

The Bright Future of Building Enclosure Commissioning

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Figure 1 – Roof assessment and review of detailing ahead of roof replacement.



Building enclosure commissioning (BECx) is maturing as an industry, with the future of certification being driven by the International Institute of Building Enclosure Consultants (IIBEC). Updated language by the U.S. Green Building Council (USGBC) clarifies the needed standards within the Leadership in Energy and Environmental Design (LEED) program. Revisions to and growth of standards provided by ASTM International for BECx are also driving the industry forward.

If we look at the almost 20 years of past growth, beginning with interest originating from the General Service Administration's (GSA's) P100 Facilities Standards for the Public Buildings Service¹ and GSA's Design Excellence Program,² to the evolution that became the National Institute of Building Sciences' (NIBS's) Guideline 3 in 2006,³ to the present day, we have come a long way. The journey continues with refinement of requirements and approach, standardization of the practice, and certification of BECx providers so that owners receive a verifiable level of quality and service. The number of firms, individuals, and industry partners interested in enclosure commissioning has increased from a handful of industry supporters that, through NIBS, developed Guideline 3, to what is likely now approaching hundreds if not thousands of people involved with and providing BECx.

With growth come challenges in keeping BECx providers' depth of knowledge up to speed with the latest enclosure materials, as well as strong technical knowledge in installing and detailing those materials, including understanding compatibility and constructability concerns. This evidences the importance of building enclosure education from the university level through to the continuing education of the most seasoned veterans of our industry. Education programs should include subjects addressing the process and the technical knowledge needed to be well versed as an individual or a team providing BECx.

We have seen an increase in owner and developer requests to include BECx on projects, alongside mechanical, electrical, and plumbing (MEP) commissioning. While this is somewhat driven by the LEED program, university, healthcare, and similar large campus or asset owners are including BECx as part of their own performance standards to provide better quality to their projects with the intent of having a more durable and higher-performing building. The continued support from the USGBC, codification of BECx requirements, and enhancements to existing BECx requirements within green codes in many parts of North America have all driven an increased need for BECx providers' services.

We have also seen new emerging leaders throughout the industry. They are passionate about setting a new path forward for BECx, with a focus not just on process and

Figure 2 – Observation of water infiltration testing.



Figure 3 – Setup of blower door for airtightness testing.



consistency in delivery, but also on further showcasing the technical depth needed. A depth of knowledge across a BECx team is required to provide the one thing BECx has promised for many years: heightened quality and performance. Unfortunately, the current range of quality of service and technical prowess among providers is still too great.

Through the advancement of better certification programs, such as that forthcoming from IIBEC, the letters after a provider's name will become more meaningful. The intent of IIBEC's certification program is to test BECx providers on a more detailed and increased technical knowledge level, including building science and enclosure materials and their use.

As any industry grows, its success over time is closely monitored by those paying for the service. The momentum BECx is currently gaining will need consistency in quality of service and education of BECx providers to achieve long-term success. Without consistency, there is risk of a major setback to the progress of BECx. The impetus to complete BECx has to be firmly rooted in meeting owner/developer requirements, which must always be the baseline for performing this service. Profit margins should be achieved if technical depth is provided at a consistent level across the industry.


In addition to verifying and aligning provider requirements, certifications for those managing the process and the technical specialists will also be required in order to provide a consistent level of qualifications in the marketplace. The need for certification of a technical specialist will continue to be heavily debated versus justifying ability based on years of experience and successful application of knowledge. One method of equalizing judgment of provider qualifications without the requirement of a certain certification program is to equip owners with a checklist of qualifications to request from each member of a BECx team based on project type or requirements. This includes the project principal, project manager, BECx provider team, and the technical specialists.

For example, a team of specialists needed for a laboratory, healthcare, or specialty building project can be quite different from

a residential or commercial project. Some projects may require more depth of roofing knowledge (Figure 1), whereas another may require deep knowledge in glazing systems and all aspects of fenestration. Yet another may require the knowledge of a historic preservationist to consult on the integration of a historic structure with new construction.

Another area of growth within the BECx industry revolves around functional performance testing of the enclosure systems for air- and watertightness (Figures 2 and 3), thermal performance, structural strength, and durability. Some of this is inherently due to the length of time testing has been part of building enclosure construction compared to the length of time a formal BECx process has been in practice. We have seen more jurisdictions requiring building airtightness testing and verification, and others requiring testing even earlier in construction. We still experience laboratory testing companies at the forefront of testing implementation, but we are also

seeing more and more enclosure consulting and inspection companies being asked to provide the service as part of the BECx program.

With the standardization of BECx services across providers, the support of industry leaders (both established and emerging), and the unified goal of improved building performance, the future of BECx is bright. This passion of our growing group of new emerging leaders and strength in numbers will bring the BECx industry its anticipated long-term success. It has been exciting for me personally to be involved as one of the handful of people who helped get NIBS Guideline 3 moved forward. We have come a long way from the initial effort, and the path forward will be very exciting indeed as the industry continues its journey towards full maturity. 

REFERENCES

1. <https://www.wbdg.org/ffc/gsa/criteria/pbs-p100>
2. <https://www.gsa.gov/real-estate/>

design-construction/design-excellence/design-excellence-program

3. <https://www.wbdg.org/ffc/nibs/criteria/nibs-guideline-3>



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He is a member of NIBS, ASHRAE, and USGBC, including the EA TAG. Totten was a committee member of the National Institute of Building Sciences (NIBS) Guideline 3 – Exterior Enclosure Technical Requirements for the Commissioning Process.

IIBEC Joins Back to Work on America's Roofs Coalition

The International Institute of Building Enclosure Consultants (IIBEC) has been part of a coalition of industry associations that have encouraged governmental organizations to allow the roofing industry to get back to work on the nation's roofs in the wake of the COVID-19 pandemic. IIBEC joined the Asphalt Roofing Manufacturers Association (ARMA), the Chemical Fabrics & Film Association (CFFA), the EPDM Roofing Association (ERA), the Metal Construction Association (MCA), the National Roofing Contractors Association (NRCA), National Women in Roofing (NWIR), the Polyisocyanurate Insulation Manufacturers Association (PIMA), the Roof Coatings Manufacturers Association (RCMA), the Single Ply Roofing Industry (SPRI), the Spray Polyurethane Foam Alliance/Professional Certification Program (SPFA/PCP), the Slate Roofing Contractors Association (SRCA), and the Tile Roofing Industry Alliance (TRI) in an outreach plan called Back to Work on America's Roofs (BWAR). The alliance included press releases to all major industry media outlets on the coalition's position statement, touting the importance of the roofing industry to the entire country. Read the statement here: <https://iibec.org/iibec-joins-back-to-work-roofs/>.

