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Would you like to suggest a topic for The Checklist? E-mail tpurser@bcxa.org
Letter from the President

Greetings,

When autumn comes around each year, I am always surprised at how quickly the summer months have passed by. It’s a busy time of year both professionally and personally. Now, as the month of September arrives, members are wrapping up vacations and getting children off to school, as well as spending time in the field on commissioning projects resulting from the summer building season.

Fall has special meaning to the association, as it is the time when the BCA chooses its new directors for chapter boards and the international board. That’s right: It’s election season! The Call for Nominations was released at the end of August, and interested members in good standing can now apply for a spot on either their chapter board or on the International Board of Directors. See page 5 for a list of open positions.

Board service is a great way to participate in the association and become a driving force in the development of the policies and guidelines that shape the commissioning industry. If you are as passionate about the industry as I am, you’ll find the time spent in BCA leadership to be very satisfying. It’s also a great way to network and build your business. I can tell you that since 2003, when I became involved as a leader in the BCA, I’ve met and connected with many colleagues throughout the industry and presented at major conferences and events. These experiences have lead to opportunities that have benefitted my business overall. If you are interested in running for a board position, click here for additional information. The deadline to submit your application is Sept. 30, and elections commence on Nov. 3.

The BCA has another reason to celebrate fall: the Associate Commissioning Professional (ACP) certification was released on Sept. 15. The ACP is a more entry-level certification that begins the path toward the Certified Commissioning Professional (CCP) designation. So, why is there an additional certification? Isn’t the market already full of acronyms?

Over the years, the CCP has become known as the premier certification for commissioning providers. It also has become known as one of the most difficult commissioning certifications to obtain. The CCP was designed to be difficult to achieve and to separate those with demonstrated commissioning experience from those that do not have real-world commissioning project experience. Education and time in the industry, as well as experience performing commissioning as a commissioning authority for multiple projects, were considered key to success as a provider. Candidates also needed to pass an examination where they exhibit their understanding of the commissioning process. The ACP is simply an entry level version of the CCP; similar in rigor to commissioning certifications offered by other organizations. It incorporates the education and exam components of the CCP, but waives the required project experience. As ACPs gain additional commissioning project experience, they can submit their experience and eventually earn their CCP without having to retake the examination. For more information on this new certification, check the BCA website.

Enjoy this fall edition of The Checklist, and check out the NCBC wrap-up article on page 4. We had a great time in Cincinnati and look forward to co-producing NCBC 2012.

Sincerely,

Mark F. Miller, PE, CCP, CEM
BCA President

CCP™ Updates

The BCA congratulates the following individuals on achieving the Certified Commissioning Professional (CCP) designation:

Senthil Kumar Arunachalam  
LEED AP BD+C, CEM, CCP  
CTG Energetics, Inc.  
Irvine, CA

George McFee, CCP  
Consulting Engineering Services, Inc.  
Middletown, CT

Gary Short, PE, LEED AP, CPMP, CCP  
sys-tek, Engineering & Consulting Agents  
Blue Springs, MO

These individuals join the ranks of some of the most qualified commissioning providers in the industry. Way to go!

The CCP exam is online and available at more than 200 testing sites. To apply, review the Candidate Bulletin and download the application at www.bit.ly/bcxacertification.

Not sure if you are qualified? Send us your questions at certification@bcxa.org or call the BCA Hotline at (877) 666-2292.
After 19 years in existence and earning the title of the original commissioning conference, the National Conference on Building Commissioning (NCBC) showed no signs of slowing down, even despite the heat and humidity of a Cincinnati summer.

Inside the cool confines of the Hyatt Regency Cincinnati, attendees from across the world gathered Aug. 10 to 12 to glean the latest information, tools and technologies in the commissioning business from some very well-known professionals.

NCBC prides itself on the number of attendees that return year after year, and this year was no exception. There were many first-time attendees as well, with 35 percent indicating that this was their first NCBC.

