

Bringing Building Services into BIM

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Perspectives

Infrastructure Analyst, UNC Facilities Services
- 20 years of facility operations

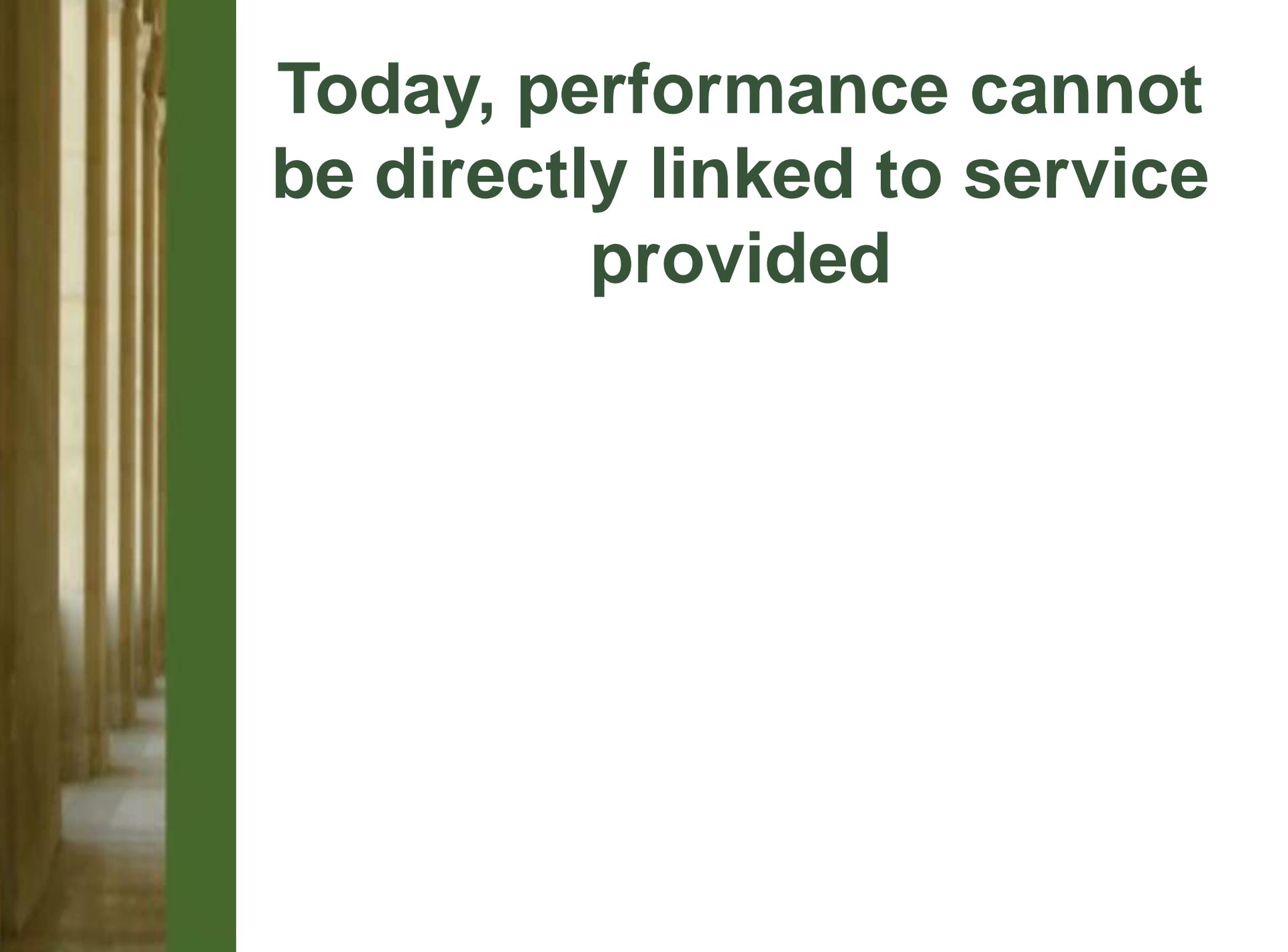
Chair, OASIS oBIX Technical Committee
Co-Chair, OASIS Technical Advisory Board

