

A City at Work

a report for the Barr Foundation on Boston's Green Ribbon Commission

by Dave Denison

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A City at Work was produced by the Barr Foundation. Dave Denison, a former editor of Boston-based Commonwealth magazine, is an independent writer who specializes in governmental reporting.



I. Introduction: A Rising Tide

On a Tuesday morning in early February of 2013, some of Boston's most prominent civic leaders, including the mayor and leading developers and activists involved with harbor-front concerns, gathered in the spacious lobby of the IMAX Theater, just adjacent to the New England Aquarium. They weren't there for tickets to the upcoming 3-D movie "The Last Reef – Cities Beneath the Sea" – yet the subtitle of that documentary was almost fitting. The feature presentation this morning was a press conference to discuss Boston's plans to prepare for rising sea levels and severe storms.

As people filtered in, cameras from three of Boston's commercial television news crews, as well as the New England Cable News network, were set up in the middle of the room. Through the floor-to-ceiling windows on the east side of the lobby you could see the concrete hull of the Aquarium and the waters of Boston Harbor lapping up against it. Mayor Thomas Menino would soon step up to call attention to a new report by the Boston Harbor Association entitled "Preparing for the Rising Tide."

By the time Mayor Menino spoke, the room was crowded with a cross-section of

business executives, city officials, environmental activists, and leaders in the nonprofit and philanthropic sector. Introducing the mayor was Brian Swett, head of the City's Energy and Environment Services office. To the mayor's right was Vivien Li, executive director of Boston Harbor Association. Seated behind the lectern was Bryan Koop, Senior Vice-President of Boston Properties, a major real estate developer in New York and Boston; and David Storto, president of Spaulding Rehabilitation Network, part of the Partners HealthCare group.



Press filling the lobby of the New England Aquarium's IMAX Theatre (Photo by City of Boston)

For the newspaper, television, and radio reporters this was a straightforward story, to be organized around the Harbor Association's findings that climate change and rising sea levels are likely to cause significant flooding along Boston's waterfront and in many urban neighborhoods and commercial districts. In fact, as several speakers noted, if the "superstorm" that hit New York and New Jersey in late October of 2012 had arrived in Boston five-and-a-half hours earlier at high tide, Boston would have experienced a "100-year flood." About 6.6 percent of the city's land would have been inundated, according to the Harbor Association's report.

Yet there was a broader story that could be told about this event. Part of its significance was that it was not unusual – quite the opposite. Cross-sectional meetings like this one, involving the city's top governmental, corporate, and philanthropic leaders coming together to plan immediate steps toward the "greening" of the city are taking place all the

time. Many of the most prominent people in the IMAX lobby on this February morning, including presenters Brian Swett, Vivien Li, and Bryan Koop, are active in the city's Green Ribbon Commission, a self-organized committee of CEOs and others who are dedicated to supporting Boston's official climate action plan, which sets aggressive goals for reducing greenhouse gas emissions. One could make an elaborate "network map" showing the connections between the different leaders and institutions in the room. Mayor Menino's shorthand was to refer to the climate change project as "the biggest team effort in our city's history." And, he added, "Our Green Ribbon Commission is out there, leading the way."

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This is not the kind of story the mainstream media knows how to tell. It involves "power brokers," but they're not acting out of narrow self-interest. It involves behind-the-scenes planning that could dramatically alter the city, but much of that planning has to do with complex technical matters of engineering and energy efficiency. And, it involves a hybrid form of political leadership – it's not just a government story or a business story or a "third sector" story. It's all three. Boston's Green Ribbon Commission (GRC) grew out of a municipal government initiative to address climate change. It took form when the Barr Foundation, one of New England's largest family foundations, joined with Mayor Menino to support that initiative. The Barr Foundation enlisted the financial support of six other foundations to support the work of the Commission. And Menino and Barr lined up more than 30 top executives in real estate, health care, higher education, and finance to sit on the GRC.

In a nation that has become accustomed to political polarization, gridlock, and government dysfunction, the story of Boston's efforts to activate a wide-ranging and powerful network to work toward a common goal deserves a wide audience. The story is all the more important because it is geared toward something government – or perhaps the citizenry in general – is not good at: taking action in advance of a problem that can seem amorphous and distant, requiring investment now to benefit future generations. Government specializes in after-the-fact responses – long-range planning usually means looking to the end of the current fiscal year.

