

# The Checklist

A Quarterly Journal of the Building Commissioning Association



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## Contact Us

Building Commissioning Association  
1600 NW Compton Drive  
Suite 200  
Beaverton, OR 97006  
877.666.BCXA (2292) Main  
503.747.2903 FAX  
[www.bcx.org](http://www.bcx.org)

## LETTER FROM THE PRESIDENT

**Dear Members,**

*A tough market and tough year so far, but the BCA is getting it done.*

As we look back at 2014 and compare it to where we wanted to be, we realize that we are not quite where we wanted to be. As commissioning providers and stakeholders in buildings, we are great planners and goal setters. Unlike buildings and systems, which respond in predictable ways to us, markets and attitudes often do not. Our 5-year Strategic Plan, developed in 2013, was bold and aggressive. This year we have been faced with lower than expected economic conditions and are seeing membership growth flat across almost all associations. We are making progress, albeit slower than we prefer. The BCA's plans and goals are sound, but it's difficult to match events with the flow of resources. We are impacted by current market forces that affect all associations in a variety of ways, including ours. Time continues to be our most precious resource.

Despite these challenges, today we have more potential to shape the built environment than ever before. We are evolving quickly as a community of practice and as a result the BCA is "growing up quickly." We are also shouldering the "grownup" burdens of a professional association.

At the beginning of this year we set out to "foster increased communication within and beyond our association that showcases the BCA's industry knowledge and experience, and deepens our connections with other organizations and peers in the building community." We are staying engaged with key organizations – AIA, ASHRAE, NIBS, DOE, ACEC, APPA, ICC, and others – strengthening industry relationships and making positive influences to the thinking about commissioning beyond BCA committees and processes. Here are the top highlights from 2014. We —

- Increased our reputation (BCA members and staff represent us and Cx in all forms with professionalism and knowledge)
- Worked with government and industry stakeholders to develop criteria for commissioning professional certification and national Cx guidelines
- Facilitated the Building Commissioning Certification Board's effort to acquire ISO 17024 accreditation
- Planned and produced a hugely successful NCBC conference in May, at the Connecticut Convention Center
- Began updates to the Commissioning Handbook to include the most up-to-date information on all aspects of building commissioning (publication target 2015)
- Got underway with revisions to the BCA New Construction Commissioning Best Practices resource documents and templates
- Sponsored the National Institute of Buildings Science Annual Conference & Expo: Building Innovation 2014



- Joined with twelve major organizations on a team representing the commissioning industry to develop the 'Building Performance Alliance' (BPA) "Strategic Guide to Commissioning" report to the ASHRAE Presidential Ad Hoc committee. The report communicates commissioning goals and objectives, intended to "lead to increasing overall building and system performance, and protect the existing and established industry interests and processes/procedures"
- Signed a Memorandum of Understanding with Continental Automated Buildings Association (CABA), a Canadian international membership association, to support each other's missions in the building community

**2015 promises to be exciting and rewarding...** a few examples of what we will undertake:

- Complete BCCB's ISO 17024 accreditation
- Update policies and procedures to match our strategic goals and objectives
- Improve our internal effectiveness overall in terms of board governance improvements and additional resources
- Deliver the most innovative NCBC 2015 ever, in May in St. Louis, Missouri. Our call for abstracts yielded a wide array of exciting new speakers and topics on The Future of Commissioning.

Starting now and engaging deeply in 2015, I'm asking for unity in the commissioning community. If we all – associations and other stakeholders in the building industry – focus on our common ground and lead from the FRONT, we will move the commissioning profession into the future alongside technologies and services that are coming our way fast. We will have to take educated risks, and we will reap the rewards.

I'd like to express my personal thanks to our superb staff, Liz, Sheri, Diana, Kirsten and Rosemary – there are none better in any industry. And thanks to our officers, board, committee members and chapters for all your hard work and time in 2014.

Finally, congratulations to our newest BCA elected officers (see page 6) for the International Board and BCA Chapters – we're all looking forward to the new energy and your fresh ideas.

During this Holiday season take time to focus on what is important - family, friends, and special time together. In spite of all the rushing around, I encourage you to renew your faith and your relationships, and enjoy the rich blessings only these things provide. The work will be here for us to re-engage in 2015.

Sincerely,

Bill McMullen  
President



# RENEW YOUR PRIDE

By Liz Fischer, Executive Director

I want to take this opportunity to thank you for your memberships, both new and renewing. I am proud to represent all of you as the Executive Director for THE Building Commissioning Association. You are the BCA and you make up a unique group of stakeholders that represent the best in the commissioning practice.

**What does the BCA do for you and the industry?** Here are the **Top Five Things You Need To Know About The BCA** as you consider renewing, and as you recruit others to the association.

- 1. Advocacy** for the commissioning process and professionals who provide the service. We work with multiple types of organizations, public and private, to support the practice of commissioning. Through our work on the Commercial Workforce Credentialing Council and International Code Council we are ensuring the voice of BCA membership is being heard.
- 2. Public Relations.** Through its many connections with governmental, regulatory and other organizations, the BCA is always putting a positive spin on the commissioning profession. This helps your company sell its services.
- 3. Resources and tools.** The Knowledge Center on the BCA website is filled with informative articles, from our e-Journal "The Checklist," BCA Best Practices for new and existing buildings, templates to help you do your job and other industry resources.
- 4. Education and Training.** Recently we have invested in building our curriculum and revising BCA trainings to meet the new publicly approved Job Task Analysis for CxPs. These trainings, all offered at reduced rates for members, along with the popular Spring and Fall webinars, the annual National Conference on Building Commissioning and many chapter events help build the next generation of CxPs. We also endorse several other training initiatives including the PECL and University of Wisconsin programs.
- 5. Networking.** Through our Chapter events and NCBC, the BCA offers many great opportunities for members to connect with peers to exchange ideas, ask questions and collaborate. We produce NCBC, an important event dedicated to commissioning and improvements in the building industry. It's a place to learn, share, and join with the experts. The NCBC Committee is shaking up the conference this year to offer you an opportunity to customize your learning at the conference on the future of commissioning. Our Exhibitor Event offers you the opportunity to talk with those who help you deliver a quality job.

