



**Green Globes:  
A reasoned response to mounting  
environmental pressures**

**Ottawa  
January 18, 2002**

**ATHENA™ Institute**

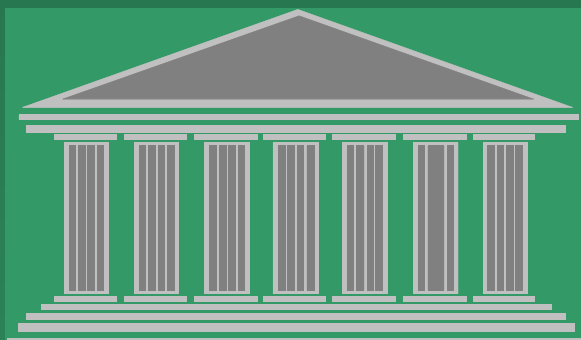
# The Built Environment . . .



- ◆ Accounts for 10% of global economic activity
- ◆ Consumes 40% of the world's material & energy production
- ◆ Accounts for 17% of the fresh water consumption
- ◆ Uses 25% of the annual global wood harvest

# Clutter, complication and risk

AIR EMISSIONS  
& ACID RAIN



IAQ & MICROBIAL  
CONTAMINATION

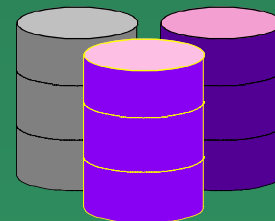


HAZARDOUS  
MATERIALS

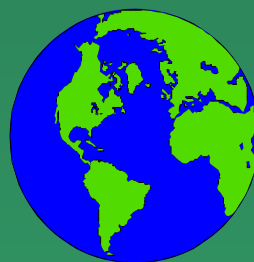
OZONE DEPLETION  
CFC's, HCFC's, HALONS

ASBESTOS

PCBs



ABOVE AND  
BELOW GROUND  
STORAGE TANKS



RADON

LEAD

HAZARDOUS  
WASTE

# The Ultimate Challenge

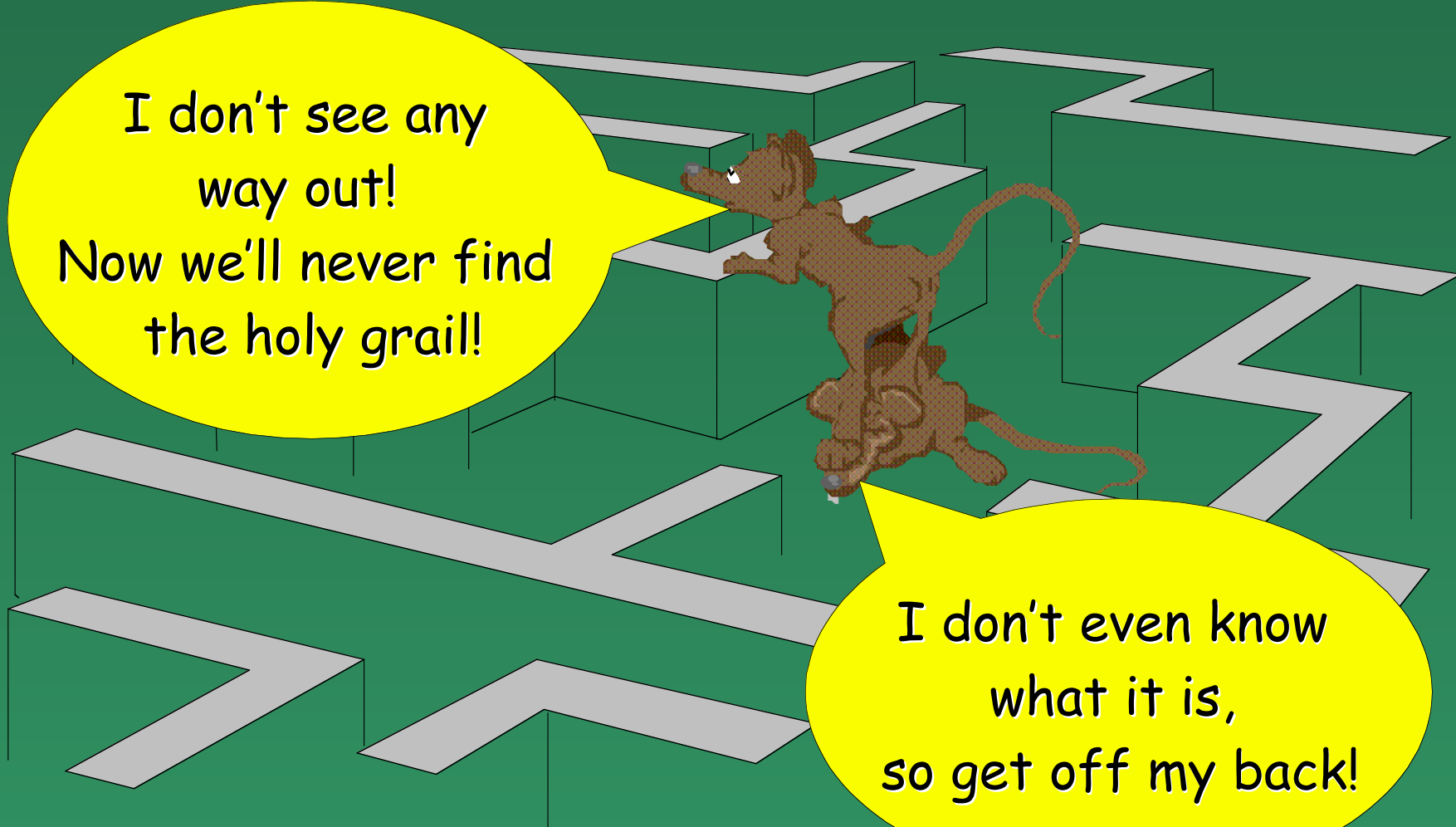
Designers with limited  
or no environmental training or experience