Along with new faces, new partnerships and fresh perspectives filled this year’s conference. For the first time, NCBC co-located with GovEnergy, a conference for government representatives and those who do business with them. This partnership allowed NCBC attendees to take advantage of government rates for hotel rooms, access the 1700 booths of the GovEnergy exhibit hall and attend the GovEnergy closing ceremony.

Additionally, NCBC co-produced the conference for the first time with the BCA. The relationship between the two entities has always been strong, but co-production of the event added a fresh perspective as BCA volunteers worked hand-in-hand with the NCBC team to review the submitted abstracts and plan the conference agenda.

Wednesday afternoon kicked off with two great breakouts. Those interested in working with the government ben-
Director Nominations Close Sept. 30

Want to get more involved with the BCA and have a hand in creating policies that govern the association? BCA elected officials lead and influence commissioning industry initiatives and standards, while expanding their network of contacts through the commercial buildings industry, and much more.

The deadline to submit an application to become a member of the international or your chapter board is Sept. 30. Voting begins Nov. 4.

Nomination Forms
- International Board of Directors Nomination Form
- Chapter Board of Directors Nomination Form

Open Positions
International Chapter Board .......................................................... 4
plus two regional representatives (Southwest & Northeast)

Central Chapter Board ................................................................. 3
National Capital Chapter Board ................................................. 3
Northeast Chapter Board .............................................................. 2
Northwest Chapter Board ............................................................ 3
Southeast Chapter Board ............................................................ 4
Southwest Chapter Board ............................................................ 4
Texas Chapter Board ................................................................. 2
Eastern Canada Chapter Board .................................................. 5

efitted from Dr. Tim Unruh’s presentation on commissioning in the federal sector. Unruh, program manager for the Federal Energy Management Program, spoke with Mary Snodderly of the General Services Administration and others about the federal government’s aging building population, the government’s energy goals, and how best to work so that everyone on the team is satisfied.

The second Wednesday breakout, facilitated by Gerald Kettler of Facility Performance Associates, dealt with ratings systems and offered a review of upcoming changes in the LEED program and the International Green Construction Code. H.J. Enck of Commissioning & Green Building Solutions also discussed the use of commissioning for more efficient delivery of LEED products and reviewed both successful and less successful case studies. The latter half of the session was dedicated to a panel

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Member Spotlight

with Kenny Reed

Home city and state: Gretna, Nebraska

Employer: M.E. Group

Position: Commissioning Project Manager

BCA member since: 2008

Years practicing commissioning: 4

Volunteer positions held with BCA:
• Professional Development and Education Committee member
• Chair, Professional Development and Education Committee

Let’s start off with your personal background before we talk about your work with the BCA professional development committee. How did you get involved with commissioning? What drew you to it?

My first exposure to commissioning was during an internship while I was in college. The thought of working with design professionals, building owners and construction staff was one attraction. I didn’t want to be stuck in an office all day performing loads and laying out ductwork. It also seemed that the role of a commissioning agent and the knowledge fit well with my degree in architectural engineering. When I started work out of college I was originally hired to do design, but we had an immediate need for individuals to perform commissioning and I’ve been involved in commissioning ever since. I have been fortunate to work with and learn from individuals that have a combination of design and construction experience, and that has helped me become a better commissioning agent.

What’s your biggest accomplishment in the field?
I would say my biggest accomplishment would be leading the existing building commissioning effort of a one-million-square-foot federal building. The project involved a short time schedule and high expectations from the owner’s staff. In the end, we were able to provide a good service and exceed their expectations.

Where do you see the field of commissioning going in 10 years?
I think commissioning will become more popular on projects throughout the country, especially in the private sector. As an industry, we have our own issues such as commissioning certifications and the discussion of who is qualified to be a commissioning provider, which I’m sure will be solved within the next ten years. Commissioning has huge growth potential particularly in the existing building commissioning market. Not only is there a large portfolio of existing buildings that have never been commissioned, but I believe that rising energy and maintenance costs will make commissioning of existing buildings a profitable business decision for building owners.