## STOP!

Before you turn the page, I'm asking you to stop for just a moment to pause and think about your association and your role in the BCA. I'm asking you to consider the word **PRIDE**. All of us have many things in our lives that we take pride in. I'm proud to be an American, a father of three wonderful children and happily married for 23 years to a very successful businesswoman. I am proud of what I do and who I work for. And I'm proud of the BCA for what it does to support my career and our industry. Renew your pride in the BCA by renewing your membership. Show your pride in the BCA by recruiting new members.

**Craig Hawkins** Vice President  
BCA International Board of Directors

That's a lot to be proud of, but we could be better with your help. Your dues represent your investment in your career and in the profession of commissioning. Like any business you must invest to see a return. That's true not only for your membership dues, but also for the time you give. I like to believe the small staff I have at headquarters can do anything – but it's actually the collective effort of the many BCA volunteers within Chapters and Committees that helps us meet goals and advocate for the entire membership. When you spend just 52 hours a year – or as our past president Carl Lundstrom use to say, *"just an hour a week"* you can make a difference in delivering the mission of the BCA. By volunteering at the BCA you can:

- Connect with important industry decision-makers, opportunities, RFPs and RFQs posted by and for BCA members
- Contribute to training the next generation and building best practices and standards that shape the future of commissioning
- Protect and elevate your profession (remember your agreement to abide by the BCA Attributes and promote your professional status)
- Network with peers for personal and professional growth to help you meet your career goals (which, by the way, also looks good for your employer!)
- Give something back to your profession and the built environment

### Renew Your Pride (cont.)

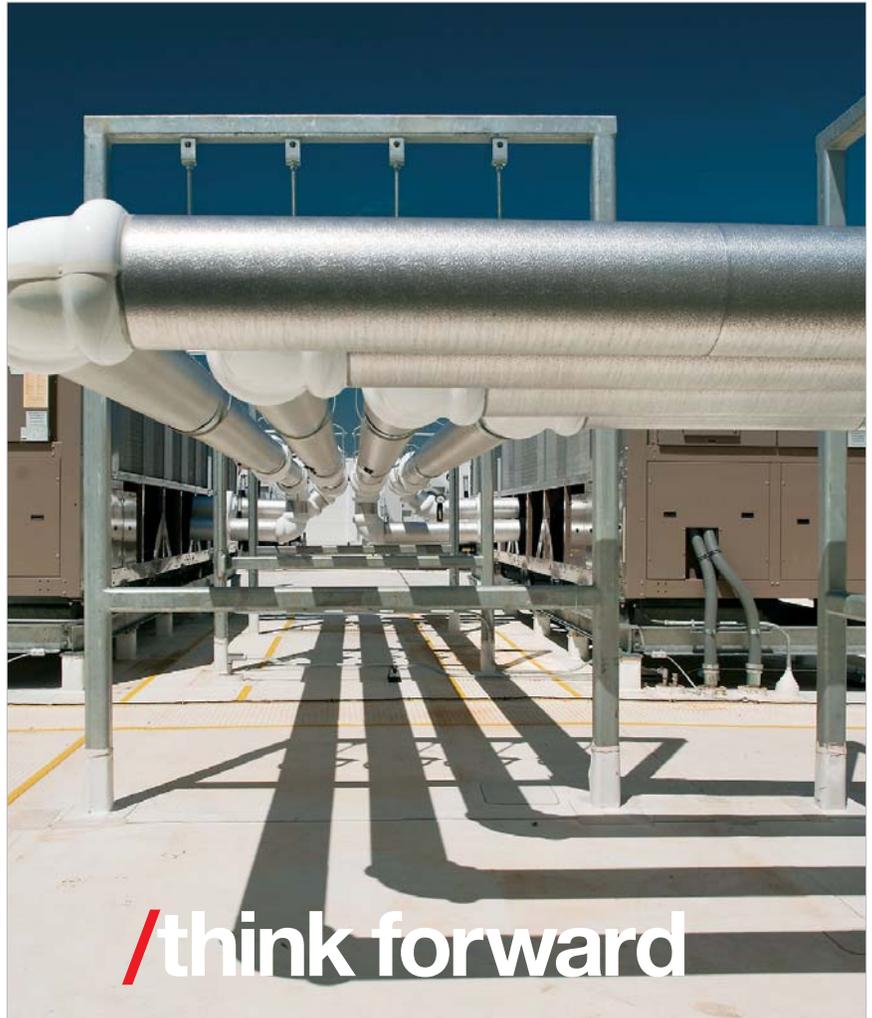
Most importantly you will help to elevate the image of the commissioning profession by being a member, agreeing to the BCA Attributes and volunteering your time. It's true that there is some duplication of effort between the BCA and other associations, but here's what you must know: there is no other association more dedicated to advancing the commissioning profession in the building industry.

For the BCA to be successful we need financial support and involvement from current members and from those who have yet to join. Like the commissioning process itself, we need a team to deliver high performance.

You will profit through participation. Your membership is an investment that will provide a strong ROI if you let it! Together we will make a difference.

**"Everyone has the power for greatness; not for fame, but greatness, because greatness is determined by service."**

Martin Luther King, Jr.



**/think forward**

As of January 1, 2014, PageSouthernlandPage is known simply as Page. We will continue to do business under our legal name, Page Southerland Page, Inc., but our new brand represents the transition to an incoming new generation of leadership and the continuing evolution of our 116-year-old firm. We are the same firm, the same people, and we are still dedicated to our clients and will continue to commit to them the same level of quality service, dedicated work ethic and professional excellence as we always have.

**Page/commissioning**

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# ELECTION RESULTS FOR 2015

## MEET YOUR NEW REPRESENTATIVES!

Let's extend hearty congratulations and welcome to the 2015 Building Commissioning Association's newly elected International Board and Chapter Board of Directors.

### International Board Members



**William McCartney**  
Director-at-Large  
Isotherm Engineering Ltd



**Bruce Pitts**  
Director-at-Large  
Wood Harbinger, Inc.



**John Villani**  
Director-at-Large  
Grumman/Butkus Associates



**Daniel Forino**  
Director-at-Large  
Horizon Engineering Associates, LLP

### Regional Representative



**John Penney**  
Regional Representative - Northeast  
John F. Penney Consulting Services, p.c.



**Tom Poeling**  
Regional Representative - Southwest  
U.S. Engineering Company

### Chapter Board Members

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Cx Solutions

#### NORTHEAST



**Mike Eardley**  
Cannon Design



**Ryan Lean**  
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#### CENTRAL



**David Lewis**  
Clayco Construction



**Tom Cappellin**  
E.L. Pruitt Company



**Kevin Vander Klay**  
Grumman/Butkus Assoc.



**Jim Feeney**  
Ameresco Inc.

#### NATIONAL CHAPTER



**Joel Bell**  
GHT Limited



**Wayne Williams**  
Architect of the Capitol



**AJ Speicher**  
Borton-Lawson

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## Chapter Board Members (cont.)

