

Cornell University's Climate Action Plan:

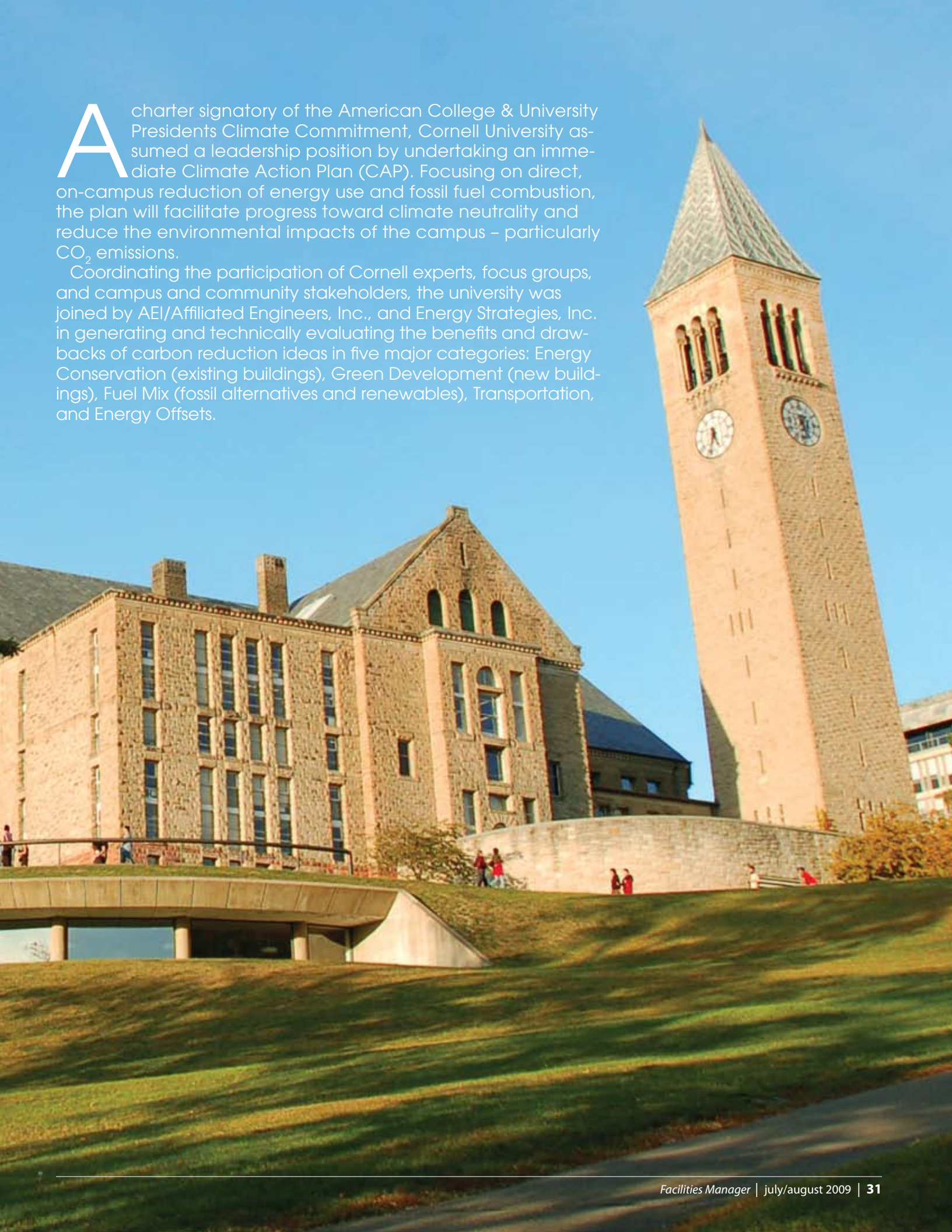
The Engineer's **Q&A** with the Owner

By Mike Walters, P.E., LEED® AP, and Steve Beyers, P.E., LEED® AP



A charter signatory of the American College & University Presidents Climate Commitment, Cornell University assumed a leadership position by undertaking an immediate Climate Action Plan (CAP). Focusing on direct, on-campus reduction of energy use and fossil fuel combustion, the plan will facilitate progress toward climate neutrality and reduce the environmental impacts of the campus – particularly CO₂ emissions.

