~

Today:  
Waterless Urinals  
Low-Flows  
may achieve  
40%(+) Reduction



COOPER CARRY



THE JBG COMPANIES



# Energy Savings

40% better than ASHRAE 90.1-1999

Glazing:  
VE1-2M  
VRE 1-59



COOPER CARRY



THE JBG COMPANIES



# Energy Savings

40% better than ASHRAE 90.1-1999

- Conditioned by High Efficiency Chilled Water System
- Centralized Water Chilling Units
- Low temperature air distribution on a floor by basis
- Chilled water plant operates over an 18 degree temp diff vs. traditional 12 or 14 degrees – reduces pumping energy
- Air handling units deliver 46 degree air vs. traditional 52-55 degrees – reduces horsepower/energy
- Central Plant delivers cooling with 3 pumps vs. traditional CP with 6 pumps
- Cooling Towers operate at differential of 15 degrees vs. traditional at 10 degrees – 2/3 pumping energy



COOPER CARRY



THE JBG COMPANIES

## Equates to:

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

- 300 Cars off the road / year
- Saves over 3,600 barrels of oil
- CO2 Emissions from 20 tanker trucks worth of gasoline
- Carbon sequestered by over 40,000 tree seedlings grown for 10 years
- CO2 emissions from over 65,000 propane cylinders used for home barbeques





35	29	<b>Total Project Score</b>	Possible Points <b>69</b>			
----	----	----------------------------	---------------------------	--	--	--

Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

8	6	<b>Sustainable Sites</b>		Possible Points	14
Y	?	N			
Y			Prereq 1		
1			Credit 1		1
1			Credit 2		1
	1		Credit 3		1
1			Credit 4.1		1
1			Credit 4.2		1
	1		Credit 4.3		1
1			Credit 4.4		1
	1		Credit 5.1		1
1			Credit 5.2		1
	1		Credit 6.1		1
	1		Credit 6.2		1
1			Credit 7.1		1
1			Credit 7.2		1
	1		Credit 8		1

5	8	<b>Materials &amp; Resources</b>		Possible Points	13
Y	?	N			
Y			Prereq 1		
	1		Credit 1.1		1
	1		Credit 1.2		1
	1		Credit 1.3		1
1			Credit 2.1		1
	1		Credit 2.2		1
	1		Credit 3.1		1
	1		Credit 3.2		1
1			Credit 4.1		1
1			Credit 4.2		1
1			Credit 5.1		1
1			Credit 5.2		1
	1		Credit 6		1
	1		Credit 7		1

4	1	<b>Water Efficiency</b>		Possible Points	5
Y	?	N			
1			Credit 1.1		1
1			Credit 1.2		1
	1		Credit 2		1
1			Credit 3.1		1
1			Credit 3.2		1

11	4	<b>Indoor Environmental Quality</b>		Possible Points	15
Y	?	N			
Y			Prereq 1		
Y			Prereq 2		
1			Credit 1		1
1			Credit 2		1
1			Credit 3.1		1
	1		Credit 3.2		1
1			Credit 4.1		1
1			Credit 4.2		1
1			Credit 4.3		1
	1		Credit 4.4		1
1			Credit 5		1
	1		Credit 6.1		1
	1		Credit 6.2		1
1			Credit 7.1		1
1			Credit 7.2		1
1			Credit 8.1		1
1			Credit 8.2		1

2	10	<b>Energy &amp; Atmosphere</b>		Possible Points	17
Y	?	N			
Y			Prereq 1		
Y			Prereq 2		
Y			Prereq 3		
	1		Credit 1.1		2
	1		Credit 1.2		2
	1		Credit 1.3		2
	1		Credit 1.4		2
	1		Credit 1.5		2
	1		Credit 2.1		1
	1		Credit 2.2		1
	1		Credit 2.3		1
	1		Credit 3		1
1			Credit 4		1
	1		Credit 5		1
1			Credit 6		1

5	<b>Innovation &amp; Design Process</b>		Possible Points	5
Y	?	N		
1			Credit 1.1	1
1			Credit 1.2	1
1			Credit 1.3	1
1			Credit 1.4	1
1			Credit 2	1





Alas...



950 NORTH GLEBE



COOPER CARRY



THE JBG COMPANIES



# The Regent

950 North Glebe Road  
Arlington, Virginia

## Lessons Learned:

GC to submit a LEED Action Plan at start of construction

Submit Design Credits first – more time to defend

Submit for more credits than you need

Find a way to streamline Daylight/Views credits

## Today:

LEED is constantly changing – Building Codes aligning

With LEED v3 the credits are similar – but weightings have shifted

Many credits are easier to achieve due to Industry response

to provide LEED related services (CWM / Materials)

Software available to help document LEED credits



COOPER CARRY



THE JBG COMPANIES