Assessing one of the most complex systems

With very limited resources and time

For clients or owners who may have  
only a marginal interest

And who probably will not have to live  
with the consequences



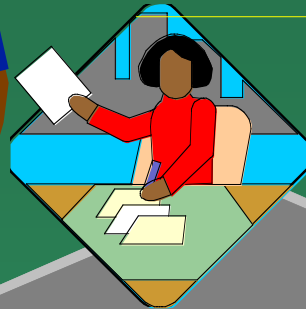
I don't see any  
way out!  
Now we'll never find  
the holy grail!

I don't even know  
what it is,  
so get off my back!

# Many players, many scripts . . .



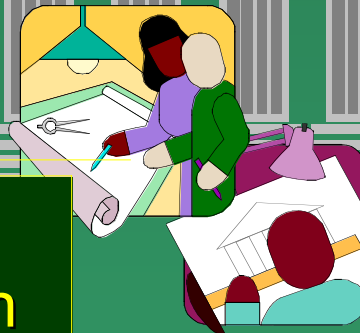
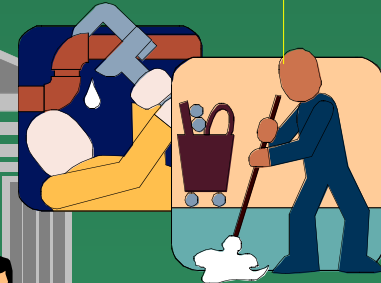
Supporting cast



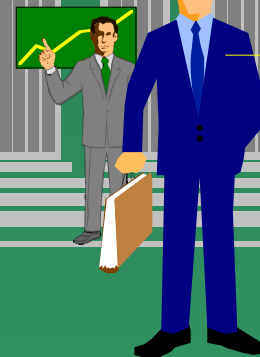
Occupants, operators -- live with and affect the outcome