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### NORTHWEST

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**Brendon Mattis**  
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**Jeremy Wolff**  
McKinstry



**Jeff Yirak**  
Wood Harbinger, Inc.

### SOUTHEAST

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**Jim Magee**  
Facility Commissioning  
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**Rod Rabold**  
University of NC



**Mark Nunnely**  
Nunnely & Associates, Inc

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**Mike Kaar**  
Iconergy



**Loren Morris**  
TestMarx Commissioning  
Solutions



**Josh Harwood**  
McKinstry - Rocky  
Mountain region

### TEXAS

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**Jonathan Vaughan**  
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**Gerald Kettler**  
Facility Performance  
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**Christopher Aaltonen**  
CFMS Consulting Inc



**Christopher Piche**  
Integral Group



**Andrew Gledill**  
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**Craig Hatch**  
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**Chris Leaming**  
MMM Group Limited



**Daniel Boyton**  
Zenith Commissioning  
Consulting



**Russell Smalley**  
Western Mechanical Services (1977) Ltd.

## BUILDING CONTROLS:

# TO BE (CENTRALIZED) OR NOT TO BE, THAT IS THE QUESTION

By Jeff Yirak, PE, LEED AP BD+C, O+M  
Associate Principal, Commissioning, Wood Harbinger

Building control systems have become highly sophisticated computer systems capable of operating nearly any piece of heating or cooling equipment. Achieving this control capability requires good input data and robust software programming. For certain systems, such as refrigeration systems, it is often advantageous to use decentralized controls for critical functions, such as compressor operation and refrigerant safety circuits. In a world where faster, better, and cheaper weigh equally, HVAC design engineers are faced with a choice between decentralized packaged control systems and whole-building direct digital control (DDC) systems to operate their equipment, each with its own integration challenges.

### DECENTRALIZED PACKAGED CONTROLS: OUT OF THE BOX FUNCTIONALITY

The main advantage for packaged controls is that they're provided by the manufacturer for exactly the unit onto which they're installed. Unlike DDC systems, in which off-the-shelf components must be custom-installed, programmed, and tuned, a packaged controls system is often ready to go right out of the box. All control logic, alarm conditions, and safety circuits are already in place. One only has to connect power, and the system is up and running.

This system works well for commodity equipment, and less well for custom equipment. For commodity equipment, such as boilers, chillers, and unitary air handling units, packaged controls provide an easy to use and safe interface through which the building DDC system can communicate. A boiler control panel, for instance, can stage the sequencing and firing rate for the attached boilers based on a supply header temperature set point input provided by the building DDC system. This saves the DDC programming from creating complicated, customized programming containing numerous PID loops and safeties to control the firing rate of the boilers under all possible operating scenarios. Packaged controls have a distinct advantage when operating proprietary equipment.

One disadvantage of this hands-off approach is the lack of flexibility or customization ability for the design engineer. Today's highly efficient HVAC designs require sophisticated control schemes, such as daytime temperature or ventilation setbacks to reduce energy consumption. If these sequences are not provided by the equipment manufacturer, there may be no way to implement the specified sequence of

operation. If this is true, it will require field modification of the packaged unit, resulting in a Frankenstein combination of packaged and DDC controls yielding unpredictable results.

A second disadvantage is the lack of external visibility to the operator through the DDC system. The decentralized packaged controls may not have provisions for accepting input from or providing outputs to the DDC system. This lack of visibility and control leaves building operators with little diagnostic information in the event of equipment failure. Trend log data may be nonexistent, and the only indication of alarm may be a blinking LED on the affected unit. This is a relatively primitive way to operate today's high-performance buildings.



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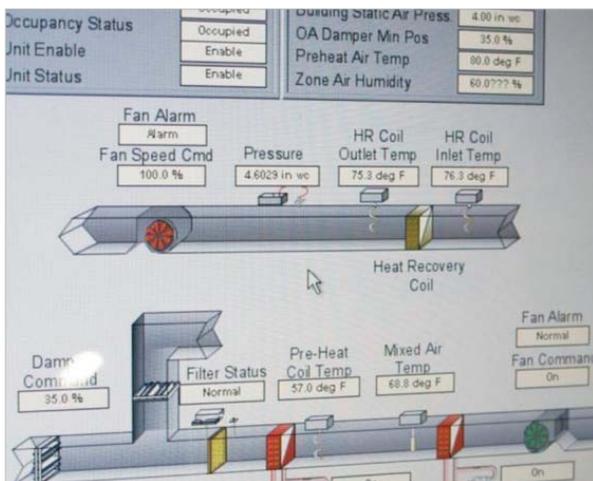
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## DDC CONTROLS: CUSTOMIZATION AND FLEXIBILITY

IA building-wide DDC system is a highly customizable computer system built with nearly any combination of controller inputs, outputs, and programming logic required to implement the HVAC design engineers' control sequence of operation. This customizability leads to great flexibility on the part of the HVAC design engineer to refine the operation and system interaction of HVAC components like fans, dampers, and valves. The design engineer will not find him- or herself surprised or limited by the "standard offering" of a unit's packaged controls.

Besides allowing for greater flexibility in design and construction, building-wide DDC systems can easily provide operators with exactly the kind of information they want to see when operating a building in a customized graphical interface. Energy performance monitoring for Measurement and Verification plan compliance and fault diagnostics are some of the software features not found in packaged controls that can be integrated into the DDC system and improve the building operator's ability to monitor the facility.

One disadvantage of DDC systems is that they're as custom and prototypical as the mechanical systems they operate, which can result in complicated operation and interaction. The HVAC design engineer creates a schematic control sequence of operation, but it's up to the DDC programmer to implement the design intent. This allows some latitude and creativity on the part of the programmer, and the results can be unpredictable. A high degree of collaboration and communication between the design engineer, the DDC programmer, and the Commissioning Authority is required to ensure the DDC system provides the desired operation and required functionality.



