MEETING 3 NOTES | May 2, 2017:

Agenda

1. Provide overview of CEE’s Commercial Energy Codes Support Pilot Program services, tools, and lessons learned to date
2. Preliminary review of code summary sheet tools -- contributions from Steve (Opus), Megan (CEE), and Gerhard (HGA)
3. Outline next steps

- See slides presented regarding Commercial Energy Codes Support Program -- in this google folder
- See slides highlighting tools presented to code officials at the Annual Building Institute in January 2017 (hosted by the U of M) -- in this google folder

- Discussion of tools:
  - Megan:
    - A short, but detailed overarching table of code requirement information that the design team needs to indicate (e.g. is Commissioning required)
    - Additional tables that are specific to a portion of the design (e.g. a table that summarizes the lighting information needed to comply with the code)
    - These tools are a combination of concise but detailed and specific; good for small to mid-sized projects
  - Steve:
    - Slightly broader tools that prompts design teams to fill in various pieces of information mostly in narrative form
    - Probably reasonable for mid-sized projects to large projects
  - Gerhard:
    - Very detailed tools that can be imported into REvit and other modeling/drawing software for incorporation of schedules, etc.
    - The questions are for all code considerations, not just energy
    - Very detailed, but really only feasible for very large projects (where there is the time and budget to complete this extent of formwork)
  - Don (Sivigny): Sending another tool that he has seen used by cities that could be helpful
  - We discussed various considerations for us to think about when reviewing these tools at our next meeting, including: size of project, phase of project we tool is intended for (and how much information is available at that time), and type of
project delivery model (design-build or design-bid-build) *Consider the 4 quadrants below in refining these tools

<table>
<thead>
<tr>
<th>Large Project</th>
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<tbody>
<tr>
<td>Early Design</td>
<td>Late Design</td>
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| Small Project |  |

- **Next Steps**: Review the tools ahead of the next meeting (individually) and discuss these considerations to determine tool revisions and piloting opportunities (or experience from the field already available)

**MEETING 2 NOTES | March 7, 2017:**

**Agenda**

1. Discuss Survey & top priorities
   a. Review based on initial assessment & criteria
2. Choose 3-4 to prioritize the most
3. Discuss barriers and opportunities for these
4. Consider strategies to work on
   a. What, who, how
5. Discuss next steps (maybe one more meeting on prelim strategies?)

Discussion of the results of the survey; anything missing?

- Need to start where there are upstream issues; move us to one compliance path
  - What early wins can we get before this happens, since this couldn’t happen for a while
  - 1. flow chart that can show what the paths are; 2. what the impacts of each compliance path

- Two themes: education opportunity & deeper assistance (tools or service)
- Types of improvement: documentation & review

**Idea Evaluation Notes** (originally on the whiteboard; transcribed here)

*Those **bolded in blue** were our top priority ideas (early wins).*

<table>
<thead>
<tr>
<th>Issue</th>
<th>Barriers</th>
<th>Opportunities &amp; Ideas</th>
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<tbody>
<tr>
<td>Performance Based Reviews</td>
<td>-Take lots of effort for code</td>
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<tr>
<td><a href="#">officials</a></td>
<td>-Limited time &amp; budget</td>
<td>-There are commonalities across all paths</td>
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<tr>
<td>Selecting from multiple compliance paths</td>
<td>-Not sure of all the benefits and costs of given path on a project</td>
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<tr>
<td>Documentation not detailed enough</td>
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<td><em>Codes Summary Sheet (we could create a template)</em></td>
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</table>
| Lots of codes (outside of energy) to use & they all change | -Don’t always know when the code applies (particularly in renovations and additions) | *Flow chart of how to comply with requirements and why*
| Cities not used to looking at MEP documentation/drawings (#1 below) | | -When performance: best practices and roles for various players; checklist of things to include in documentation (#2 below) -Checklist to compare design and installation |
| Lack of integration between energy model and what gets installed | | -Checklist that experts sign to confirm X, Y Z, documents have been provided, etc. (a go between design team and city) |
| Inconsistency of state or city inspecting electrical | | Make more clear to designers and cities the Submittals you should be asking for (& what to look for once you have them) |
| Geeting lighting/lighting controls commissioned/tested | -Requirement not the same across IECC & ASHRAE -What does non-3rd party look like (inconsistent; officials don’t specify so you get junk info) | -Provide a good example |
| Building performance suffers | -Manuf./installer point at each other for why done poorly -Cx takes 9+ months -No oversight after occupancy like Fire Marshall for health, safety, welfare code measures | (#3 below) -Linking code official hand off to a facility manager -Make the Cx certificates public so that there is some accountability (like elevator inspections are posted publically in the elevator) |

**#1 Discussion:** Should we focus on architects or code officials? Architects and engineers are ultimately already responsible for their designs/what they sign. The signature is the stick, not the code officials (what is the right leverage point when thinking long term?)
- **Scenario a:** For performance based projects, the burden maybe should fall more to the designer that signs (the lever in this scenario)
  - Opportunities around how the energy model is integrated into the what and how things are installed on site
- **Scenario b:** For prescriptive projects, the burden falls on the code official (the lever in this scenario)

**#2 Discussion:** This was discussed for a while (could a second round item that we work on). Could go hand in hand with code summary sheet template; This was mainly discussed as a tool for designers, but could be helpful for code officials too, but it is important to choose an audience and put the “burden” or responsibilities on them so not confusing.