Contractor --  
get it done  
on time

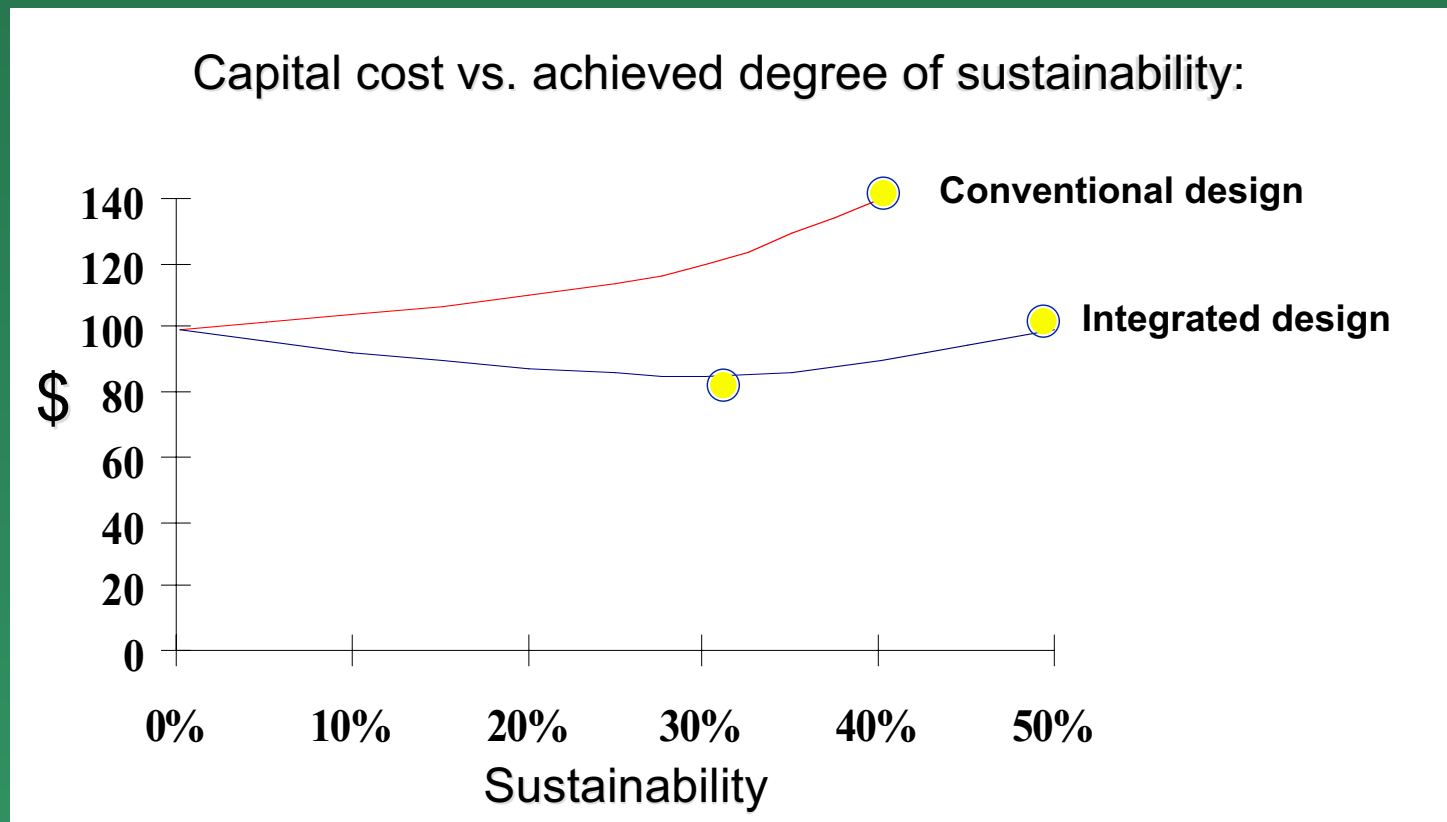


Design team --  
trying to be green



Developer &  
backers -- may  
have no long  
term interest

# Retrofit Process, Capital Cost and Sustainability

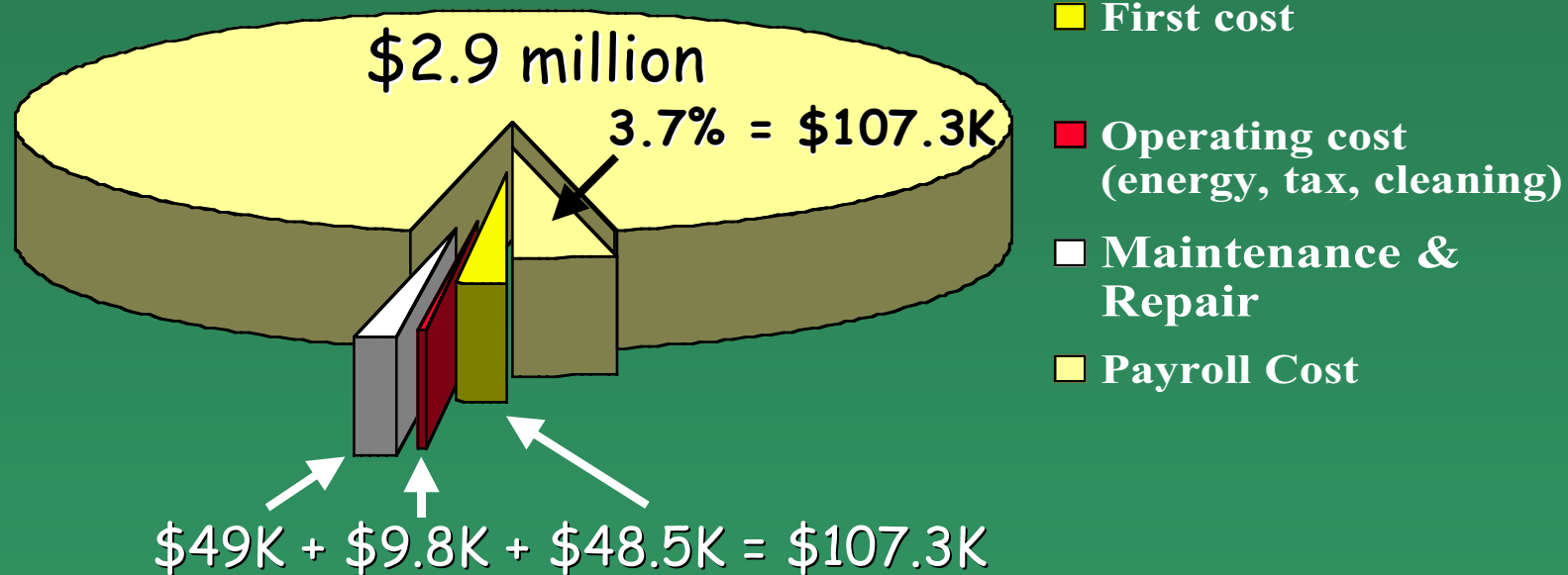


Source: Gordon Shymko, P.Eng

# BUILDING PERFORMANCE: Relative costs of life cycle elements