A second disadvantage of DDC systems is cost. Packaged controls are an economic solution for small unitary equipment, such as a furnace or rooftop air-source heat pump. If the packaged controls sequence of operation meets the design engineer's requirements, the additional expense of duplicating the programming and providing independent control components, such as current sensing relays and motorized actuators, is hard to justify. Packaged controls have their place; DDC is not the only or ultimate solution.

## ACHIEVING INTEGRATION

A high efficiency HVAC system will often include a building-wide DDC system that must integrate with some packaged controls, such as a chiller or boiler control panel. This integration can be challenging. Care must be taken to ensure that the packaged controls have the readable and writable points available to integrate and communicate with the DDC system. A communication interface, such as BACnet or Modbus, is an economical option. This communication interface provides a lot of readable data to the DDC system, but not each of the points is writable, or, "commandable."

The HVAC design engineer should clearly specify which points are to be provided, and show these requirements in the contract documents, either as text in the project manual, or as a table on the contract drawings. The HVAC design engineer should also indicate whether each point is a part of the packaged control system or the DDC system. Equipment submittals should be carefully reviewed to verify the expected interface between the DDC system and the packaged system, such as a terminal strip, is present. Finally, the Commissioning Authority should review and understand the demarcation between the packaged controls and the DDC system so he or she can verify the control responsibility during start-up and functional testing. This sequence of events will result in reduced start-up times and a smoother turnover experience.

## BETTER TOGETHER

Today's HVAC design engineers face integration challenges when specifying the combination of decentralized packaged control systems and whole-building DDC systems that high-performance buildings require. Balancing the use of efficient packaged control systems with robust and capable DDC systems, and making the two systems work together, leverages the strengths of each to the best advantage of the building's operation.

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### ABOUT THE AUTHOR:

Jeff Yirak loves the "high-wire act" of diagnosing and solving complex, unique problems. He is Project Manager for the majority of Wood Harbinger's diverse portfolio of commissioning projects for aviation manufacturing facilities, central energy/utility plants, K-12 and university campuses, and healthcare facilities. Jeff served two terms as Treasurer of the NW Chapter Building Commissioning Association Board of Directors. His publishing credits include multiple articles in national trade journals, and he is also a regular contributor to Wood Harbinger's Fuel for New Ideas E-Newsletter and Insights blog. Follow Jeff on Twitter @JYirak\_WH.

Qualifications-Based Selection (QBS) is an evaluation, scoring and selection process for owners to use when hiring building project professionals. It encourages owners to solicit, and project consultants to submit, proposals for specific scopes of work that are evaluated based on qualifications, shortlisted and selected for budget negotiations after preliminary selection, but before contracts are signed.

QBS for architectural and engineering design services on Federal construction projects was formalized by Congress in 1972 through the Brooks Act for public owners *“to negotiate contracts for architectural and engineering services on the basis of demonstrated competence and qualification for the type of professional services required and at fair and reasonable prices.”*

The purpose of this law was to create a policy and a broadly defined process that requires owners to review and accept qualifications first, before even viewing or negotiating price. Under the Brooks Act, QBS is required only in the federally-funded public project sector; it is not universally applied – or always recognized – as a tool for private sector projects. Forty-two years ago it was intended to discourage Federal property owners and managers from contracting large building design services based exclusively on price. The policy was not, and is not, a mandate for the private sector, but it is slowly gaining ground among building-related professionals like commissioning professionals (CxPs), well beyond architectural and engineering designers.

## COMMISSIONING AND QBS

Commissioning is not specifically named as a professional service in the Brooks Act. In addition to A/E design, the U.S. Federal Acquisition definition of services within the QBS framework includes *“Such other professional services of an architectural or engineering nature, or incidental services... including studies, investigations... evaluations, consultations... construction phase services... drawing reviews, preparation of operating and maintenance manuals, and other related services.”* Given that these definitions are so closely related to commissioning practice, and that some building owners and jurisdictions already consider commissioning a professional service, clearly it is time to align what makes sense to building owners and the broader buildings industry.

The time has come to revisit QBS in relation to building commissioning. What are professional qualifications, as provided for in the Brooks Act? Quite simply, they vary. The policy describes neither a specific process nor qualifications that would, by virtue of selection on these, result in quality work. Numerous professional organizations endorse QBS, and have developed internal policies and useful guidelines

## Examples of North American QBS proponents:

- American Council of Engineering Companies
- American Institute of Architects
- American Public Works Association
- American Society of Civil Engineers
- Associated General Contractors of America
- Federation of Canadian Municipalities
- National Society of Professional Engineers
- Royal Architectural Institute of Canada
- U.S. and Canadian Federal Government
- U.S. States and Canadian Provinces

for its use. But like commissioning – given the array of standards and latitude of qualifications -- QBS is not a uniform process; expectations vary from state to state, and project to project.

QBS for Cx is not in itself a procedure for getting the best provider in any market or region. One thing is certain among all stakeholders in buildings, however: selection of commissioning on lowest price – which in any public procurement scenario is the de-facto result of an RFP or bid – strips the rigor out of the commissioning process and defeats the purpose of Cx in the first place. Cutting back on quality assurance processes in any industry does not result in higher quality results... ever.

The future of buildings is clear: the global drive toward continuous improvement of building materials, systems and practices demands a quality approach – not only in the context of architecture and engineering, but in terms of all services that contribute to better building performance.

## MISSING LINK

Properly performed, commissioning is the continuous quality assurance link across disciplines and schedule in a building project. It should be regarded by owners as one of the most important services to be hired based on qualifications. Along with rigorously designed and earned Cx certification, QBS is a tool that owners and CxPs should rely on to ensure that capabilities meet expectations. However, QBS documentation is typically written only as a guide for owners to ensure their procurement practices are conducted in accordance with the Brooks Act.

The link that is not well documented is an approach that CxPs and other professional services should take, in order for owners to prepare RFQs and RFPs that solicit high value, project-specific quality assurance capabilities.

