Where Have All the Ethics Gone?

Presented by Richard H. Rooley, FASHRAE, FREng
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Who Decides Performance?

PM cost and time?
Brief – divided responsibilities
Design – divided responsibilities
Construction – divided responsibilities
Use – divided responsibilities

Commissioning
Deskilled design workforce
Deskilled site workforce
Deskilled O&M workforce
Energy Performance
Certificates
Low by over 3 times (CIBSE March 2016)
Controls overcomplicated
Few Clerks of Works (Client supervisors)

Rely on the commissioning

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Communication

- Ethics
- Usual practice
- Incompetent engineering

Someone else’s fault

Architect
Designer/Consultant

Contractor

Fuzzy Communication Gap
What is the Construction Industry?

- It translates concepts into concrete
- It removes barriers to give truly satisfied clients
The Construction World

- Funder
- Planner
- Technology Change
- Developer
- Tenant
- Public pressure

BRIEF

- Interoperability
- QA
- Architect
- Structural
- M&E
- Others
- Consultants

CONSTRUCTION

- CDM
- Murphy
- Communication
- ignorance

PRACTICAL COMPLETION

- Machinery
- Syndromes
- Health & Safety
- Facilities/Maintenance

OCCUPATION

- Developer
- Owner
- User
- commissioned for use

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Ideal vs. Reality

**Ideal**
- Good technology
- Comfort
- Meet all standards
- Full price
- Assume full competence
- Efficiency of scheme
- Integrated
- Fully planned

**Reality**
- Expediency
- Save cost
- Monument
- My company profit
- Get it to work on site
- Change orders
- Time
- Bid too low to do job properly

**Reality Gray Areas**

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Ethics – 3 Levels

- Professional morals
- ASHRAE Society codes
- The ethical building
ASHRAE Code – General

• Stewards of environment
  ▪ Own actions no harm
• Commit to ASHRAE code in professional activities
• Follow codes of national and cultural boundaries at project location
• Follow professional and industry codes
ASHRAE Code – Competence and Expertise

• Only work within competence
• Use care, competence, expertise
• Be up to date
• No conflicts of interest unless declared
• Confidentiality in work and Society
• Executive sessions are secret
• Sanctions if unfounded, frivolous or malicious
Chaos Trigger -
Computer Errors

- 58 percent attributed to the user
- 25 percent the software
- 13 percent the hardware
- 4 percent “other.”
- User error is the same as application error
- Hardware and software errors are program errors.
- User inexperience is the leading cause of computer errors.


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Practice Ethics

Practice ethics – never reported, no complaints – **even when found guilty**

**Faults Found in Court or Arbitration**
- Time delay
- Cost over-run
- Fail to operate as designed
- Incompetent maintenance
- Giving false evidence
- Using wrong standards and technical information

**ASHRAE Code**
- Areas of competence and expertise
- Using and developing up-to-date knowledge and skills
- Avoid real or perceived conflicts of interest
### Top Causes of Uncertainty

<table>
<thead>
<tr>
<th>Unforeseen Site or Construction Issues</th>
<th>Ranking of Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Errors</td>
<td>Owner: 3</td>
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<tr>
<td>Design Omissions</td>
<td>Owner: 2</td>
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<tr>
<td>Construction Coordination Issues</td>
<td>Owner: 7</td>
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<td>Contractor-Caused Delays</td>
<td>Owner: 4</td>
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<tr>
<td>Owner-Driven Changes</td>
<td>Owner: 5</td>
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<tr>
<td>Accelerated Schedule</td>
<td>Owner: 6</td>
</tr>
</tbody>
</table>

A screen from Dodge Data & Analytics recent webinar on its new risk and uncertainty Smart Market Report. Courtesy Dodge Data & Analytics
Commissioning Time

- **Non standard**
- **Difficult to understand**
We do not do this...are we unethical?

- Follow the principles outlined in the new guideline, "Designing for Effective Building Operations."
- Add computer assisted building operations enhancements into the design program.
- Transfer the design operational concepts to the operations team.
- Learn and apply well-building fundamental principles to the design.
High vs. Low Energy

**High Energy – Accepted**
- 35MW
- 800 years rot
- Not waterproof

**Low Energy – Protests**
- 11MW
- Farmed
- 2 years rot
- Waterproof 1