



Collect, Synthesize, Inform

Leveraging Data to Achieve Net Zero Goals

NET ZERO EMERGING LEADER INTERNSHIP

**GBD ARCHITECTS | ENERGY TRUST OF OREGON
2021**

GBD

GBD NZEL INTERN LINEAGE

2020



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- DRAFT INTERNAL STANDARDS OF SUSTAINABLE DATA COLLECTION
- CREATE INTERNAL 2019 PROJECT SUSTAINABILITY CATALOGUE
- REPORT 2019 PROJECT DATA TO DDX

47.4% Average predicted EUI reduction for 2019



2021



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- EXPAND INTERNAL STANDARDS OF SUSTAINABLE DATA COLLECTION
- MERGE PROJECT CATALOGUE WITH POWER-BI INTERFACE/ GENERATE GBD PROJECT DASHBOARDS
- REPORT 2020 PROJECT DATA TO DDX

44.8% Average predicted EUI reduction for 2020



2022

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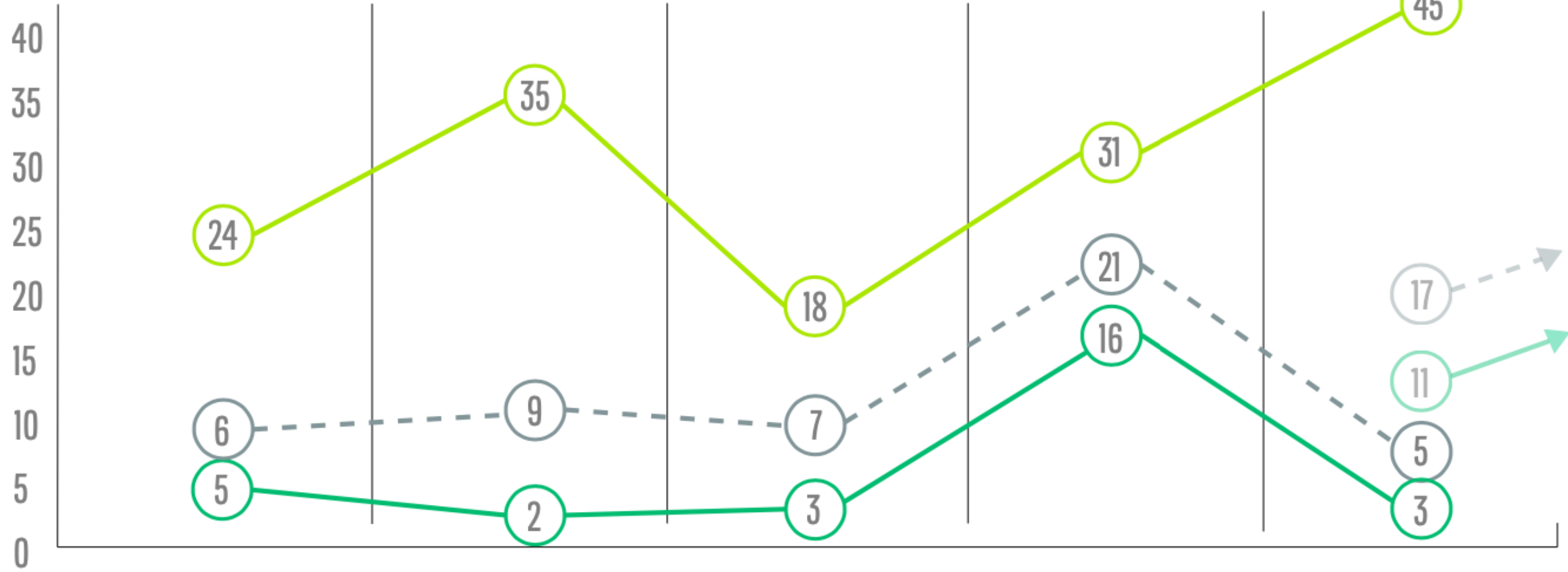
- EXTEND GBD PROJECT DATA WITHIN POWER-BI
- DRAFT PROJECT DATA SUBMISSION PORTAL
- IMPLEMENT PROJECT DASHBOARDS INTO GBD DESIGN WORKFLOW
- UTILIZE ARCHITECT / DESIGNER INPUT TO FINE-TUNE INTERNAL DASHBOARDS
- LEVERAGE PROJECT DASHBOARDS TO MEET AIA 2030 GOALS

