



ENVISION:CHARLOTTE
UNITING FOR A SUSTAINABLE CITY

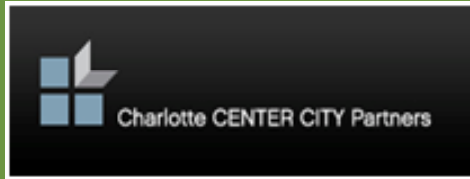
Tom Shircliff
Chairman, Envision Charlotte

(Managing Partner - Intelligent Buildings, LLC - tom@intelligentbuildings.com)



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History and The Big Idea



- CCCP adding sustainability to 10 year planning process
- Wanted it to be very measurable and business-like
- **BIG IDEA**: Why not plug in every building in uptown and measure energy as one number in real time?

“Can you do that?”



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Yes you can!



68 buildings ALL connected:
- Digital meters
- Cloud
- Touch Screens

Duke Energy | Smart Energy NowSM | 4504 PEOPLE PARTICIPATING

Home | What's My Energy Footprint? | Meet Your Uptown Energy Champions | About the Program | The Blog

Live! Uptown Energy Usage

Live Energy Info

396,884,591

Total Watt-Hours Consumed Today

Watts | Cars | Homes

Leaderboard

No. of Energy Efficiency actions

1	gcorrin	80
2	J4.9er	54
3	CLT_Rocks	51
4	S_Abbott	46
5	Heidi	38
6	jbowen	37
7	Darci	28
8	Nicole	26
9	asuirish121	26
10	Lauren	25

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This concept got us on the big stage.

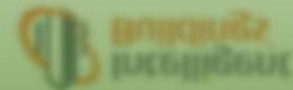
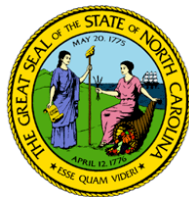




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...and Inspired a Formal Partnership

Government, NGO, Academia, Economic Development, Business



ders



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Vision

Envision: Charlotte is a unique public-private collaboration that is leading Charlotte to become a global model for environmental sustainability that promotes economic development.



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Mission

Envision: Charlotte will develop programs, measure all activity and leverage regional strengths:



1. **Model Programs** - Make the center city a living laboratory to foster innovation and first-of-their kind programs in energy, water, air and waste that can be scaled and replicated in other communities.



2. **Detailed Measurements** - Measure and document qualified efforts that simultaneously improve the environment, the business conditions and the overall quality of life in communities.



3. **Regional Strengths** - Leverage our strengths and accomplishments in the energy sector and build on our history of cooperation between corporate-citizens, academia and government.



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Different from Other Organizations

- ✓ **Geography** ...only a sub-market at a time and inside a hard loop
- ✓ **Use-types** ...energy program is only for commercial office
- ✓ **Measurement** ...hard wired, data base, analytics, displays
- ✓ **Business community involvement** ...98% signed contractually so far
- ✓ **Focus on reality** ...base approach is not a demonstration
- ✓ **Focus on solution provider value** ...quickly create a new global business model



Next Steps



Additional Model Programs

- Water (connect, measure and aggregate)
- Air (Electric Vehicles Program)
- Waste ("connect", measure and aggregate)

Policy and Research



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What they're saying..

“...reduce energy use 430MM kWh and 220,000 metric tons of CO2 ...and pay for itself with lower utility bills ...sounds like a pretty good deal to me”

President, Bill Clinton



“With Envision Charlotte we can completely transform a city... suddenly we see a model for the rest of the nation and the rest of the world”

John Chambers, CEO Cisco

“Charlotte’s uptown within the I-277 loop is a highly concentrated urban area that provides an excellent site to demonstrate what is possible with advanced energy efficiency and smart grid technologies.”

Jim Rogers, CEO Duke Energy

“Its amazing to me how technology is changing so many industries...”

Maria Bartiromo, CNBC

“Envision: Charlotte is different from every other smart grid initiative because its focused and manageable, measurable, and collaborative.”

William Pentland, Forbes



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Envisioning Charlotte as the Energy Capital: Sustainability for the Sake of Economic Development





WORLD GREEN BUILDING COUNCIL

www.worldgbc.org

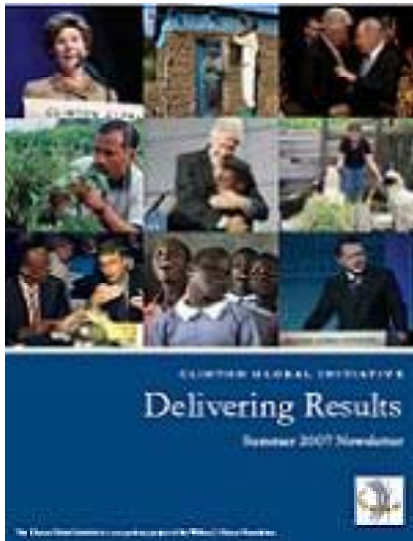
- Green Building Council Australia
- Canada Green Building Council
- Japan Sustainable Building Consortium
- New Zealand Building Council
- Emirates Green Building Council
- U.S. Green Building Council
- Green Building Council do Brasil
- Indian Green Building Council
- Mexico Green Building Council
- Taiwan Green Building Council
- United Kingdom Green Building Council
- Germany Sustainable Building Council



DGNB
Deutsche Gesellschaft für nachhaltiges Bauen e.V.
German Sustainable Building Council

www.ClintonGlobalInitiative.org

All CGI members are asked to **define and pursue a new, specific, and measurable approach to a global challenge**. Making a commitment is a responsibility of membership, and CGI members determine the focus and scope of their commitments.