Working on climate change is a higher-order challenge. Boston's Green Ribbon Commission focuses a city on goals for the year 2020 and 2050. This report examines the origins of this approach, with an eye toward understanding what makes it work,



Mayor Thomas M. Menino announces new initiatives to better prepare Boston for Hurricane Sandy-like storms and other effects of climate change (Photo by City of Boston)

what kind of challenges the GRC has encountered, and what lessons it holds for other cities inspired to adopt similar approaches.

II. Origins of the Green Ribbon Commission

The story of Boston’s response to climate change over the recent decade is one of parallel concerns – among activists, city and state officials, and foundation leaders – that gradually began to intersect. The City of Boston joined an international Cities for Climate Protection Campaign in 2000, in which the City pledged to develop a local action plan to reduce greenhouse gas (GHG) emissions. In April of 2007, Mayor Menino signed an executive order setting goals for municipal buildings to reduce energy use. In December of that year, the City released its first Climate Action Plan, which proposed a task force to set goals for community-wide GHG reductions. Another major development followed: the Massachusetts legislature passed the Green Communities Act of 2008, which tripled the amount spent by utility-administered energy efficiency programs.

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Pat Brandes, Barr Foundation

In that same year, the Barr Foundation began to review its environmental programs. Pat Brandes, Barr’s executive director, in a conversation in her office in the Pilot House at Boston’s historic Lewis Wharf, reflected on the role philanthropists played in joining city and state efforts to reduce energy use and emissions.

“Knowing that we’ve got some willing partners in terms of the city and the state,” she said, the question was: “What could a foundation do?”

Looking at other government-led efforts around the country to change energy policies, it was apparent, Brandes said, that “lots of places were doing fabulous plans, but it was all about how do you get those plans implemented.” Barr staffers and research partners took note of an effort in Chicago to set up a commission of civic leaders to serve as “an accountability partner” for the City in its efforts to conserve energy. In meetings with Adele Simmons, a leading Chicago philanthropist, Barr learned more about the Chicago effort, and then began thinking about ways to adapt it to Boston.

“We had the Chicago model in our minds,” Brandes said. “There was an appetite here at the foundation to try to create such a thing.” But with a twist: The Chicago commission involved business managers with technical expertise, but not top executives of major interests. The hunch at Barr was that leaders at the CEO level would give a commission more heft.

Meanwhile, seeking to broaden community involvement in the climate change issue, Menino set up a Climate Action Leadership Committee and a Community Advisory Committee in 2009, directing the groups to recommend further action within the year. That led to a committee report in April 2010 that established the City's medium- and long-term goals: a 25 percent reduction in GHG emissions by 2020 and an 80 percent reduction by 2050.

It was that 2010 report of the Climate Action Leadership Committee that recommended "a commission that brings together leaders from all segments of the community" to help evaluate and coordinate the City's plans to address climate change. In the same months in early 2010 that report was being prepared, a separate development was taking place: the Barr Foundation went public in February with an announcement that it would devote \$50 million to local efforts related to climate change.

It was shortly after that when Pat Brandes and Amos Hostetter, co-founder and trustee of the Barr Foundation, met with the mayor in his City Hall office to discuss the idea of a Green Ribbon Commission, and to go over lists of prospective leaders they might wish to enlist. "We brought over a list," Brandes said, "we negotiated names, and came up with what we thought were the right people in town" to represent important businesses, as well as civic leadership.

Afterward, Menino, Hostetter, and Brandes made phone calls to leaders (so did Jim Hunt, then the Mayor's Chief of Environmental and Energy Services). Calls were followed by formal letters of invitation, and by the summer of 2010 the Green Ribbon Commission was taking shape. The Barr Foundation hired John Cleveland, a veteran organizer and strategy consultant with extensive ties in both the environmental and business communities in New England, to serve as the GRC's executive director. (Cleveland had worked as a consultant with Barr on several projects, including the decision to direct all its environmental grantmaking toward climate change.) The Commission held its first meeting in November of 2010, in a 36th floor conference room of the Bank of America building in downtown Boston.



