Speaking in Three Dimensions

Convincing Decision Makers to Go Net Zero

Mike Rovito
Senior Consultant, ERS
Negative-Cost Measures

Glass Curtain Wall
- More expensive
- Less efficient
- Pretty?

Wall
- Less expensive
- More efficient
- Good for hanging things

vs.
No-Cost Measures

- Alberici Headquarters
  - 34 kBtu/sf/yr

- Measures:
  - Orientation
  - Footprint
  - Window shape
Investment Measures

- Invested to reduce load
  - DCV, windows, controls, daylighting

- Downsized chiller load
  - Shrunk 1,600 tons
  - Saved $17.3 million on chiller upgrade
Load-reducing design features dominate high-performance construction.
We’re Halfway There…

![Graph showing the relationship between efficiency, cost, and design choices.

- Higher Costs vs. Lower Costs
- More Efficient vs. Less Efficient

Key points:
- Aesthetics
- Better Components
- Value Engineering
- Better Design

Legend:
- You Are Here
- Lowest Cost Building at Each Level of Efficiency]
Destination High Performance

- Aesthetics
- Better Components
- Value Engineering
- Better Design

Lowest Cost Building at Each Level of Efficiency
Free Lunch?
Non-Energy Tradeoffs

- Aesthetics
  - Untraditional exterior…

- Functionality
  - Open layouts…

- Comfort
  - Natural ventilation…
Triangle of Tradeoffs

Energy Aspects

Costs

Non-Energy Aspects
Making the Tradeoffs

- Environmental Organizations
  - Santa Monica office of NRDC
- Progressive A&E Firms
  - Johnson Braund Design Group in Seattle
- Public Facilities
  - U.S. Navy Building at Port Hueneme
- Corporations with Sustainability Goals
  - Exelon headquarters in Chicago
Triangle of Tradeoffs
Non-Energy: Can Be Sold

Unique façade that screams sustainability!

Bullpen style layout to encourage collaboration!

Fresh air and sunlight!
Conclusions

- Load-reducing design saves money
- Not a free lunch: non-energy tradeoffs
  - Perception = worse
  - Reality = different
- Program goal: prove that different is not worse and may actually be better
Thank You
Questions?

Mike Rovito
Senior Consultant, ERS
mrovito@ers-inc.com