Net Zero Emerging Leader Internship

Holst Architecture | Energy Trust of Oregon
Holst Architecture

Medium Sized Firm
40 Employees

Architecture 2030 Challenge
2017: 26 Projects
2018: 33 Projects
Agenda

Research

Reporting

Lessons Learned
Research
Why?

Built environment is an energy intensive industry

Design Energy (pEUI)
Site Energy (EUI)

Bake energy data into the design process
Best Practices

Tools for Architecture
- Sefaira
- Autodesk Insight 360
- EnergyPlus

Energy Data
- Post-occupancy
- High Performance Buildings
- Smart Grids
Holst Method

Challenges
• Not part of a process
• Requires a lot of work at the end of the reporting year

Goals
• Streamline reporting
• Incorporate into the design process
• Create a feedback loop
Project Team Reporting

- Reporting Spreadsheet
- Project Team Meetings
- Data Cleaning
Architecture 2030 Reporting

*Cost Per Square Foot for internal use only.
*Have to manually enter Climate Zone, green section and gray section into DDx.
*If more rows are needed, go to the right bottom edge of the table, click and drag blue corner symbol down to add more rows.

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project ID</th>
<th>Project Category</th>
<th>Construction Type</th>
<th>Project Phase</th>
<th>Country</th>
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<td>Major Renovation of Existing Building</td>
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<td>United States of America</td>
</tr>
</tbody>
</table>
Batch Upload

TIME SAVER

SEPARATE TEMPLATE

INTERNAL DATA
Design Data Exchange (DDx)

- Information challenges:
  - 3D Models
  - GMP drawings
  - Energy models
  - HVAC System information (ME)
Data Analysis

**DDx Data Report**
- Percentages towards a goal
- Overall program performance
- Assumption: already on board for sustainable buildings

**Supplement to DDx**
- Make the argument for sustainable designs
- EUI relative to:
  - Design code
  - Energy model
  - Building type
  - Materials
Lessons Learned
Approaches to sustainable design vary widely across the industry.

<table>
<thead>
<tr>
<th>Method</th>
<th>Process</th>
<th>Tool/Software</th>
<th>Implementation</th>
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</thead>
</table>

Energy Data

- Internal vs. External
- Energy Modeling
Working at Holst

COMMUNITY

PROJECT SITE VISIT

MICROBIAL BUILT ENVIRONMENT SPEAKER

NEW HQ CHARETTE

GREEN TEAM
Future Challenges

Design Energy and Site Energy

• Benchmarking
• Energy modeling

Information collection

• Design source energy
• Design CO2e intensity
• LCA/proxy
Next Steps

1. Energy, Materials and Water
2. In-House Energy Modeling
3. Sustainable Design Process
Thank You!