WELL Inspired Design &

The Role of Simulation

Lindsey Malcolm
WELL Inspired Design & The Role of Simulation

- Background to Health, Wellbeing & Productivity
- The WELL Standard Process
- Design Stage Considerations
- Role of Simulation
- Project Examples
The Built Environment

September 2014
UK-GBC publish report on ‘Health, Wellbeing and Productivity in Offices’

February 2015
WELL Certification introduced to UK

Present Day
Moving beyond existing building assessment schemes…
… by focusing on the users, rather than the building
The Value of Staff

Health, Wellbeing & Productivity in Offices, World-GBC Report

1. Typical business operating costs:
   - 1% Energy costs
   - 9% Rental costs
   - 90% Staff costs in salaries and benefits

2. 10% Variation:
   - A 10% variation applied equally to each cost has a far from equal impact

   $\pm 0.1\%$
   - Energy costs
   $\pm 0.9\%$
   - Rental costs
   $\pm 9.0\%$
   - Staff costs

Summary of metrics framework and key relationships:

- Physical
  - Physical conditions and worker attitudes
  - Physical conditions and financial outcomes

- Perceptual
  - Worker attitudes and financial outcomes

- Financial
The Response

BREEAM includes a section on Health and Wellbeing, with up to 22 credits available.

WELL includes 102 credits worth of Health, Wellbeing and Productivity focussed targets.
Certification

Evolution from Design to Operation
The WELL Standard Process

- Awareness of WELL requirements from early stage
- Simulation/analysis techniques play a role earlier in the design process
- Design stage consideration of evidence
- Need to ensure compliance with post-occupancy spot testing
- Highly collaborative process
Building Design for Wellbeing

- Lighting
- Fixtures, Fittings, and Furniture
- HVAC
- Design Components

- Building
- Thermal Comfort
- Condensation
- Ventilation
- Air Quality
- Reverberation
- Acoustics
- Fixtures, Fittings, and Furniture
- Light levels
The Role of Simulation

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Environmental Analysis: Comfort

Coffee shop example:

- Sizing
- Part L SBEM
- BREEAM Hea03 CIBSE AM11
- DSM
Environmental Analysis: Lighting

Office example

- ADF & uniformity
- Glazing & shading optimisation
- Lux distribution
- Control

Environmental Analysis: Air Quality

Summary

- **98%** GOOD (83 hours out of 85 hours)
- **2%** FAIR (2 hours out of 85 hours)
- **0%** POOR (0 hours out of 85 hours)

Air Quality (%) by Time of Day

CO₂ (ppm)  |  VOC (ppm)  |  Stale air (ppm)  |  Dust (μg/m³)

http://www.wellcertified.com/resources
Final Thoughts

• Health, Wellbeing & Productivity are the new design metrics
• Greater focus on occupants
• Standard design & rules of thumb are insufficient
• More holistic design approaches required
• Significant opportunities for simulation
Any questions…?

Thank you

Lindsey Malcolm

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