Let’s say, for example, that you’re a commissioning professional and you read an RFQ for commissioning. Are you going to just submit a price alone? How about a laundry list of completed

## Read the BCA's QBS Position Paper

<http://www.bcxa.org/wp-content/uploads/2014/12/QBS-Position-Paper.pdf>

### QBS steps for owners broadly include:

- Establish Evaluation Criteria
- Solicit Qualifications
- Develop Short List
- Interview and Rank 3 Providers
- Owner/Provider Jointly Refine Scope and Contract Terms
- Negotiate Contract  
(or move on to 2<sup>nd</sup> Ranked Provider)

projects? General or vague boilerplate statements? Sounds a bit ridiculous, doesn't it? Some owners may actually solicit and accept such "shorthand responses" or minimum "qualifications," but much remains on the table. Shortcuts are a perfect scenario for change orders, defects and unhappy stakeholders.

Your task as a CxP is to win work by demonstrating qualifications so that owners understand your technical knowledge, related quality assurance practices, competence and proof in the form of similar projects, team members' past experience and, ideally, a CCP certification earned from the Building Commissioning Certification Board. Only then, in a QBS scenario, should the price for the work be set. There will always be discussions of "unknowns" at this phase, unless the owner has provided a detailed and finely-honed scope of work that leaves no stone unturned, and no room for additional considerations.

In some cases, you may not be submitting a proposal directly to the owner, but rather through a design or design/build team where your qualifications will be added to theirs. In that case, at minimum you can significantly improve the team's qualifications by providing the quality assurance and qualifications information they should have – but likely had not – requested. When clients learn to expect robust qualifications, they will start to ask for them.

"Fallacy: ... cost of service (price) and qualifications to serve (value) can be discussed simultaneously. **False.** Once price is mentioned then selection is always based on the cheapest proposal offered. And, why not? All contenders have already been found 'qualified'."

**Kaye Henderson** former Secretary  
Florida Department of Transportation

Missing link fastened and secured? Maybe. Even in the public sector QBS doesn't always function as intended. As an example, one government agency recently skirted the Federal QBS policy with an award solicitation using "Lowest Price Technically Acceptable Source Selection Process." While sometimes referred to as best value, it's not. And it's not likely that best practices and best outcome will be achieved through an award that starts with "lowest price." The reality is, most fees (i.e., rates) are likely very similar in any region or market and if the effort is truly based on a project specific scope of work the fees will be fair and reasonable. We have had accepted guidelines and standards in place for a good while on the process itself.

A lowest price-based process invariably results in revisions to the scope, schedule and fees to accommodate changes, omissions, new ideas, etc. during the course of design and construction. When low bid is the decision-maker default, everyone knows that quality suffers; there are untold examples of flawed buildings designed and constructed on the basis of lowest price instead of qualifications for a specified scope of work. By negotiating a price after evaluating qualifications and coming to an understanding on detailed scope, clients and CxPs can work together to ensure project agreement and cooperation before the contract is finalized.

**Advice to CxPs:** To proactively prevent commissioning from being "commoditized," it's time to revisit QBS in a commissioning context, learn the process and educate your clients.

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# How Do You Propose?

By Diana Bjornskov

No two projects are ever the same, no matter what the scope looks like in a solicitation. But many organizations write the same basic proposal over and over. Writing a proposal is stressful. It takes time, and it does cost money. Unfortunately, as a result of the common “clone the boilerplate” process, bad proposals can contribute to a perception that commissioning is a commodity and that low bid is the client’s only criterion for selection.

Writing a proposal is a journey of proof to help clients select professional services that are focused on their outcome: responsive, compelling, with high impact benefits. Ideally, proposals are the end-product of relationship development and positioning with clients for work that has yet to be requested. The opportunity to engage with a client beforehand, understand project needs and objectives, and perhaps even to influence drafting of the RFP or RFQ, goes a long way toward winning work.

With or without an existing relationship, competitive proposals will be evaluated (formally or not) side by side for what they deliver. If your proposal is reviewed using a qualifications-based selection (QBS) process, the “what and how” will outweigh the “how much.” If pricing is included in the proposal, most evaluators will first turn to the budget or pricing page – unfortunately, that’s only natural. . . but even in a bidding scenario they will go back to the executive summary to read, and then read further if it’s worthwhile.

A proposal gives you the chance to differentiate your company from your competition and “strut your stuff” (not your fluff) in a way that captures clients’ attention and holds onto it beyond pricing. The key is to start out by recognizing your client’s project drivers and expectations – not just a systems approach to getting the job done, but one that shows you understand the owner’s vision for the project’s long term success (not your vision, *theirs*). Write down their critical success factors. Use them as your guide.

“If you cannot differentiate yourself in technical, contractual, service or management areas, then the customer will most likely choose based on price. To sell value-added, you must be able to identify concrete, positive differentiators.”

**David G. Pugh** PhD, *Proposing to Win*

## BEFORE YOU WRITE

Even a small project or a small proposal team benefits from taking steps to carefully construct a proposal. These steps can be expanded or contracted to meet the project at hand but should not be omitted. Here is an action plan for a successful proposal development process:

- 1. Read the RFP/Q. Thoroughly.** You must understand the nature and scope of the entire project. The linked example includes detailed commissioning. Commissioning scope begins on page 140. [http://apps1.eere.energy.gov/buildings/publications/pdfs/rsf/annotated\\_rfp\\_ucsf.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/rsf/annotated_rfp_ucsf.pdf).
- 2. Charter a proposal team (2 or more, if possible).**

The proposal team brings certain skills and experience to the proposal: client relationship/knowledge; similar technical projects, building types, systems; budget development and analysis; competitive knowledge; and persuasive writing. The purpose of this team is to:

  - Evaluate project opportunity and client’s criteria for selection
  - Identify and analyze owner’s drivers and key issues for successful project completion
  - Create a compliance matrix to make sure mandatory requirements, important criteria, and persuasive messages for decision-makers will find their way into your proposal document
  - List the ways your client will measure your ability to help them achieve success
  - Identify and analyze project risks and potential barriers to success (schedule, cost, technical capabilities, systems knowledge, quality, personnel, partnerships, etc.); conduct a SWOT analysis of your ability to win the work
  - Describe your competitive differentiators – what do you offer the project that no one else does? Why choose you, and not “them”?
  - Define any research required to be responsive
- 3. Define your strategy.**
  - What’s your compelling value proposition?
  - What’s your approach to the project (applicable methods/practices)
  - What’s the owner’s expected outcome of your work (specific to this project)
  - How will you do the work?
  - Programmatic components
  - Technical components

### 3. Define your strategy. (cont.)

- Management components
- Resources required
- How will you work with owner's project team?
- How will you keep the owner informed?
- How will you mitigate risk to the owner and the project?