What’s your take on having enough providers available to do the work?
It’s definitely important to have enough providers in the industry to perform the work, but I also think the focus needs to be on having enough qualified providers. This is a struggle across the entire commissioning industry. The BCA is taking the lead in not only promoting commissioning in general but also is providing educational opportunities for commissioning providers. Another way we can work to ensure we have enough future providers is to educate students in college about the commissioning industry and the career options that exist once they graduate.

You recently became chair of the professional development committee. For those who are not familiar with it, can you provide some background on the committee? What is it, what does it do, how often does it meet and so on?
The committee is responsible for developing educational opportunities for BCA members in addition to additional training resources through the BCA. The readers of The Checklist are probably most familiar with the biannual webinar series, which has been well received by our membership and is a function of this committee. We hold monthly web meetings to discuss committee progress and have recently added a few new members to the committee, which is a sign of how busy the committee is.

What are your goals for the committee?
We will obviously continue to develop the webinar series, and we are constantly looking for new topics and suggestions from viewers on how to improve it. In the near term, we
The BCA is Proud to Announce Its New Corporate Members

- Astrance
- Burns, DeLatte & McCoy, Inc.
- Design Tree Engineering
- EMCOR Government Services — Engineering Services
- Intelligent Power Solutions Inc.
- Isotherm Engineering (Ottawa) Ltd.
- Malone Finkle Eckhardt and Collins, Inc.
- Matern Professional Engineering, Inc.
- Morrison Hershfield
- RDK Engineers
- SGM Engineering, Inc.
- Shive-Hatery
- Stantec
- WayPoint CX, Inc.

In addition to the many benefits BCA members receive, corporate members also receive two individual memberships and listing on the Corporate Member Directory, accessible to building representatives in their search for commissioning services.

Chairing the committee is voluntary. You’re obviously busy with work and life. Why do you volunteer your time to the BCA?

I see it as a great opportunity to work alongside other industry leaders and shape the commissioning industry. The commissioning field has come a long way in the last ten years, and plenty of potential exists for the future moving forward. Most importantly, I enjoy the work that I do as a commissioning agent and want to be involved as much as I can in improving the commissioning industry. BCA is a great way to do that.

Do you think other BCA members can benefit from volunteering?

Absolutely! Everyone is busy with work, family, and whatever time is left leaves little room for volunteer work, but the time commitment isn’t very demanding. Just donating two hours per month would provide some much needed assistance for most BCA committees. The volunteers within the BCA are the core of the organization’s activities. This makes volunteering one’s time that much more important to the success of the BCA and further growth of the commissioning industry. If any of the readers are interested in volunteering, I encourage them to check out the committee page on the BCA website.

Thanks for talking with The Checklist. One last question before we’re done. What’s the weirdest thing you’ve ever found in a building?

I think almost everyone in the commissioning field has seen or heard their share of maintenance access horror stories in both new and existing buildings. For me, the weirdest thing I’ve ever found had nothing to do with an actual piece of HVAC equipment at all but rather an occupant’s workspace. This individual rigged their office cubicle with a makeshift tent and bed sheet awning to improve their task lighting and prevent glare on the computer screen. This was definitely a cause for concern, and we made sure to include improving the indoor light quality at the top of the list of facility improvements.
The first part of this series discussed the importance of understanding the nuances of occupant behavior and introduced how anthropology in general, and ethnography in particular, can help commissioning agents adequately account for human factors throughout the commissioning process. Now, let’s look at specific methods in more detail, including the four key concepts of ethnography and how they can be used in the field. The intent is to provide commissioning agents with another means of gathering insights when they find themselves in positions to engage O&M staff and building occupants.