John Cleveland facilitating a meeting of the GRC (Photo by Richard Howard)

One of the key ideas behind the GRC, as Brandes explains it, was to create an entity that was integrated with government leaders, but separate from it, as well. "We felt that in Boston we needed to make sure there was civic leadership that would outlast a mayor, or any changes in leadership at the governmental level," she said. The Barr Foundation had been an early proponent of applying network theory to address complex issues like climate change, which are beyond the reach of any individual organization or government agency to address, Brandes elaborated. "Networks work best where

there is no central hub, but where you're creating clusters of hubs, and there's a lot of interconnectivity but no central authority in it," she said.

That insight guided the emerging structure of the GRC. "This group is designed to mobilize business and civic leaders for implementation," John Cleveland explained. Having the participation of CEOs was the crucial first step in setting things in motion. But there would need to be a way to conduct the Commission's month-to-month work at the level where facility managers and engineers actually make things happen. So in the spring of 2011, working groups were established for different sectors – health care, higher education, hospitality, and commercial real estate. The working groups would be led by a member of the GRC and would include a range of participants with hands-on expertise and day-to-day concerns. Cleveland's role was to promote as much interconnectivity as possible between participants, so that innovations in the health care working group, for example, might quickly be shared with other working groups.

It's a matter of allowing ever-widening circles of activism, without the inefficiency of a central authority – or the randomness of uncoordinated change. A few forward-thinking institutions and businesses could pick up on the City's goal to reduce emissions by 25 percent over 10 years, "and can easily do it," Cleveland said. But to do that citywide is a "massive" undertaking, he said, and impossible without expanding connections, coordinating information, and measuring results.

"You're trying to catalyze a lot of the different actions that can be taken by different organizations connecting to yet other organizations," Brandes said. When those circles continue to widen, she said, "what you see is a city at work."

III. The View from City Hall

The Mayor's Environmental and Energy Services Cabinet would be the hub of a network map of Boston's climate change activism. The Cabinet is led by Brian Swett, Chief of Environment and Energy and a member of the Green Ribbon Commission. Within the Cabinet, climate change and energy policy and initiatives are overseen by Carl Spector and Brad Swing. Spector, as Director of Climate and Environmental Planning, led the development of the City's 2011 climate action plan and oversees its tracking and implementation. Swing, as Director of Energy Policy and Programs, runs the Renew Boston program, one of the City's first efforts to coordinate residential and commercial energy conservation efforts with the region's utility companies.

"We very much depend on networks to do the work that we need to get done," Swing said in a recent conversation in a conference room near his sixth-floor City Hall office. "Even before the



Brian Swett at the New England Aquarium event, February, 2013 (Photo by City of Boston)

Green Ribbon Commission emerged, we articulated Renew Boston as a network of alternative energy and energy efficiency service provision.”

For utilities, especially, the last several years have seemed to bring about rapid changes – and more pressing demands from outside groups. One of the challenges for Swett’s office was to find ways to streamline the work of both Renew Boston and the GRC’s working groups, so that information was flowing efficiently between the City, the utilities, and outside groups.

“We need that constant feedback... Otherwise, we’re sitting in a room throwing darts at a wall, hoping these policies work.”

Brian Swett, Environment and Energy Office, City of Boston

Swett has supervised a major initiative to set up a city-wide system in which large commercial buildings publicly disclose their energy use. As with all efforts to reduce carbon emissions, this has taken Swett deep into the world of energy metrics, or, as he puts it, the need to find “the measures that matter.” The relevant measures of energy use are different for different sectors. A simple rating of energy consumption per square foot won’t do, he said. A hospital unit that operates around the clock will have vastly different energy use than an office building that keeps bankers’ hours. In commercial real estate, Swett said, the goal is to measure “energy use intensity per person in the building.” Many of the measurements that are essential to the GRC’s efforts emerge from Swett’s office – and information gathered by GRC working groups is of vital interest to Swett, as well.

To reduce emissions community-wide – while also encouraging development – will require the kind of transformation that has only begun to take place, Swett said. “This is not going to be just the low-hanging fruit. We’re not just changing light bulbs. This is pro-actively changing out systems; this is re-thinking the skinning of our buildings; this is re-thinking our operating hours; this is making sure we’re moving toward a smart grid; this is being pro-active about our power supply.”