### 4. Storyboard it (sequence your story).

Sometimes the sequence of a proposal is required by the RFP/Q, and sometimes not. In either case, you should always prepare a well written executive summary and also "sell" your response by hitting target issues throughout your document. A storyboarding session – conducted in a closed room with a whiteboard, easels or other devices for listing and plotting placement for selling points in your proposal sequence – will go a long way toward making sure you continuously drive home your value proposition.

## WRITE THE PROPOSAL

If you take the steps listed above, writing could be the easiest part. At minimum, the following components should be included in every proposal, large or small:

- Executive summary: what decision-makers will read
- Project understanding: your own description of the scope and objectives
- Technical approach: how you will develop a project plan and implement it
- Work breakdown structure (WBS): task list with schedule
- Management approach: how you will manage the project; key personnel (bio, commitment, availability)
- Individual and corporate team qualifications: knowledge, skills, abilities and experience that illustrate your competence to successfully complete the project; specific accomplishments that prove you – and only you – should be hired to provide Cx services.

The most important thing to remember as you develop a proposal is this: your clients are hiring their future, and their future depends on you!



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# HAVE YOU HEARD?

BCA MEMBERSHIP DRIVE ENDS DECEMBER 31<sup>ST</sup>

**December is the last month of our 2014 Membership Drive!**

The BCA has more to offer you than ever before in 2015. We have gained considerable ground in working to keep commissioning professional – instead of becoming a commoditized occupation. Your participation in BCA efforts and discussions about building performance and upcoming codes, standards, qualifications and certification is invaluable, as these issues are now on the horizon and will affect the entire building community. If you're not yet a member, please join in. If you are a current member, remember to renew!



**ST. LOUIS, MISSOURI** MAY 18-20, 2015

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**NCBC 2015: STARTS AT THE GATEWAY TO THE WEST**

When you think St. Louis, you may think, ah yes, Anheuser-Busch Clydesdales. Music. Cardinals Baseball. The Spirit of St. Louis flight. And now, **NCBC 2015**.

Meet BCA and leading commissioning professionals in St. Louis for NCBC 2015—May 18-20<sup>th</sup> at the Hilton at St. Louis Ballpark for updates on the industry, cutting-edge applications and quality education. Enjoy networking with colleagues and exhibitors, earn those much needed CEUs, and be prepared for unique experiences. If you ever had a fantasy of running the bases in a Major League Baseball ballpark, you're going to be thrilled with what's planned for the Annual Dinner!

- Conference agenda and registration details will be made available in January. Registration details can be found at: <http://www.bcxa.org/training/ncbc-2015-attend/>
- If you are interested in sponsoring or exhibiting at NCBC, please contact Karen Groppe at [kgroppe@bcxa.org](mailto:kgroppe@bcxa.org) for further details. Exhibitor space is in great demand for 2015, so get in touch with Karen as soon as possible.
- Exhibitor and sponsorship information is available at: [http://www.bcxa.org/wp-content/uploads/2014/09/BCA.Sponsorship\\_Prspcts.2015.pdf](http://www.bcxa.org/wp-content/uploads/2014/09/BCA.Sponsorship_Prspcts.2015.pdf).
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WON'T YOU MEET **BCA** IN ST. LOUIS?

## BCCB NEWS

### THANK YOU CCP EXAM REVIEWERS!

Many thanks to the BCCB team of commissioning experts who reviewed and classified new CCP examination questions for a major upcoming test revision! These individuals contributed many hours of valuable time to deliver continuing the excellence that is the hallmark of the CCP credential. Thank you!

- Ernie Lawas
- Ryan Lean
- Shane Nault
- Tim O'Neill
- Tom Poeling
- Louis Redmond
- Wayne Williams
- John Wood

The next major steps will be to create the new exam and conduct a beta test. If you are interested in participating in the beta test group or helping with the revision, please contact Rosemary DiCandilo at [rdicandilo@bcxa.org](mailto:rdicandilo@bcxa.org) or call 877.666.2292.

### CALLING FOR CCPs TO SERVE ON BCCB BOARD

Interested in getting involved and further enhancing the respected position of the CCP credential in the industry? The BCCB is reorganizing and soliciting names of current CCPs for volunteer Board and committee positions to open in early 2015. Please share your time and experience to bring the program to its next stage of growth! All CCPs are welcome to submit applications; entrepreneurial skills in strategic planning, negotiation and marketing/sales will be particularly helpful as the program grows.

Please contact Rosemary DiCandilo at [rdicandilo@bcxa.org](mailto:rdicandilo@bcxa.org) for further information.

# CCP/ ACP/ CCF CONGRATULATIONS

The BCA congratulates the following individuals on achieving the Certified Commissioning Professional (CCP), Associate Commissioning Professional (ACP) and Certified Commissioning Firm (CCF) designation.



## NEW: Certified Commissioning Professionals

- **Michael Doherty, CCP, PE Florida, PE Colorado**, Engineering Economics, Denver, CO
- **Moe Fakh, CCP, LEED for Homes, VCA Green**, Orange, CA
- **Jeremy D. Fugere, CCP, LEED BD+C, LEED AP**, Keithly Barber Associates, Seattle, WA
- **David Howard, CCP**, Testcomm, LLC, Spokane, WA
- **Timothy McElroy, CCP, CEM, LEED AP**, Optima Engineering, Charlotte, NC
- **Kevin Perri, CCP, CEM, LEED AP Homes, Commercial Plans and Energy Inspector**, Viridian, Little Rock, AR
- **Steven Playo, CCP, LEED AP**, Pennoni Associates, Philadelphia, PA
- **Ilya Reyngold, CCP, PE CT, CEM, CBCP, CEA, LEED AP, Contractor**, 1st Clas Power Eng. Strategic Building Solutions, Washington, DC