CGI COMMITMENTS TO ACTION

EDUCATION

ENERGY &
CLIMATE CHANGE

GLOBAL HEALTH

POVERTY
ALLEVIATION



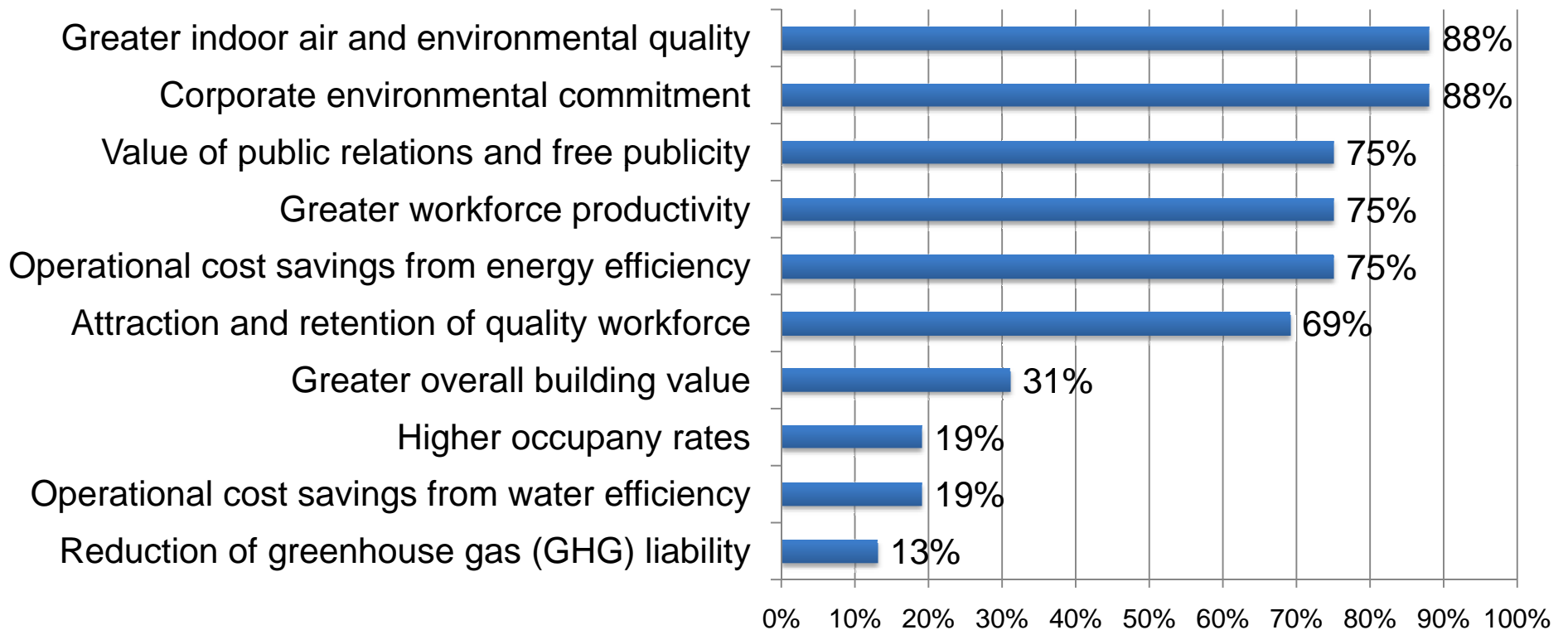
“CGI is a global movement where every word spoken, every partnership discovered, and every promise made can have a direct impact on the lives of millions of people across our planet for generations to come.”

– Nelson Mandela, Former President of the Republic of South Africa

The dollars and sense of green retrofits

Sooner is better than later, and it could cost less than you think

A joint study by Deloitte and Charles Lockwood



Motives for undergoing a green retrofit (survey responses - 2007)

POTENTIAL BENEFITS OF GREEN BUILDINGS

May be realized by:

- Occupants
- Tenant, employees, customers, guests
- Non-occupant owner
- Landlord, investor, lender
- Nearby property owners
- Community
- Society
- Ecosystem

Contribute to triple bottom line:

- Economic
- Environment
- Social



People, planet, profit!

INVESTMENT HYPOTHESIS: WHAT TO LOOK FOR

1. Higher rents
2. Lower operating expense (less risk)
3. Faster absorption
4. Lower tenant turnover
5. Lower risks
6. Higher value
7. Recovery of added costs



MYTH-BUSTING

The commonly held belief that green building necessitated higher costs has proven a false assumption, as design and building professionals, together with product manufacturers, have found ways to achieve savings in up-front costs.



RSMeans - Introduction

[Green Building: Project Planning & Cost Estimating](#)

The 2009 Ernst & Young business risk report Real Estate

1. Continued uncertainty and impact of the credit crunch
2. Global economic and market fluctuations
3. Impact of aging or inadequate **infrastructure**
4. Global war for **talent**
5. Changing **demographics**
6. Inability to find and exploit global and **non-traditional opportunities**
7. Pricing uncertainty
8. **Green revolution, sustainability and climate change**
9. Economic vulnerability and regulatory risks in developing markets
10. **Volatile energy costs**

The top 10 business risks