FIATECH Element 5 Co-Champion
“The Self Maintaining and Self Repairing Facility”

NIST Domain Expert Workgroup, Building to Grid

NIST Emergency Response Situation Awareness Workgroup

Emerging Markets and Venture Technical Analysis Consultant



**Today, performance cannot
be directly linked to service
provided**



**New markets and new
mandates make
unresponsive buildings a
liability**

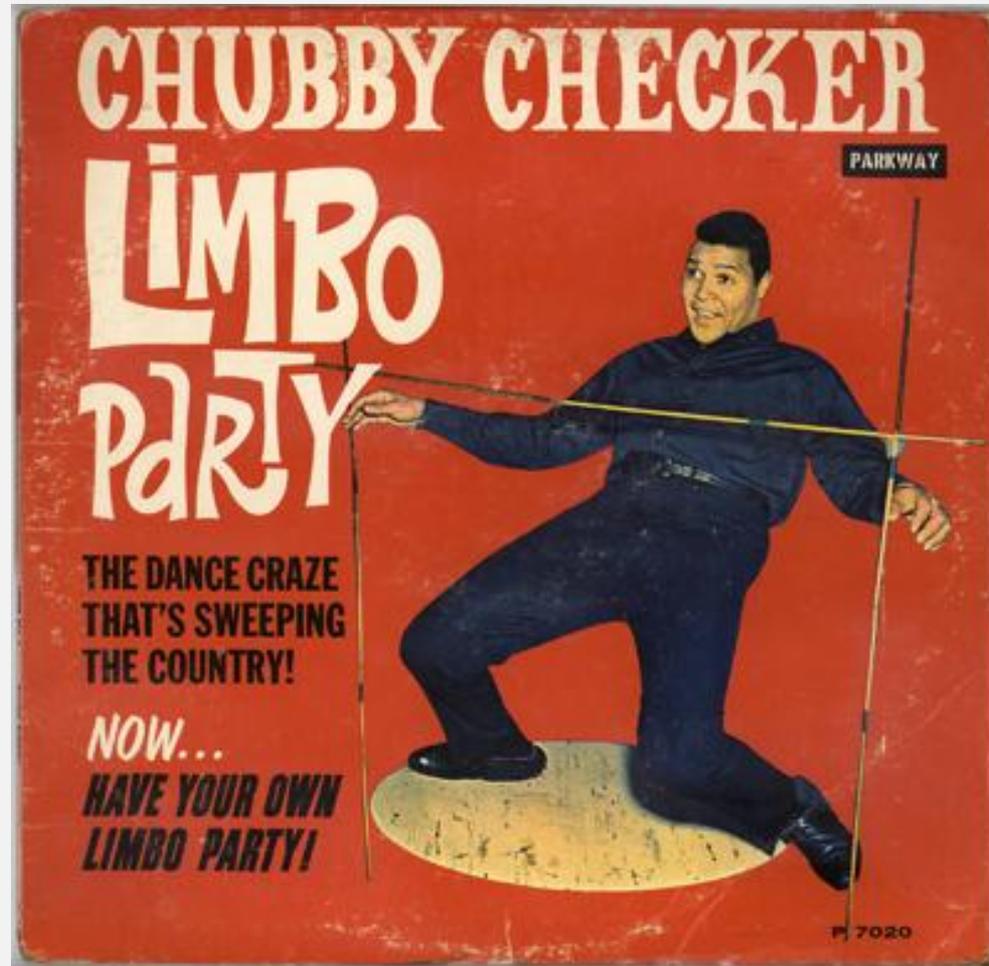


**BIM specification of
Building Services will
improve delivery, enhance
amenity, and reduce costs**

**Today, building systems
offer up name/value pairs
rather than services**



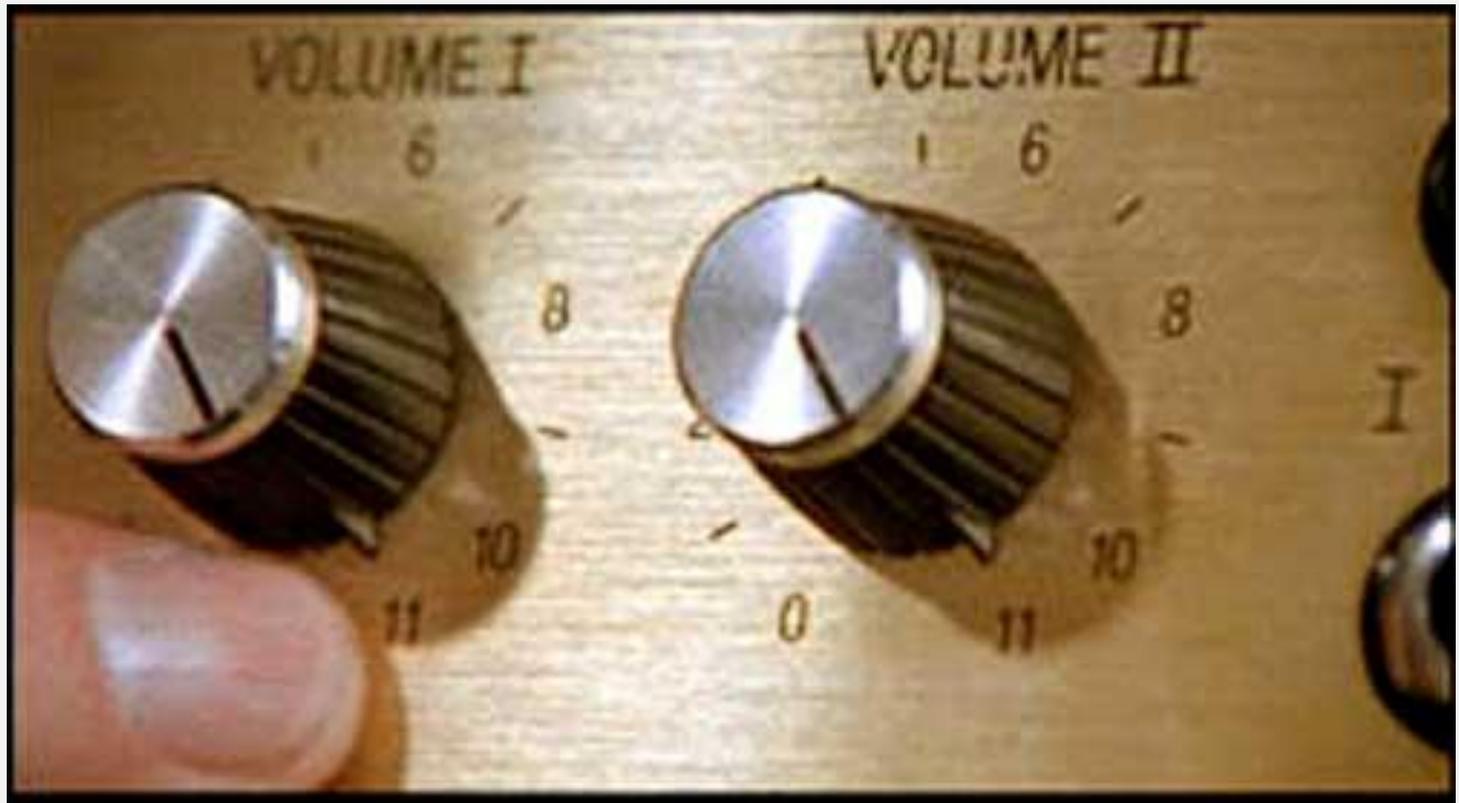
Code compliance merely defines poor performance



Building systems are designed in the field and discovered by the owner.