## RENEWALS: Certified Commissioning Professionals

- **Daniel Bryant, CCP**, Smithfield, NC
- **Gretchen Coleman, PE, CCP, CxA, EMP**, Gretchen Coleman Commissioning Group, LLC, Roanoke, VA
- **Carl E. Lundstrom, CCP**, Eaton, Marietta, GA
- **Anthony Martin, PE, CEM, LEED AP, CxA, CCP**, Working Buildings, LLC, Atlanta, GA
- **Dominic Paone III, CCP, LEED AP BD+C**, Integrated Design Solutions, Troy, MI
- **Charles Porter, CCM, CCP, LEED Green Associate**, Hill International, Inc., Pittsburgh, PA
- **Johnathan Jay Wilson, LEED AP, CCP**, KLG Jones, LLC, Greer, SC



## NEW: Associate Commissioning Professionals

- **Dexter Deeds, ACP, Intern Engineer, LEED AP**, Outcome Construction Services, Lenexa, KS
- **Kelsey Leslie, ACP, EIT**, Paladin, Lexington, KY



## RENEWING: Certified Commissioning Firms

- **Facility Performance Associates, LLC**, [www.facilityperformanceassociates.com](http://www.facilityperformanceassociates.com), Dallas, TX
- **Primary Integration Solutions, Inc.**, [www.primaryintegration.com](http://www.primaryintegration.com), McLean, VA

These individuals join the ranks 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.bcxa.org/certification](http://www.bcxa.org/certification).

Not sure if you are qualified? Send us your questions at [rdicandilo@bcxa.org](mailto:rdicandilo@bcxa.org) or call the BCA Hotline at 877.666.2292.

## BCA SPEAKERS

### BUREAU TO OPEN IN 2015

Every year the BCA finds opportunities to present at local, regional and national events about commissioning. Our Board of Directors and other members often represent us at conferences or lecture about the importance of commissioning practice at colleges and universities. We're expanding the BCA Speakers Bureau to take advantage of those opportunities as they arise. If you have a desire to share your commissioning knowledge as a public speaker for the BCA, please complete the [application form](#) on our website at [www.bcxa.org](http://www.bcxa.org), or contact Sheri Adams at [sadams@bcxa.org](mailto:sadams@bcxa.org).

### CALL FOR CONTRIBUTIONS TO THE BCA KNOWLEDGE CENTER

Do you have a paper, article, Cx resource or presentation that the building community should know about? The BCA wants to feature you on our website. Please contact Diana Bjornskov at [dbjornskov@bcxa.org](mailto:dbjornskov@bcxa.org) for more information and eligibility details.

Add the BCA to your library of commissioning resources!

## CALL FOR ARTICLES

### THIS IS YOUR CHECKLIST

The CHECKLIST is your quarterly journal to keep up on news, features and people who contribute to the advancement of the BCA, the commissioning profession and the building industry. We're always on the lookout for thoughtful, well written technical articles and case studies that solve problems or illuminate innovative aspects of commissioning. If you have written or published an article that may interest CHECKLIST readers, please contact Diana Bjornskov at [dbjornskov@bcxa.org](mailto:dbjornskov@bcxa.org).

### PORTFOLIO SURVEY RESULTS

The BCA, in cooperation with several North American organizations, surveyed Owners and project decision-making managers of large property portfolios ("Owners") of higher education, hospital and government facilities to discover methods and challenges for commissioning multi-facility and multi-site portfolios. Read the report [http://www.bcxa.org/wp-content/uploads/2014/12/Portfolio-Owner-Summary\\_2014.pdf](http://www.bcxa.org/wp-content/uploads/2014/12/Portfolio-Owner-Summary_2014.pdf)



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CORPORATE MEMBER

## NEW CORPORATE BCA MEMBERS

- Capitol Commissioning, Inc.
- Comis Engenharia
- CRC Commissioning Engineers, PLLC
- CTE (Centro de Technology)
- Ecotype Consulting, Inc.
- Elara Engineering
- Forsspac
- Gulf Commissioning Group (Re-joined)
- Iconergy
- Kinenergy
- Maiani Construction Services, Inc.
- Skyline Engineering
- Western Mechanical Services (1977) Ltd.

# thank YOU!

## 2014 BCA SPONSORS

We would like to acknowledge and express our deepest thanks to organizations that sponsored the BCA and NCBC this year. Our accomplishments in 2014 are direct results of their generosity and commitment to the commissioning profession.

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### ENDORSEMENTS

- APPA
- ASHRAE
- National Institute of Building Sciences

We also wish to extend special thanks to the Northwest Energy Efficiency Alliance for its generosity in supporting the development of protocols and documentation for ISO 17024 certification of the Building Commissioning Certification Board's Certified Commissioning Professional credential.

## CONGRATULATIONS

### Northeast Chapter Members and Award Winners!

The Northeast Chapter created a project award program to highlight excellence in commissioning. The program provides members with the opportunity to highlight their commissioning projects, and recognizes owners and facilities teams for their focus on improving building performance through the commissioning process. We were pleased to announce the following 2014 Commissioning Project Award winners at our 8<sup>th</sup> Annual Commissioning Summit, held October 14, 2014 in Boston, Massachusetts:

- **Winner Existing Building Category:** Sidney Kimmel Center for Prostate & Urologic Cancers Energy Audit & Retro-commissioning Project; Eneractive Solutions and Memorial Sloan-Kettering Cancer Center
- **Winner New Construction/Renovation Category:** State University of New York at Albany – RNA Institute; Stantec Consulting Services, Inc. and University at Albany
- **Honorable Mention New Construction/Renovation Category:** Bolger Community Center Project; M&E Engineers, Inc. and The Bolger Foundation



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#### Commissioning Contacts:

Chad Luning - [cluning@grummanbutkus.com](mailto:cluning@grummanbutkus.com)  
John Villani - [jvillani@grummanbutkus.com](mailto:jvillani@grummanbutkus.com)

#### Madison Region

700 Rayovac Drive . Suite 307 . Madison, WI 53711-2479  
608.278.1890

#### Commissioning Contacts:

Lor Steiner - [lsteiner@grummanbutkus.com](mailto:lsteiner@grummanbutkus.com)

#### Milwaukee Region

1011 North Mayfair Road . Suite 300 . Wauwatosa, WI 53226-3431  
414.476.8980

#### Commissioning Contacts:

Jeffrey Conner - [jconner@grummanbutkus.com](mailto:jconner@grummanbutkus.com)  
Bob Bayne - [rbayne@grummanbutkus.com](mailto:rbayne@grummanbutkus.com)

