

City of Madison Standards and Specifications

There is no Substitute for Quality!

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How good are modern Buildings?

- Ancient Greece and Rome: houses were solar oriented and even communities were laid out for good solar access; in the later days of Rome legal action could be brought to maintain solar access
- 1600: Roofs to last more than 200 years without repair
- 2007: computers, space travel, permits
 - Solar orientation is not part of most designs
 - It is generally accepted that roofs need to be replaced after 20 years, unless “unforeseen” events like rain, snow, sun or hail destroy them sooner

Terms

Standards:

- We tell the designer what we want - General
- If the design is bad, the building will have flaws despite good workmanship
- Example:
 - Use PV as south facing awning and shading device
 - Exceed 2006 International Energy code by 50%

Specifications:

- The designer tells the contractor what we want - Specific
- If the execution or material is bad, the building will have flaws despite good design
- Example:
 - Size temperature and relief valves per CSA ratings. Pipe temperature and pressure relief valves to floor drain or floor as indicated.

Can't we use Existing Standards and Specs?

- Code: building as bad as legally possible
 - The standard for people without goals
- Common standards and specs focus on upfront cost and short-term ownership: 0-3 year investment
 - Commercial buildings are investment for rent or sale where the owner does not have a stake in long term expenses
 - Focus on things you can see, but the invisible things are the ones that make a building be comfortable and inexpensive to operate, or to fail.
- Governmental investors keep buildings for a long time and are liable for operating expenses: 50 year investment

Standards

- Requirements and scope of work for A/E
- Supply information electronically
- Energy simulation and detailed load calculation throughout the entire design process, outperform ASHRAE 2004 by 50%
- Assumptions for ROR and Life Cycle Cost calculations (fuel cost escalation rate, expected life)
- Commissioning
- Maximum use of passive solar w/o over-glazing
- Provide Bike Storage
- Flat green roof / sloped metal roof
- Low maintenance landscaping

Standards cont.

- Pervious surfaces
- PV awnings as shading device on south side
- Active solar space heating
- Locally produced and/or recycled and recyclable material
- R60 roof, R30 wall, windows below U 0.2
- Minimum illumination levels, maximum lighting power density exceeding EPAct, daylight harvesting
- Full control of all energy-consuming devices
- Heat Recovery of waste air and water
- No use of unacceptable Material (i.e. Freon 22)
- Gray and rain water use
- much more....

Our Specifications

- “Inspiration” for outside A/E
- For in-house design
- Wherever there is none, we create one
 - PV
 - Solar thermal
- Exclusive use of state of the art material and workmanship to prevent “Joe-Sixpack” installing “as cheap as possible” material

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