Coordinating the participation of Cornell experts, focus groups, and campus and community stakeholders, the university was joined by AEI/Affiliated Engineers, Inc., and Energy Strategies, Inc. in generating and technically evaluating the benefits and drawbacks of carbon reduction ideas in five major categories: Energy Conservation (existing buildings), Green Development (new buildings), Fuel Mix (fossil alternatives and renewables), Transportation, and Energy Offsets.



Technical rigor was applied to a broad range of opportunities, assessing the viability and maturity of such possibilities as biofuel, geothermal, and sequestration. Selection and prioritization were informed by a transparent triple bottom line decision system, balancing qualitative and quantitative considerations, and including life-cycle cost analysis, growth pattern projections, and future energy cost scenarios. The year-long project is culminating in recommendations for approval and implementation of hard (capital improvements) and soft (behavior and policy) options, on short (one- to six-year), intermediate (six- to ten-year), and long (over ten-year) timetables.

Upon completion in September 2009, the CAP will define a plan to achieve carbon neutrality as soon as possible, representing an elimination of roughly 320,000 metric tons of greenhouse gas emissions. The plan will be flexible to allow update and revision as new developments in technology, impact, risk, and cost emerge.

Cornell envisions the CAP as a model for other campuses and institutions seeking direct, measurable improvements in efficient energy use and reduction of greenhouse gas emissions, and as a means to advance education for sustainability in all sectors of our society. To share the experiences of the past year with others considering the CAP process, Steve Beyers, services team leader of Cornell's Environmental Compliance and Sustainability Office, joined AEI's Sustainability Practice Leader, Mike Walters, for the following conversation.



MIKE WALTERS: Not including the carbon inventory that had to be completed before proceeding, at this point we're eight months into Cornell's Climate Action Plan. With what we know now, what decisions at the outset have been most effective or inspired? Given a do-over, is there anything you wish we hadn't done?



STEVE BEYERS: Actually, I can think of three good decisions that were made right from the start. The first was to divide the effort into the five categories – we used the term “wedges” – which really allowed groups to focus on the range of opportunities within each wedge without getting overwhelmed by the task at hand. A second sound decision was to seek a plan that was central to Cornell – representing who we are as an institution, where our strengths are, and what resources, both intellectual and physical, are strong in our community. But the best decision of all was to take the carbon neutrality goal seriously – we aimed for zero. Only by setting such an ambitious goal could we be sure that every option was in play – that we didn't make the mistake of dismissing ideas too readily, and just falling back into the same old assumptions that brought us to this critical point in the first place.

Bad decisions? I can't think of any really bad decisions. We

tried a lot of things that didn't work out, but we learned things along the way. We've stumbled a bit, but stumbled forward – and we've been way too busy to look back.

WALTERS: Signing the ACUPCC guarantees a college or university's commitment to undertaking a CAP. What would you suggest to a facilities management group that wants to undertake a CAP if the school's president hasn't signed? What are the best avenues to pursue to gain approval for a CAP initiative?

BEYERS: Let me first just say that leadership from Cornell's President David Skorton was a tremendous boost to our efforts. I really can't understate the importance of his strong, consistent, top-down support.

On the other hand, I can understand why a president would not want to sign the pledge. Not every institution is prepared to take on such a serious challenge. In addition, universities tend to be decentralized, and top-down mandates are not always popular. For that reason, many institutions will likely develop their best efforts from the bottom up. But even bottom-up initiatives are likely to require key support from institutional leaders in order to be successful.

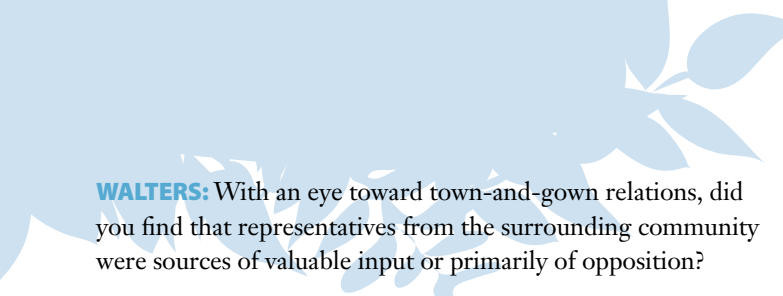
One key to success is to show the economic advantages of a CAP. For a university, this is a bit easier than for the average corporation. After all, our income stream is a bit more discretionary – tuition, research grants, and alumni donations are all choices made by someone to support an institution. I think a good CAP can improve income in all of these categories, while at the same time reducing future liabilities like energy and regulatory costs. If one can demonstrate that kind of win-win result, politics really don't matter.