**KEY CONCEPTS OF ETHNOGRAPHY**

Recall that, for the commissioning agent, ethnographies are essentially examinations of building and occupant performance, and that performance is impacted by occupant and organizational habits, processes and procedures, power structures and relationships, and other human factors. There are four key ethnographic concepts particularly relevant to this discussion, the first one being context. This refers to the interrelated conditions within which something occurs or exists—it is where the action occurs and really shapes how the action plays out.

What this means is that to really understand what’s going on in a facility, you need to:

- Go to the occupants and O&M personnel
- Observe daily activities where they normally occur
- Interview occupants and O&M while they are working, in their normal context

This will allow you to discover details and intricacies of occupant behavior, O&M processes, and interactions.

*Above: Human factors that constitute a facility’s relevant rituals, performance and power structures are contextually dependent and potentially highly variable from location to location.*
among the occupants and O&M staff that may have direct impacts on occupancy schedules, needed training and education, enhanced commissioning design reviews, etc. Because being in context helps to jog occupant and O&M memory regarding concerns they may have or why they take certain actions. And it helps you see it from their perspective.

The second key concept is the partnership that needs to occur between the interviewer (commissioning agent) and interviewee (occupant and/or O&M staff). This partnership should be characterized by:

- Cooperation between both parties
- A master/apprentice relationship, where you are the apprentice, encouraging occupants and O&M staff to share their expertise, experiences and stories
- Recognition that the occupant and O&M staff are the experts. The one person who knows the most about his work is the one doing it.
- Coming in expecting to learn

Interpretation is the third key concept, because it refers to the assignment of meaning to observations. As an investigator, you will always be trying to establish meaning in what you discover, whether you're analyzing equipment failure or what individuals' postures, positions and gestures are telling you about the nature of their interactions or how space facilitates those interactions.

For the commissioning agent, interpretation will typically consist of observing a “fact,” generating a “hypothesis” that has an “implication for design or operations,” and then formulating a “design or operations idea.” And if you then make your interpretation explicit by discussing it with the occupants or O&M staff, you can then watch and listen for signals whether they agree with your interpretation.

The last concept is perspective; this is the point of view that a person takes, consisting of a set of pre-conceived assumptions and beliefs, largely influenced by their social/cultural background. As the investigator, it is important to acknowledge your own point of view biases, as well as recognize that occupants and O&M staff have their own biases and personal agendas. By your recognition of the different perspectives in play, and your efforts communicating those differing perspectives among the key stakeholders, you can help create understanding and facilitate two-way communication of occupant/O&M needs and project constraints.

For example, in the context of a large, New Mexico high school that is undergoing a post-occupancy evaluation, the percentage of teachers, staff and students rating their spaces as thermally comfortable falls short of ASHRAE’s 80 percent threshold for a thermally acceptable environment. The students’ ratings of their thermal comfort were also on average lower than that of the adults, as well as wider ranging. By clearly establishing a partnership with the teachers, students and staff (including O&M/ custodians) at the beginning of the evaluation process and conducting our interviews and observations with them in the various contexts of the school (supplemented by data logger and instantaneous measurements), investigators were better able to discern and understand the varying thermal comfort ratings and the underlying perspectives that shape them.

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Though investigators were still in the process of formulating their interpretations, one of their occupant-focused hypotheses for this school’s thermal comfort ratings was the greater variability in student clothing compared to adult clothing (particularly during the warmer months). One’s perspective of acceptable clothing is shaped by peers and family, school policy and society in general, and varies by age, gender, etc. Clothing is also used as a means of establishing group identity as well as signaling membership in that group. For teenagers who are still maturing and experimenting with who they eventually want to be and what groups they want to belong to, clothing is part of that experimentation, both in terms of clothing type and the amount worn.