Bryan Koop discusses rental premium for LEED properties in Boston at a GRC meeting (Photo by Richard Howard)

In the aggregate, the expectation of a growing city has to be factored in. More jobs in the city, more residents, more vehicles, more buildings – none of that changes the goal to find absolute reductions in carbon emissions. As Swett is fond of saying, “the planet doesn’t care” about *why* emissions are rising – all that matters is how many tons of carbon dioxide are going into the atmosphere.

The enormity of the task requires an all-hands-on-deck approach, Swett said, which is why he is grateful for ever-widening circles of involvement. “Everyone has to own the goal – and I don’t have the leverage, and the mayor doesn’t have the leverage to say ‘We’re going to require you to be 20 percent more energy efficient in the next seven years.’” It’s also a matter of expertise. “I’m never going to be able to tell the hospital sector how they’re going to get 20 percent reduced greenhouse gas emissions.” The City needs the kind of information the GRC working groups are mining. “We need that constant feedback,” Swett said. “Otherwise, we’re sitting in a room throwing darts at a wall, hoping these policies work.”

This surely is one of the most important dynamics of Boston’s efforts to promote a transformation in energy. As Swett noted, the wide participation of prominent members in the business sector means that the City doesn’t have to depend on “command-and-control policymaking,” which in addition to setting up an adversarial dynamic between business and government would be unlikely to succeed in any event.

Swett believes that a few Boston leaders started moving on energy conservation because of alarm about climate change – he saw it first-hand when, before joining city government, he worked for Bryan Koop at Boston Properties. But that’s not necessarily the norm. “We’re at a very different stage in the climate change movement, where there are far more avenues to have the economic argument,” Swett said. Thinking back to his time in the private sector, Swett channeled the kind of conversation that has the most potential to bring business leaders along. “I can set aside the climate science and I can have a pure business strategy argument with the owner of a major company in Oklahoma City: ‘I don’t even care if you believe in climate change; even if it is a hoax. There is a business rationale for you to take all the actions that I’m going to tell you you need to take.’ It’s about the marketplace, about insurance, about the expectations of your customers, about government regulation and being in front of that. This has a real business impact. This is a new paradigm for business.”

IV. A Working Group at Work

But how does that argument go over with business owners in Boston? The Green Ribbon Commission’s commercial real estate working group has been the venue for intensive discussions. Members of that group met in March of 2013 in a spacious conference room of an office tower in Boston’s rapidly developing Seaport district. The office is part of the Boston headquarters of Nutter, McClennen & Fish – Michael Mooney, a top lawyer at Nutter and a member of the GRC, is the chairman of the working group.

Boston’s original 2010 climate action report stated, “The most important step that Boston can take is to improve the energy efficiency of existing buildings.” Almost 70 percent of community-wide GHG emissions were from residential and commercial buildings (most of the rest comes from transportation). Commercial and industrial buildings are the largest emitters, accounting for most of that 70 percent portion (about 52 percent is commercial/industrial and 18 percent residential, according to 2011 figures). So, Boston

developed a plan to require public reporting of energy use in the commercial sector, an initiative that Mayor Menino formally proposed to the City Council in February, 2013. Reporting is intended to show where progress is and isn't being made across the city, and to create market incentives for building owners to invest in energy efficiency.

This was the top item on the agenda for the March working group meeting – the City's plans for the "building disclosure ordinance." Carl Spector was on hand to present the City's view. He described the long process of fine-tuning the ordinance. "We met with anyone who would come through the door," he said. The ordinance was drafted with the input of groups such as the GRC's health care working group, the Boston Chamber of Commerce and the Greater Boston Real Estate Board.

Spector fielded questions from several members of the working group, both property owners and those who manage commercial properties. He clarified that the ordinance does not require property owners to make any expenditures on conservation – the only penalty for inefficiency is for it to be publicly known. What about fines for non-compliance? he was asked. What about phasing the reporting requirement in more slowly – or using 2014 as a "pilot year" before the system goes fully public? Since the City Council had not yet taken up the matter, such matters were open for discussion. The City's interest, Spector said, is to make the system "as little burdensome as possible."