WALTERS: A CAP requires the participation of a broad campus-wide representation. The president's office can actively participate in only so much. Who are the key leaders in driving a CAP forward?

BEYERS: We've had so many leaders, such broad support, that I can't possibly name them all. They are all key, from President Skorton to former Executive Vice President Steve Golding to Vice President Kyu Whang. Our leaders in our division of Utilities and Energy Management, especially Jim Adams, the director, and Lanny Joyce, our energy genius, provide just fantastic support for the effort. Dean Koyanagi and Dan Roth from our sustainability staff. All of our administrative support staff has been exceptional. There are dozens in between – this is really a broad effort here at Cornell.

But if you asked me to name one person, I'd be foolish not to laude the primary role of Bert Bland, our director of environmental compliance and sustainability. Not only is he the principal driver and the real inspiration behind this effort – he is also my boss!



WALTERS: With an eye toward town-and-gown relations, did you find that representatives from the surrounding community were sources of valuable input or primarily of opposition?

BEYERS: We have a wonderful, interactive, smart, creative, forward-thinking community here in Ithaca, New York. This means that the answer to both questions is “yes.” Yes, they are a source of valuable input and great ideas, and we will get great community support for our efforts. And yes, members from that same community will undoubtedly form the most ardent opposition to any initiatives that impact their lives or our shared environment!

Our aim is to ensure that the positive aspects of our actions outweigh any negative impacts, but no true action has zero impact, and independent-minded citizens often disagree on many issues. In the end, we all know that Cornell is important to the community and the community is important to Cornell, so we will work it out.



WALTERS: Cornell University would appear to enjoy rather ideal circumstances for student involvement in CAP-related activities. What can an institution do to encourage this, particularly in more urban settings or schools with substantial enrollments of commuting students?

BEYERS: Our students are simply the best, but I can't think of a school that doesn't have broad student support for efforts to improve our future environment. My daughter attends American University in Washington D.C., and AU students are very much involved in environmental issues.

Each institution needs to look at its own footprint and focus on the efforts that support their core mission. Here at Cornell, our land-grant mission and strong research capabilities led us to initiatives involving agriculture resources and innovative renewable energy research. At AU, their strong public policy program and excellent urban transportation systems are key. The needs are broad, and every institution can play to its strengths in this endeavor.



WALTERS: Early adopters always bear the brunt of the expense in blazing new trails. In retrospect, what efficiencies do you see possible for institutions undertaking CAPs subsequent to Cornell's efforts?

BEYERS: The efforts of Cornell and other leaders can't help but provide inspirational ideas, processes, and options that others may readily adopt. For example, one of our initiatives, which we refer to as Smart Growth, can be tailored to any institution's needs in helping to direct future growth on a path that supports future sustainability initiatives and minimizes future energy

and climate liabilities. While each institution needs to follow their own strengths, having a ready-made menu of options and process tools is a good starting point.



WALTERS: Gaining approval for a CAP will require making a business case beyond ROI projections. Identifying possible additional sources of funding is a start. Any recommendations?

BEYERS: The leaders of institutions are well schooled in traditional economic principles, where short-term paybacks are always preferred. This has tended to minimize the value of long-term sustainable investments. In order for society to respond to climate change, institutions need to challenge assumptions about their own economics and the impacts of their actions in the near and long term. The latest economic cycle has also forced institutions everywhere to reexamine such assumptions. CAP actions, which tend to work as hedges against the uncertain future volatility of energy costs and climate legislation, fare better and better when other investment choices are less certain.

Cornell's leaders also understand the unique economies of academic institutions, where tuition, research or teaching grants, and alumni support combine to keep our institution fiscally strong. Our principal income streams are all discretionary choices made by individuals and organizations that are looking for inspiration, leadership, and results. In that context, ROI becomes much less important than helping to solve global problems.



WALTERS: A CAP stretches decades into the future so the plan itself has to be a dynamic document that can adapt to changing circumstances, priorities, and whatever other unseen developments await us. We're working together to develop an online tool to track progress, post updates, and project outcomes. How do you foresee the various constituencies who have been involved to date using this tool?

BEYERS: We've been working on that. Our goals are many – we hope to inform and educate, remain transparent about our progress, and create clear metrics to guide the way. We want the information to be widely available, so that it provides valuable information to our community, our student body, and our trustees. Ask me in a couple decades and I'll tell you how it all worked out! ☺

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