**#3 Discussion:** Great ideas. Lots of group excitement around them, but longer, bigger pushes (not early wins). Want to come back to.

**Meeting conclusions:**
Moving forward these three ideas:
1. List of submittals that should be asked for & what to look for on each of them
2. Codes Summary Sheet - template for energy information (narrative or schedule format)
3. Flow Chart of how to meet the code: How to select a path and why
4. Linking code official hand off to facility manager for Cx accountability post-occupancy

Round 2 ideas/Ideas on deck:
1. Best practices & design team roles under performance path (only?)
2. Checklist of things to include in documentation
3. Submittals that you should want to see (designer and code official)
4. Commissioning certificate made public

**Actions to be taken:**
- Megan to type up notes
- Megan to share codes summary sheet template (energy code portion)
- Steve to share example plans for the team to work from at our next two meetings
- Next meeting Russ and Megan to present their Commercial Energy Codes Support Program and tools along with code official training materials.

**MEETING 1 NOTES | January 25, 2017:**
**Meeting 1 Agenda**
- Introductions
- Common committee goal
- Discussion
  1. What interests us most regarding commercial energy code compliance
2. Biggest opportunities and barriers
3. First targets for improvement
4. Clear action by MECCC or partners
5. Next meeting topics

Our Proposed Goal (up for discussion): to improve energy code compliance in Minnesota's commercial buildings.

- It is great to have a resource for best practices, but how do we disseminate it and get people to know it and know where to find that information
  - We should be thinking about audience
  - We should thinking about how to make information accessible & able to impact the most people
  - Make the tools easy to use and understand
- Help link to other networks (e.g. AIA codes committee)
  - AIA Building Code Committee Co-chairs for 2017: Steve Kovalik and Jeff Walz
- Lack of standardization in lighting industry and finding conduit that we will be able to maintain (example)
  - Get the word out to user groups
  - Lots of complaints from occupants

- Buckets of Goals:
  - Education & Dissemination… and tools (maybe a separate bucket)
  - Programs & Initiatives
- As a group we will probably have two tracks of conversations going on: the overarching direction of what we should focus on and then at times the more focused and frequent meetings around tools, initiatives, education, etc.

Discussion:

1. What interests us most regarding commercial energy code compliance
   - Lighting design (e.g. overlit spaces)
   - Lack of integration of design group (different teams going after different compliance paths - not coordinated)
   - Commissioning needs more weight: needs to be done well but better continuity between design team & facilities staff; often fast timelines of getting moved into county buildings
   - Review from cities aren’t used to looking at mechanical and electrical plans
   - Performance based projects can’t get meaningful reviews from the cities
   - Documentation is not detailed enough to lead to compliant design/construction
   - Lack of best practices in documentation and lack of templates
   - Gap in “who” is responsible for inspecting the lighting & electrical portions of the energy code
   - Lack of understanding the watts to lumens translation (e.g. overlit spaces)
   - Contractors knowing the energy code not just the NEC, for instance
   - Helping owners know what to expect (interested to follow up on this)*
   - Code officials rely too much on the signatures of licensed professionals
Two energy codes are confusing; can we get to one (ASHRAE); *Did other states see a long period of acclimation
Continuous insulation is NOT essential, it is one path of compliance; building science behind this (e.g. dew point)
How the code collaborative views it roll? (L. Milberg); Stretch codes, resilience, etc.
Consistency across cities of enforcement (e.g. if one code official puts too much red tape on a project, she will get in trouble)
How technologies are changing faster than the code *compliance technologies, verification technologies, design & modeling technologies, capital technologies (e.g. photographic verification)

What are our Priorities?
- 2018 Next code and committees will start to meet next year -- could help future compliance by looking at fewer paths for compliance
- Megan will look at and send out a survey and/or a proposed list of priorities that could point to early wins & priorities that will keep all or most of the committee engaged

Next Steps:
- Prioritize a few early wins and have next meeting on barriers and opportunities specific for these & next steps
- Next meeting likely at CEE, but some other central locations should be considered (in person is good, but keep the phone option)
- Next meeting 4-5 weeks out; 90 min meeting