Such back-and-forth has been an important part of what the working group has been doing from its inception, Mooney said in an interview. "We had to spend, I'm going to say, six months or more, first of all, reducing the resistance of some of the commercial real estate owners to this concept – because there was a visceral reaction that this is regulation, this is monitoring. There were a lot of good reasons to be concerned about it."

"But, what we also did was provide them an opportunity through the commercial real estate working group to sit down with...the City of Boston, as they were formulating the ordinance, designing it, and give them some input before anything was even published about it," Mooney said. "They would not have had that opportunity if not for the commercial real estate working group. And the City listened." Originally the City wanted to require disclosure by 2013, Mooney recalled. "We convinced them that it's going to take longer. Let's make it 2014. We need that extra year." The Boston City Council approved the ordinance on May 8, 2013, by a 9-4 vote. The largest commercial



Michael Mooney of Nutter, McClennen & Fish (Photo by Richard Howard)

properties (more than 50,000 square feet) will begin reporting in 2014, with smaller properties phased in through 2017.

One of the ways the Green Ribbon Commission has avoided duplicating work already in progress is by tapping into existing networks and incorporating them into the GRC. So for the commercial real estate working group, the GRC enlisted Rick Dimino, the executive director of A Better City, to coordinate the ground-level work. Originally set up as the Artery Business Committee, an organization to advocate for downtown business interests during Boston's massive Central Artery project ("the Big Dig"), ABC had evolved into an important voice for Boston's businesses, especially in transportation and development issues.

Dimino had been on the mayor's Climate Action Leadership Committee in 2010. Discussing his group's partnership with the GRC one morning at the downtown office of ABC, Dimino recounted the formative steps ABC had taken to promote awareness of energy consumption. In 2010, the group worked on a pilot project to develop a "scorecard" that rated buildings in terms of energy efficiency.

ABC "became a natural partner" with the GRC, he said, having already established strong connections with developers, such as Boston Properties, that were on the forefront of energy efficient design. "The good thing about the Green Ribbon Commission was that they did everything in an organized way," Dimino said. The assumption from the beginning was that the key ideas about how to measure progress, how to implement changes, what kind of timetables make sense, would come out of dialogue with the commercial real estate leaders. "It has to work as an integrated network of partners working together, or you're going to be fooling yourself" about achieving ambitious goals, he said.

The GRC, he said, "operates as a very substantive think-tank, looking at what's happening elsewhere that we can pick up on," Dimino said. A perfect example of that is the report ABC and the GRC produced in June, 2012, entitled "Benchmarking and Disclosure: Lessons from Leading Cities." The report examined efforts in New York City, Seattle, San Francisco, Austin, and Washington, DC to set up systems of reporting on urban energy use.

Such investigations helped advance the conversation in Boston's downtown business sector. ABC also coordinated seminars to train building managers in the use of Portfolio Manager, the EPA's software for energy monitoring. Over time, Dimino and Mooney were able to advance the argument that the market itself is creating incentives for real estate interests to pay attention to energy conservation, as more tenants and workers express a preference for "green" buildings. "This is a wave that's coming," Dimino said.

Mooney put it this way: "My sales pitch is easy: I want to save you a hundred and fifty thousand dollars a year. That's what I want to do." How? "We can make energy audits available, working with utility programs, so that there's dollars available for you to invest."

“You have to make the economic case,” Mooney said. “It’s not enough to say, rah, rah, we’re going to be the cleanest city, the most energy efficient city. You’ve got to make the economic case to landlords.”

V. A Healthier Health Care Sector

Greater Boston’s hospitals and clinics are vast, energy-intensive, and diverse. To coordinate the work of the GRC’s health care working group, the Barr Foundation tapped two activists with extensive experience in the international group Health Care Without Harm (HCWH): Bill Ravanese, who directs the Green Building and Energy Program for HCWH, and Paul Lipke, senior advisor to HCWH’s building and energy program.

“Health care is the largest employer in the state,” Ravanese said in a recent conversation. “It is a huge real estate owner, with over 23 million square feet of holdings” in the Boston area. “It accounts for the second-largest transportation system in the state. And it’s the largest energy user.” Health care, he said, tends to be about two-and-a-half times more energy intensive per square foot than commercial buildings. It is predominantly a “24/7 business” with facilities that may need four to six full air changes per hour. “There are chillers on the roofs that are the size of trucks,” he noted.



