Judd Peterson, AIA
Principal Architect
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Chair, BEC – Minnesota

Vice Chair – BETEC Board

Current Chair is Chris Mathis
Speaking at the BETEC Symposium tomorrow.

I participate on several other NIBS councils and committees as well.
So what’s your secret to winning a trophy?
“Make the fewest mistakes.”

Bill Hall, 2012
Long Term Maintenance Costs

- Wide open, low bid, low initial cost strategy
- High quality, high design strategy

Costs vs. Time

Short Term Unsustainable Strategy
Long Term Sustainable Strategy

100 yrs
After over a decade or two of this type of wide open, low bid, low initial cost strategies by the State of Minnesota, and the resulting escalating maintenance costs from shoddy materials, a skyrocketing rise with no end in sight…

David Hardin, Director of Facilities, Minnesota State Colleges and Universities, the largest college system in Minnesota, recognized 30 years ago that the State was a long term building Owner, whose most affordable alternative was actually the investment and construction in high quality, sustainable buildings able to last 100 years with minimal maintenance.
“I can’t afford to build cheap.”

D. Hardin, 1983
How did Hardin come to this realization?

...by the heavy cost of the mounting *failures*.
Goal: Minimize your long term costs by eliminating failures.

If you want to win big, make the fewest mistakes.
The most costly sources of errors in building enclosures, which is where most failures and life cycle costs are generated:

1. Leakages in waterproofing below grade foundations, slabs, elevator pits, and tunnels.

Why? Only one chance to do it right, and then it’s buried, concealed, and very costly to access and correct. Experience has revealed it costs approximately 7 times the difference between the initial costs between failure-free, high quality waterproofing and the cheapest alternatives, including damage corrections.
2. **Gaps in air barriers.**

   Why? Only one chance to do it right, and then it’s buried, concealed, and very costly to access and correct. Similar costly difficulty and damage.

3. **Planes of Performance (weather barrier, insulation, vapor barrier, structure, windows) are out of alignment, not planar or continuous.**

   Planes lose their function if not planar and aligned.
4. Lack of communication about “OPR” and “BOD” for the exterior enclosure between Owner, Mechanical Engineer, and Architect with regard to temperatures, humidity, and potential condensation.

5. Lack of understanding about how windows and curtainwall are aligned and sealed with the Planes of Performance.
So how do you avoid *failures*???

Good news! ------------→ BECx

- **Building Enclosure Commissioning**
  - Performance Defined by Owner’s Performance Requirements
  - Basis of Design to meet the OPR and peer reviewed
  - Plan, spec, and product reviews
  - Field Observations – Initial Installs, systems that will be concealed – waterproofing and air barriers
  - Lab and Field Testing
  - High Quality products and materials for sustainability
  - Sound design with peer reviewed detailing for performance
• NIBS / BETEC education efforts through the BECs

• NIBS & ASTM agreement to develop education and BECx certifications

• BRIK – a way to spread the knowledge
Thank you. Questions??

Judd Peterson