**Lacking design, we
substitute capacity for
performance**



Building systems must embrace enterprise protocols and metrics



Occupants have no real stake in control protocols



Schedule system for results, not system processes

The screenshot shows a Microsoft Outlook appointment window titled "Weekly Update Meeting - Appointment". The window has a menu bar with "File", "Edit", "View", "Insert", "Format", "Tools", "Actions", and "Help". Below the menu bar is a toolbar with buttons for "Save and Close", "Recurrence...", "Invite Attendees", and other icons. The window is divided into two tabs: "Appointment" and "Scheduling", with "Scheduling" currently selected. On the left side, there is a "Zoom" dropdown set to "100% (Day View)". Below that is a list of attendees: "All Attendees", "Ferrell, Tracey" (selected with a radio button), and "Click here to add a name". The main area is a calendar grid for "Friday, July 30, 2004", with columns for 1:00, 2:00, 3:00, 4:00, 8:00, 9:00, and 10:00. A blue bar indicates a busy period from 3:00 to 4:00. A vertical bar at 9:00 is colored green and red. At the bottom, there are buttons for "Add Others" and "Options", and fields for "Meeting start time" (Fri 7/30/2004, 9:00 AM) and "Meeting end time" (Fri 7/30/2004, 9:30 AM). A legend at the bottom identifies colors: blue for "Busy", blue with a diagonal line for "Tentative", purple for "Out of Office", and a grey square for "No Information".

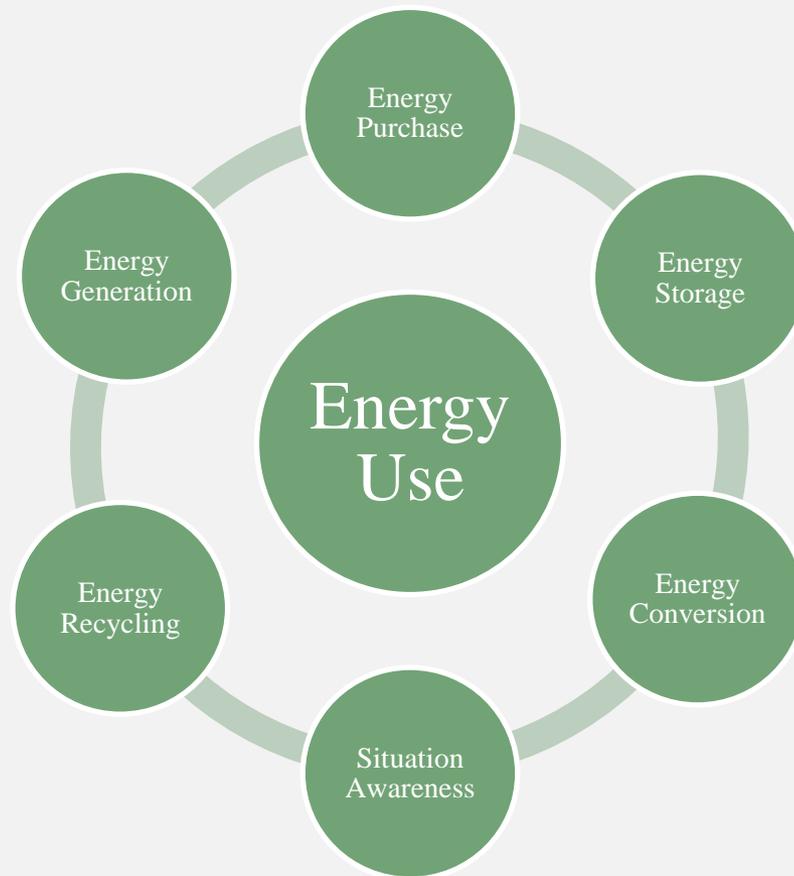
**Define business needs, not
technical processes.**



Service interfaces invite new modes of interaction



Zero net energy buildings will require new levels integration



Leasing agents want the language to sell service performance

- Sustainability is starting to sell
- Healthy building indices balance effects of energy efficiency
- Provably productive workers can trump costs of office space
- Perpetual commissioning supports operations transparency (and trust)



Your building agent will be your personal day trader in new energy markets

- System agents defend mission
- Enterprise defines value
- Power Grid offers clearing market
- Building agents choreograph response



**Informational
Interoperability will provide
tenant benefits and improve
bottom line**

Dissimilar systems can compete on value delivered



Only coordination that is simple and secure will scale



New markets will develop with new market rules





BIM will specify building systems by semantic services and performance.

Discussion

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