Clothing also impacts thermal comfort. So when a large segment of the facility population has a wide range of clothing styles subject to frequent changes, it becomes more difficult for design and operations to maximize thermal comfort. One potential solution in this context is to look at a behavior-focused change related to clothing (in conjunction with addressing systems and operations issues). I’m not talking about student uniforms, but instead encouraging the students (as well as adults) to keep layers of clothing available. During the warmer months, occupants should have sweaters, light jackets, socks, light gloves and perhaps even a hat or cap available, if they become cold from the AC or after cooling off from walking across campus. In the cooler months, they should dress in layers so they can peel off clothing if they start to get too hot. In addition, the school could encourage everyone to dress for the exterior season—for example, by avoiding long sleeves during the warmer months and shorts during the colder months. The goal is an occupant population with more equal percentages of exposed skin but still allow expression through clothing.

KEY ETHNOGRAPHIC METHODS
So what specific ethnographic methods and techniques are available to commissioning agents? Three key methods mentioned in the New Mexico high school example are applicable here—interviews, observations and surveys.

INTERVIEWS
Interviews should be conducted of all the relevant occupant groups—the general building occupants, maintenance personnel and the general public (where relevant) to gather information related to the users’ various perceptions of the built environment, as well as interactions within the built environment.

And as previously discussed, it is imperative that interviews be conducted within the appropriate context where the interviewees perform their daily tasks. The typical tools include pen and paper, or a digital recording device (audio and possibly video).

One potential format (modified as needed) for conducting a formal or impromptu interview is as follows:

Introduction
- First, introduce yourself
- Get permission to record
- Articulate your focus and goals
- Establish your master/apprenticeship relationship

“ The Cx Agent as Anthropologist”
continued from p. 9
Transition
• Transition into interview (Example: as you’re encouraging occupants and O&M staff to share their expertise, experiences and stories, ask a question about the context you’re both in.)

Ask questions, observe work/activities and interpret
• Take notes as you interview and observe
• Follow your focus; alternate between letting the interviewee lead and drawing the interviewee towards your primary questions
• Interpret and get validation
• Co-design with the occupant or O&M staff

Wrap-up
• Summarize your understandings
• Thank the interviewee
• Leave the door open for future meetings

To get the ball rolling, you could ask what they were doing in this space before the interview started. You can also ask for anecdotes and stories related to their work and the facility, such as “can you think of an instance where disagreements occurred in the office over control of thermostats or overhead lighting controls?” Anecdotes and stories are effective at illustrating problems or successes in a facility.

You can also use open-ended questions:
• “What are you doing?”
• “Why are you doing…?”
• “Why do you like or dislike your workspace or facility?”

You can also ask more specific questions related to your goals and focus (such as thermal comfort, issues of personal control, effectiveness of occupancy sensors, details of the work order process, etc.), but it’s important not to lead the interviewee to respond in a certain manner.

OBSERVATIONS

Occupants within the built environment do not always consciously recognize every potential strength and weakness of the environments they inhabit. They also may not be certain how to communicate this within an interview setting (particularly if they’re not in the appropriate context). And what people say they do on a daily basis sometimes differs from what they actually do.

Neither will surveys provide a complete picture by themselves. Observations, therefore, can be used to help complete the picture. Two common types of observation include:

• Traditional observation, where one passively observes the actions occurring, such as following a custodian

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Training Plant Personnel at the University of Florida

By Scott Gordon

With more than 900 buildings, the University of Florida operates like a small city and has one of the largest connected-load chilled water systems in the country. In its effort to decrease utility consumption and increase system efficiencies, the campus features both a cogeneration and a state-of-the-art water reclamation plant. The university is also implementing a comprehensive suite of energy initiatives including lighting retrofits, occupancy sensors, temperature setback programs and chiller plant optimization.

For the University of Florida, improving energy efficiency is the most important step toward achieving sustainability in its buildings. That's why the university implemented a comprehensive retro-commissioning plan that included training of university staff in an effort to optimize the operation of its existing buildings. As a result, the university saw a 22 percent return on its initial investment and improved the level of expertise of its Physical Plant Department personnel.