#### New York Region

G/BA Commissioning Services, Inc.  
306 Washington Street . Suite 305 . Hoboken, NJ 07030  
201.822.1173

#### Commissioning Contacts:

Luis Contreras - [lcontreras@grummanbutkus.com](mailto:lcontreras@grummanbutkus.com)  
Jessica Cruz - [jcruz@grummanbutkus.com](mailto:jcruz@grummanbutkus.com)

[www.grummanbutkus.com](http://www.grummanbutkus.com)

# SPOTLIGHT:

## BRYAN WELSH: 10-YEAR CCP

Bryan Welsh didn't start out to be a commissioning provider. In fact, he didn't know he was commissioning buildings back in the day, because the term wasn't yet in circulation. As a mechanical engineer, he spent his early career years as the Director of Maintenance Operations for a Seattle area school district. When projects came online he found they rarely worked as planned. Brand new buildings weren't performing and often consumed twice the energy as expected.

*"My training for building systems came from the responsibility to take care of them. A mechanical engineering education gave me the tools, but they don't teach systems ...it was important to get familiar with all types of building systems at the school district."*

Being Bryan, he went to school to learn how building control systems work and how to use them for trending. He met with the district's design team to review building performance, worked with them to develop a plan for quality assurance improvement and, in the process, reduced energy consumption well beyond the goal.

When Pete Keithly, a BCA Founder, started his commissioning business around 1990, Bryan was working on a master's degree in business administration. He joined Pete where they worked together for about six years – at first out of Pete's basement – until Bryan struck out on his own in 1996. Over the years Bryan built a well-trained commissioning team which was formalized as Welsh Commissioning Group in 2005.

Early on, Bryan joined the BCA where he was among the members who wanted to formulate a quality credentialing process. At the time, commissioning was not viewed as a discrete profession, and the group believed that a legitimate certification would be a valid measuring stick to judge an individual's – and a company's – ability to provide good commissioning services. Bryan saw certification as a need, and volunteered to participate in its development.

As a result, Bryan became chair of the committee that developed the Certified Commissioning Professional (CCP) credential. The committee took a rigorous approach to the process in order to define, design and build the program and eligibility requirements. They polled BCA members and NCBC

*"It was a learning exercise for all of us on the committee. We figured out what it should look like, laid out program requirements, and created test writing committees. I insisted that we all formally apply for the exam, then cross-reviewed the applications, and took the test. It was a chicken or egg thing - how to get CCPs on the review board while showing people we didn't grandfather ourselves in."*

attendees to understand what a credentialing program should look like – what would be important to them for the certification process and goals for achievement.

A lot of discussion – including both agreement and criticism – ensued. It was agreed at the beginning that the test should not include technical questions, but instead should focus on certifying for a process that applies equally across building systems. Some of the steps were investigative, others procedural:

- How much and what kind of education should be necessary?
- How much experience to qualify?
- What should be included in CCP testing?
- How high to set an achievable bar?
- Should the CCP committee function in a testing role? A review role?
- How would committee members avoid a conflict of interest?

The committee hired a consulting firm to help guide them through the defensible and logical steps for developing a certification program. There were several accreditation vehicles available; ultimately they designed the program in general accordance with ISO (International Standards Organization) requirements in preparation to apply for accreditation at a later time. In order to ensure transparency and avoid a conflict of interest, the Building Commissioning Certification Board (BCCB) was established as an independent nonprofit entity, with its own Board of Directors.

Bryan believes the CCP credential shows that individuals are serious about their commissioning career. "Any credential that's targeted toward what you do commands respect – it's recognized as an achievement. For commissioning providers, the CCP is like having a PE behind your name. From the beginning it's been a good credential on resumes and qualifications."

The CCP, he says, is a requirement on some RFPs. He, and others, were able to get the military to include certification requirements in their solicitations. One of his best Post Occupancy Review sessions, in fact,

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**Spotlight: Bryan Welsh (cont.)**

was for the military. "I didn't think there would be a person with feedback and project ownership, but they were totally into talking about how things worked, and solving communication protocol issues."

According to Bryan, the main challenges to certification come from the industry itself. "There's a fair amount of agreement about what constitutes commissioning," he says, "but now there is confusion – too many organizations and certifications are confusing clients. There needs to be more CCP brand recognition as a premier certification... we need to help people understand it's the best product, and why."

**NEW ENTRANTS TO COMMISSIONING**

On hiring: It's not always easy to get candidates to understand what they'll be doing – we spend a long time in the interview process. It's really difficult for them to get a grasp of it without spending time doing it. They need a good education in sciences in physics and math. They must find buildings and systems interesting. They need to be able to work with diverse people and skill sets, not just as a good engineer; often they must put on a counselor hat. They must have knowledge of systems. I look for candidates who are fastidious, curious, forensic, collaborative, logical. I look for people who have those basic ideas and personal traits; we can teach them about air handlers, but we can't teach them how to treat other people.

On advice to newcomers: Bryan encourages his employees to earn the CCP because it's a rigorous and valuable certification. He advises newcomers:

- Evaluate whether you fit those basic traits and look for a company where you can use them; you can go to class to learn the technical parts.
- Job-shadow someone.
- Attend an NCBC Conference.

On the commissioning process: Bryan clearly defines the role he and his company play.

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**"We are facilitators. We are there to facilitate delivery starting with the OPR and ending with post-occupancy review at 10 months. We like to stop in to see how the building is doing, see how we might improve the Cx process, or learn if a particular system was or wasn't a good idea. We like to gather lessons learned and how to make it better before the warranty runs out."**

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"My view of the commissioning profession is to verify that all parties along the way have done their job, including the owner, design team and contractor," he says. "The process is there to make sure people have done the right thing and not skipped anything. We work hard to get everyone to take it seriously."

And that, Bryan, is a serious commitment. Thank you.

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## ABOUT BCA

The Building Commissioning Association is dedicated to professional development and industry advocacy for best practices in learning, doing, teaching and maintaining the highest standards for the building commissioning process to achieve persistent, efficient building performance. Learn more at [www.bcx.org](http://www.bcx.org).



### Contact Us

Building Commissioning Association  
1600 NW Compton Drive  
Suite 200  
Beaverton, OR 97006

877.666.BCXA (2292) Main  
503.747.2903 FAX

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