*Productivity gains of only 3.7% can pay for all facility costs over a 30 year period.*

\$/work space after 30 years



Source: U.S. Secretary of Defense



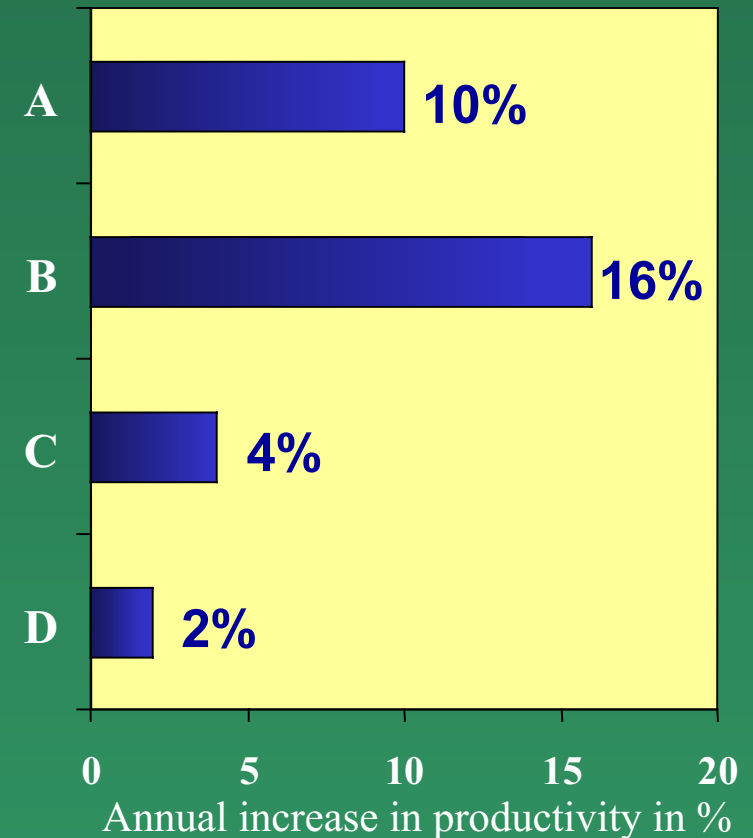
# Productivity improvements reported in recent studies

(A) High Frequency Lighting

(B) Improved Design

(C) Indoor Air Quality

(D) Building Sickness Score





It shows that you care!