A DIFFERENT APPROACH

The university’s Physical Plant Department is responsible for operating and maintaining approximately 13 million square feet of occupied space, including the electro-mechanical infrastructure. With HVAC comprising more than $28 million of the university's annual utility costs of $48 million, department personnel realized significant energy savings could be achieved by ensuring that air handling equipment was properly serviced and operating as designed.

In the past, with limited manpower resources, the university had conducted these efforts by beginning with an outsourced engineering study, then subcontracting the resulting recommendations to mechanical and controls contractors. However, this two-step approach resulted in additional overhead costs and a less-than-optimal outcome, since each party’s accountability ended sometime in the process. Nowhere in the process were the university’s maintenance personnel engaged or educated around the initiative, thus the desired results were not sustainable.

The retro-commissioning team decided on a different approach. This team included personnel from the company that serviced the university’s chillers and building management system. The building management system is used to monitor and control HVAC systems and equipment in nearly 80 percent of the buildings on campus. Using the system, the team identified the north chilled water loop as the best opportunity to reduce energy consumption. The loop is one of nine on campus, each accommodated by a chilled water plant.

The team chose a training and retro-commissioning strategy that would avoid additional engineering overhead costs.
and provide education for the university’s physical plant staff. The strategic approach involved teams of mechanics and teams of technicians.

The mechanical teams first did a comprehensive inspection of air handling units then cleaned, repaired and reconditioned the units as needed. Technicians then checked the sequence of operations and implemented controls strategies to maximize equipment performance. More complex repairs or replacements were documented and prioritized for future completion. A service company provided additional training to improve the proficiency of university personnel.

**SAVINGS, IMPROVED EXPERTISE, SUSTAINABLE PERFORMANCE**

The university’s investment in its infrastructure has paid off in three ways. First, as improvements were made at the building level, energy improvements became evident in the energy coordinator’s office. Savings resulting from bringing buildings back to design in the north loop alone equate to a 22 percent return on investment.

Second, mechanics witnessed firsthand the impact that dirty coils, broken dampers and leaking control valves could have on the overall function of a building, its HVAC system and utility costs. Throughout the process, mechanics uncovered and corrected other energy inefficiencies, such as pumps operating in a manual state causing an over-pumping condition in the loop.

Third, with a better understanding of the building management system, physical plant technicians implemented occupancy and operations sequencing strategies to save energy. Technicians installed meters that allow live measurement of energy consumption at the chiller plant. Again, by allowing the comparison of actual energy consumption by chillers and ancillary equipment to design expected consumption, technicians are able to scrutinize their performance moment by moment.

In the end, by investing in its infrastructure, the University of Florida has driven savings, increased energy efficiency and paved the way for more sustainable building operations. Building comfort has improved too, which is evidenced by the positive feedback given by the students and faculty. The teams of mechanics and technicians have already moved on to the next chilled water loop, where they’ll be better equipped to identify energy saving opportunities and sustain the performance of the university’s existing assets, and continue the cycle of energy savings, equipment improvement and personal development.

Scott Gordon, LEED AP O+M, has more than 30 years of experience in the mechanical contracting and engineering industry. He holds certifications from the Association of Energy Engineers and is a member of ASHRAE committee GPC 0.2, The Commissioning Process of Existing Buildings and Assemblies, and GPC1.2, The Technical Requirements to Commission Existing HVAC Systems. He is the Energy & Sustainability Product Technical Support Manager for Johnson Controls service.
The Building Commissioning Certification Board of the BCA, is proud to announce the release of a new certification, the Associate Commissioning Professional (ACP).

The ACP is an entry-level certification designed for those who can demonstrate a comprehensive understanding of commissioning concepts and procedures but do not yet have the years of experience in the field required by the BCA’s more advanced certification, the Certified Commissioning Professional (CCP). An ACP applicant will be required to complete an application and pass the same examination issued to CCPs.