Kate Walsh of Boston Medical Center at a GRC meeting (Photo by Richard Howard)

The biggest player in Boston health care is Partners HealthCare Systems, which was founded in 1994 by Brigham and Women’s Hospital and Massachusetts General Hospital. The President and CEO of Partners, Gary Gottlieb, is a member of the GRC, as is Kate Walsh, President of the Boston Medical Center. Gottlieb and Walsh “engaged the health care CEOs from more than 20 hospitals, and under their auspices, HCWH brought together the hospitals’ facility leaders,” Ravanese said, adding, “I don’t think that’s ever been done before in the city of Boston or beyond.”

Having support at the upper levels of the region’s health care institutions gives the GRC working group the cache it needs to get conversations going – yet it doesn’t necessarily make such conversations easy. Because of its size and complexity, the health care sector presents a number of challenges that Ravanese and Lipke have seen up close in many hours of meetings with facility managers and engineers. There’s so much variation between institutions – and how their engineering departments operate – that just gathering essential information isn’t easy. “There’s always a bit of a tension between

work on getting the metrics, and gathering the data, and [engineers'] attitudes that they could be out in their facilities actually working on saving energy," Lipke said.

Moving forward depends on "having built enough of a relationship of trust with the engineering community that they're willing to humor you, to put up with you" out of a general sense of having a shared goal. "They recognize the value of what we do," he said. He also sees a value in getting engineers into the broader conversation. "It forces them to think about what they do at a level where they can boil it down," he said. And that has had discernible effects in recent rounds of policymaking. In public hearings held by state and city agencies, facility managers who have been active in the GRC health care working group have brought their expertise into the public discussion, a welcome development for government officials faced with sometimes daunting technical questions.

Of course, it's just as important that facility managers and engineers are talking with *each other* about current challenges and best practices. And this is where Ravanese and Lipke describe perhaps the most significant collaboration yet seen in any of the sectors in Boston, an effort to promote energy conservation in health care. "What the leaders do, others follow," Ravanese said.

For example, starting in 2008, Partners invested hundreds of thousands of dollars in a Strategic Energy Master Plan. The following year, Partners embarked on a plan to cut its energy consumption by 25 percent by 2015. Then something unusual happened: Partners decided to share its research and methodology with facility managers of rival institutions.

Lipke said such collaboration wasn't a given among competing health care groups. "They are intensely competitive institutions by their nature," he said. "They compete for top-level physicians and for patients." And yet Partners gave up some of its competitive advantage from having developed an advanced energy conservation plan. When the GRC's health care working group began meeting in 2011 one of the first orders of business was building on this collaboration. Participating facility managers put their heads together on a multi-year work plan and found ways to share the latest energy conservation innovations. And, based on what Partners had learned, they helped develop a more cost-effective simplified Strategic Energy Master Plan, which they posted online for any hospital nationwide to adapt and use.

The collaboration's results are proving to be impressive. The GRC's health care working group set out to gather data on all forms of energy use for virtually all Boston's hospitals, going back to 2008. Using the EPA's Portfolio Manager system, they were then able to build a custom web interface to analyze the data. By the spring of 2013, a sector-wide picture became available for the first time. While the health care sector typically sees a 1.5 percent annual increase in energy use (due to expansions in physical plants, increased patient load, and energy-intensive medical technologies), the thousands of newly assembled data points show that Boston's health sector held energy use and GHG growth flat from 2009 through 2011. Then, in 2012, the sector saw about a 2.5 percent reduction in GHG emissions. Lipke says this is doubly significant: First, Boston's institutions

outperformed the sector nationwide – the EPA recently reported hospitals that track their energy use in Portfolio Manager saw a two percent reduction in energy use intensity between 2008-2011. Second, Boston is the first city in the nation to produce a metro-wide health care sector portrait of its energy use and GHG emissions.

So what does all the GRC's work amount to after its first three years? ... there are individual enterprises that are demonstrating "the art of the possible."

