Salazar Architect Inc.

Discovering a Prototypical Sustainable Design Process

Energy Trust of Oregon Net-Zero Emerging Leader: Emily Waldinger
Salazar Architect Inc. creates high-impact public interest architecture through thoughtful client, resident and community involvement, innovative design and creative interiors. Environmental stewardship, economic stability and social empowerment are integrated concepts and by being responsive to these needs we design unique, meaningful places that are rich in architectural character and affordable to build.
Firm Structure

Salazar Architect's staff are organized in three Design Labs, spending 10% of their time on activities that advance our firm's community-based mission.

- Design reviews of ongoing work
- Conferences / Trainings
- Invited Speakers
- Pro-Bono work (One+)

We coordinate the Design Labs and project staffing so that knowledge is holistically integrated into the design work that we do.

- Alex Salazar - Community Design Lab
- Jennifer Nye - Well-being Design Lab
- Matt Bokar - Sustainable Design Lab

COMMUNITY DESIGN LAB
- public interest
- process
- not product
- participatory
- engaging
- empowering
- civil rights
- equity

WELL-BEING DESIGN LAB
- community health
- trauma informed
- wellness
- natural systems
- biophilic

SUSTAINABLE DESIGN LAB
- energy modeling
- minimized carbon footprint
- environmentally sound materials
- HVAC systems
- analysis
- LEED
- Earth Advantage
Energy Trust: Net-Zero Emerging Leaders Internship Scope

GETTING STARTED / FORMALIZING APPROACH
AIA 2030 CHALLENGE: GETTING STARTED / WHERE ARE WE NOW?

Firm: Project Types: Residential Mid/High Rise Projects

Average Project EUI
- Firm performance today
- Delta between current performance and AIA 2030 Goals

% Predicted EUI Reduction
34.2%
Case Study:
Mixed-use affordable housing

- Project Info:
  - podium, 5 over 1, child development center, parking garage, residential amenities, podium courtyard, small retail space
- Test how to integrate energy modeling in the Conceptual and Schematic Design Phase
- Energy Focused Design Process:
  - Internal project kickoff meeting to discuss opportunities to meet 2030 Goals
  - Eco-charrette with Sustainability Lab
  - Take mass models and ideas from Eco-charrette into Sketch-Up and Sefaira
  - Compare scenarios through energy modeling tools
Challenges

Energy Modeling is messy

- Affordable housing programming constraints
  - Effectively modeling a complicated program
- Accounting for human behavior
- Integrating new systems that best fit into our current design process
- Sefaira and Insight 360 have different inputs and outputs
  - No perfect solution
  - Which modeling system works best?
Case Study Project: Testing Sefaira in Conceptual Design
**EXTERIOR / MASSING INTERVENTIONS**

Small Impact

**ENVELOPE INTERVENTIONS**

Big Impact

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**Case Study Project: Testing Insight in Design Development**
Takeaways

- For affordable housing: Prioritize efficient envelope over massing and exterior shading
- Sefaira best integrates into Conceptual and Schematic Design Phases
- Insight 360 is more helpful in Design Development and Construction Documents Phase
- Use one tool to fill in the gaps of the other
Prototypical Design Process
Next Steps

Standardizing Reporting Protocol

Continuing to Test Energy Modeling Tools (Cove Tool)

Post-Occupancy Evaluations
Thank you!
Emily Waldinger, NZEL Intern
Matt Bokar, NZEL Mentor