The CCP has been recognized as the most comprehensive and subsequently the most elite certification for commissioning practitioners. Those who hold a CCP are part of an elite group of professionals with industry knowledge and project experience that rivals any other certification. Through the successful application of the “three Es” (education, experience and examination), CCP certification is more than just understanding, it’s proof that recipients have commissioned the projects necessary to call themselves commissioning professionals.

The new ACP certification was developed in response to the positive feedback received about the high caliber of commissioning that building owners receive from CCPs, and interest from practitioners who do not yet qualify for the CCP.

“The ACP is really a path to achieving the CCP,” said Mike Eardley, BCCB president. “When an ACP has fulfilled the education and experience requirements of the CCP they may submit the CCP application with client references and earn full status without retaking the exam.”

The ACP will serve as a solid starting point for those looking to begin or further their career in the commissioning industry backed by the excellent reputation of the BCA.

Application fees for the ACP are $350 for BCA members and $550 for non-members with a $150 examination fee. Beginning Jan. 1, for the first time since its release, the cost for the CCP application will increase to $600 for members and $800 for non-members with a $150 examination fee. Both certifications are good for three years, after which recertification is required.

The BCCB is an administratively independent arm of the BCA formed for the purpose of recognizing building commissioning professionals who meet the standards of the BCA. The BCCB comprises volunteers from the commissioning community who actively hold a CCP.

Additional information and applications for this new certification can be downloaded from the BCA website, www.bcxa.org.

— BCA staff
Thursday started bright and early with a breakfast session on commissioning in Japan. Attendees enjoyed the international perspective, and Ryuji Yanagihara from the University of Tokyo described the increasing need for energy efficiency in Japan after the devastating earthquake and tsunami. Motoi Yamaha, director of the Japan-based Building Services Commissioning Association (BSCA), outlined training qualifications for commissioning in Japan and the BSCA’s recent work to promote commissioning. Immediately following, the BCA unveiled its Best Practices on New Construction document to a standing-room-only crowd. Bruce Pitts of Wood Harbinger and co-chair of the Best Practices Subcommittee led this interactive discussion, which received some of the best reviews of the conference. Now in public review, the Best Practices will be finalized this fall.

Other notables on Thursday included sessions on monitoring-based commissioning, perspectives from both utilities and owners and a session on commissioning fire protection systems. In fact, many attendees lamented that they weren’t sure which session to attend. They were happy to know that all presentations would be available for download.

The final morning of the conference was just as action-packed as the day before with a return to core commissioning topics like measurement and verification and OPR/systems manual as well as a nod to the near future with an exploration of cool new commissioning tools. Dan Harris of the New Buildings Institute and Philip Price of Lawrence Berkeley National Lab addressed the concept of whole building performance through utility bill analysis and the use of smart meters. Attendees walked away with, among other things, a greater understanding of the strengths and limitations of remote analysis and metered data. Attendees left the conference Friday afternoon ready to apply new ideas to their work and evaluations delivered high marks for content and speakers. One attendee said “My head hurts from so much information, but in a good way!“ We’re happy to hear that!

NCBC’s focus is always on education, but there was ample time for networking too. Attendees were able to beat the heat outdoors and have some fun on a river cruise along the Ohio River, generously sponsored by the BCA and McKinstry. The breeze along the river coupled with excellent views of the city made this networking event one to remember.

The most common question to NCBC staff was “When is NCBC in 2012?” Well, we’re working on that. Check the NCBC website for updates and expect the Call for Abstracts for 2012 to be released in October.

Catherine Craglow, CMP, is a member of the BCA Staff and a NCBC manager.
around over the course of a day, or observing the activities in a single classroom over a period of time.

- Participant observation, where one actually participates in the actions occurring, such as performing a custodian’s duties over the course of a day.