There are other indications that health care institutions are thinking long-term. When David Storto, president of Spaulding Rehabilitation Network, spoke at the Aquarium press conference in February of 2013, he gave a striking example of the new energy awareness, as well as the need for climate change preparedness. Spaulding was building a new facility along the Charlestown waterfront. Everything about the center was designed with new realities in mind. Major parts of the mechanical equipment were installed on the roof instead of at ground level. A back-up generator was included underground, but in a waterproof vault. Storto said that the facility, which opened in April of 2013, took heed of lessons learned from the hurricane Katrina.

Lipke notes that Health Care Without Harm as well as other groups, encouraged by the Barr Foundation, met with designers and engineers in the early stages of planning for the new Spaulding facility. The creation of the state-of-the-art rehabilitation center, he said, shows "the value of network building between institutions and NGOs that have shared or overlapping interests."

VI. Reducing Carbon Emissions

After the first meeting of the Green Ribbon Commission in November, 2010, the full GRC has met twice a year while working groups and subgroups of working groups were meeting monthly during this time.

The fifth meeting of the GRC was held on a snowy February morning in 2013, around a horseshoe-shaped table in a Bank of America conference room with panoramic views high above the city. Brian Swett was on hand to deliver a progress report. Using a multitude of charts and graphs projected onto a large screen at the front of the room, Swett worked his way toward the bottom-line analysis: After tracking emissions since 2005, and after more than two years of intensified effort, are we reducing emissions, or not? "We are roughly on track" to meet the goal of 25 percent reductions citywide by 2020, Swett said. The city produced more than 7.5 million metric tons of CO₂ equivalent in 2005, and only about 6.9 million in 2011 – a nine percent reduction.

While overall emissions reductions numbers were driven largely by changes in the fuel mix – in particular a sizable switch to natural gas, which emits less CO₂ – reductions were achieved in all sectors, Swett said. The commercial and industrial sectors are using slightly more power, but efficiency has brought an 11 percent reduction in emissions.

Transportation saw a three percent reduction, due to more efficient vehicles, he said. Residential emissions dropped by nine percent. All this, he said, occurred while the population in Boston rose six percent and job growth increased by five percent.

A presentation by Projjal Dutta, the director of sustainability initiatives for the New York State Metropolitan Transportation Authority suggested a broadening agenda for the GRC. Dutta made the case that the right kind of urban development and transportation policies are the solution to the greenhouse gas problem. More density is what leads to less energy use – if it results in less sprawl and fewer cars on the highway. “If we could fix transportation in this country we could fix global warming,” Dutta said.

Dutta’s arguments were in sync with recent discussions in Massachusetts and in Boston, which are turning toward the need for modernization of public transportation. And his emphasis on transportation dovetailed with the Boston GRC’s recent decision, reiterated at the annual meeting by John Cleveland, that two new GRC working groups had been formed. One is for the transportation sector; the other one will marshal the city’s efforts to adapt to rising sea levels and dangerous storms.

So what does all the GRC’s work amount to after its first three years? Swett’s presentation noted that in different sectors there are individual enterprises that are demonstrating “the art of the possible.” Bank of America is aiming for a 30 percent reduction in emissions by 2015; Starwood Hotels is targeting a 30 percent reduction in energy use by 2020; Partners HealthCare is on track to cut energy use and GHG emissions by 25 percent by 2014. Now the challenge is to widen the circle of participants. The health care sector is the GRC’s best model so far – in which more than 30 facility leaders and CEOs are in regular discussions about their energy policies. Those leaders alone oversee about 23 million square feet in about 250 buildings in the Boston area.

As John Cleveland expressed it, cities need a “business and civic leadership table” where these kinds of conversations happen. Cleveland said the initial challenge for the Green Ribbon Commission was simply to get a critical mass of civic and business leaders to endorse the need to reduce emissions and prepare for inevitable changes – to think in terms of “avoiding the unmanageable and managing the unavoidable.” When leading institutions start showing what is possible, it sets up what he calls “a virtuous cycle” within organizations, where executive engagement creates resources to promote energy efficiency, which leads workers to produce cost-savings, which has positive spillover effects for the business and the environment, and which can lead to even further improvements in a company’s energy performance.

The next step is to broaden that success – to harness both market power and government power so that all significant property owners internalize the City’s environmental goals and build them into their business strategies. To move toward a citywide virtuous cycle requires, as Mayor Menino put it, “the biggest team effort in our city’s history.”