The typical tools used include paper or electronic forms for traditional (planned, passive) observations; photography; and video.

Some things to look for when conducting formal and impromptu observations include:

- The validation or non-validation of design elements, such as the types and actual use of blinds or shades.

- Demographic factors, such as gender, age, attire, marriage or other social/cultural clues that may inform their perspectives.

For example, in the New Mexico high school, the classrooms incorporate a large amount of glass on the exterior walls for daylighting, as well as the interior walls to allow some minimal daylight to filter into the interior areas. The interior glass also allows teachers to keep an eye on students working in the commons areas. Teachers generally indicated in the surveys, interviews and focus groups that while they liked the daylighting and views in general, there was not enough wall space to use for hanging and displaying things or mounting additional whiteboards. In particular, teachers responded that the interior glass could be greatly reduced or perhaps eliminated completely to retrieve valuable wall space.

However, observations indicated that the interior glass facilitated impromptu discussions and collaborations among teachers as one teacher would see another walking by his or her classroom and then exit to the corridor to have a quick discussion, something that was not indicated in the surveys, interviews or focus groups. Here was an unintended benefit of the interior glass that seemingly most teach-

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Superior building performance starts with superior commissioning

Whether your facility is new or existing, McKinstry’s commissioning services are your guarantee of exceptional building performance from the beginning and over the long haul. For nearly two decades, we have provided commissioning services as a vital component of our integrated project delivery process. This expertise enables us to support clients in the design, construction, operation and maintenance of superior facilities that keep tenants comfortable and bottom lines strong.
ers were not consciously aware of, and it would not have been discovered using only the interviews and surveys.

**SURVEYS**

Formal surveys supplement the data gathered through interviews and observations. They can tap into a much larger number of people than interviews within a limited time frame, and also provide informative quantitative data that can be used in a variety of statistical analyses.

The specific form that a survey will take, and the questions used, will depend on the goals and scope as defined with the client. The methods of implementation can either be via paper or online methods using tools such as SurveyMonkey, Formstack and others. In general, online implementation methods are superior to paper in terms of ease of distribution, collection and analysis. It’s important that the right questions are asked, and depending on the scope of the project, a specialist may be warranted to help develop and implement the survey as well as analyze the results.

**CONCLUSION**

As with any aspect of the building construction industry, a successfully implemented commissioning process involves an understanding of occupant and O&M staff needs and behaviors in order to ensure that the constructed facility is meeting those needs and the design intent, as well as ensuring that the design intent meets these needs to begin with.

By making use of anthropological and ethnographic methods to engage the occupant and O&M staff, you can gather insights into their needs, concerns and interests through the stories that they tell and you observe. Such a process also helps create a shared degree of understanding among all they key stakeholders, further insuring a successful project for all involved.

Marcel Harmon, PhD, PE, LEED AP O+M, is an anthropologist and engineer. He leads M.E. Group’s Human Inquiry services, which seek to better understand and optimize the reciprocal relationships between people and the built environment.

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The BCA has another great line-up of commissioning-related technical training webinars. These unique sessions are presented by industry experts with live Q&A. Gain valuable knowledge from the comfort of your home or workplace. All you need is a computer and a telephone.

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**Oct. 12**
Demand Response and Commissioning Considerations

**Nov. 9**
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**Dec. 14:**
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The 2011 webinar series is generously sponsored by our education partner, Eaton Corporation.
Whether you are interested in ensuring that your new building systems perform interactively in accordance with operational needs or identifying opportunities to improve conditions and achieve savings in an existing building, Eaton’s Energy Solutions group is focused on helping you manage the integrated, often complex process. We help administer a systematic commissioning approach that ensures the most efficient use of natural resources that can result in reduced operating costs and risks, improved work environments and productivity, increased traction with sustainability initiatives and compliance with energy legislation. These capabilities enable us to evaluate, guide and direct your decision-making processes to meet your objectives.

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