GBD

INTERPRETING ANNUAL DATA

GBD Portfolio Data Over the Years

2020. GBD Architects Inc.
NZEL Internship. Energy Trust of Oregon.



2016
GBD Signs the 2030
Commitment

2019
NZEL Internship
GBD Hired Sustainability Manager

2020
NZEL Internship
Introduced Power-BI

Number of Active Projects

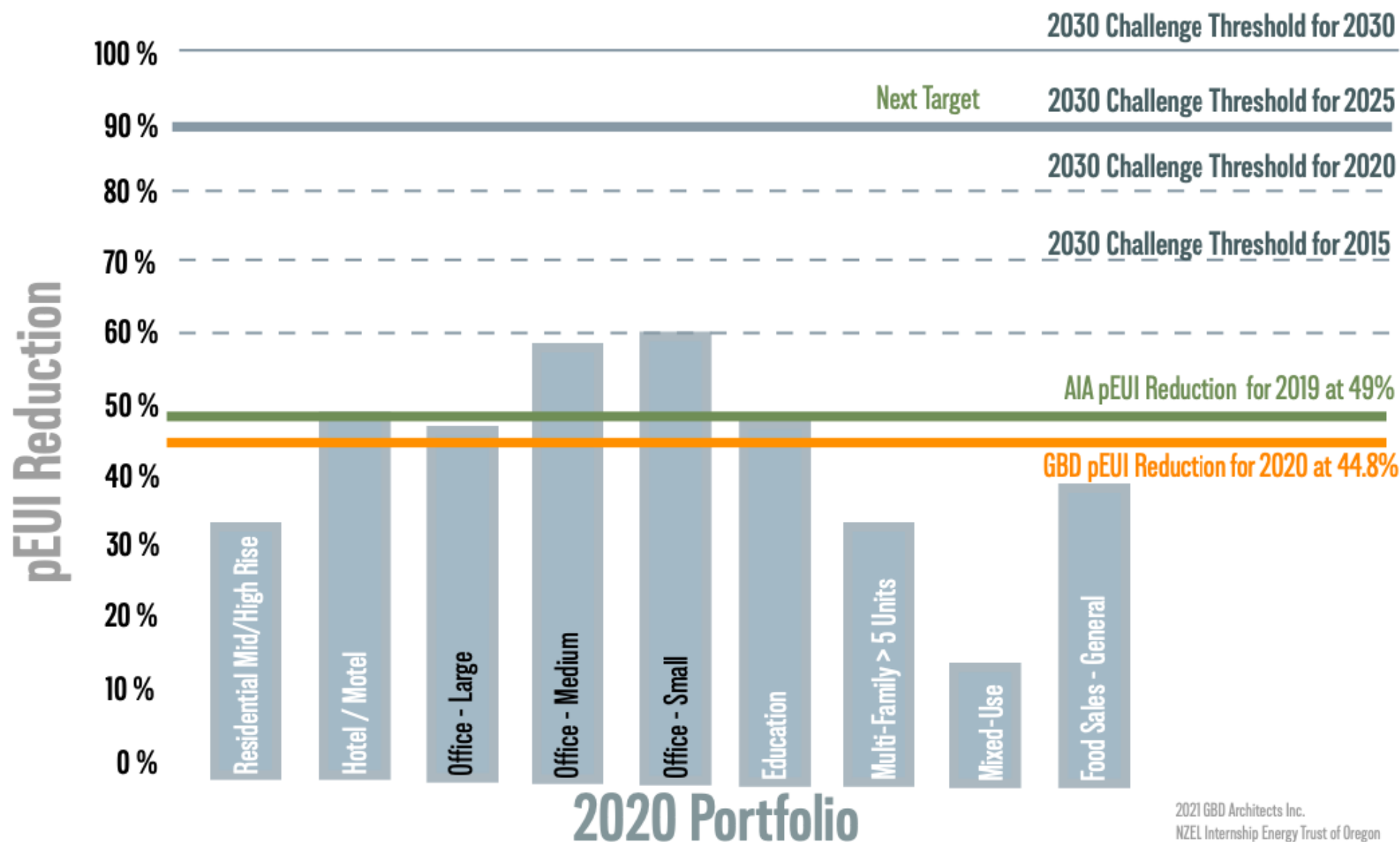
Number of Projects Energy Modeled

LEED Projects



WHAT DOES THE DATA TELL US?

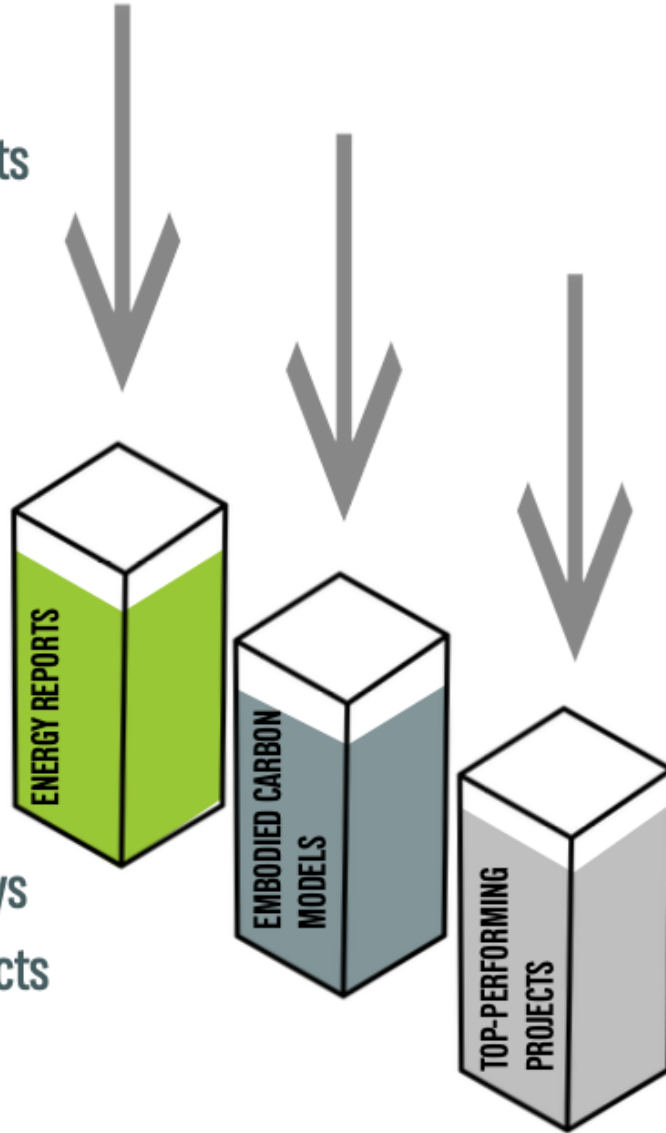
Predicted EUI Reduction x GBD 2020 Portfolio



HOW CAN WE MAXIMIZE OUR CURRENT DATA?

THE CURRENT PROBLEM...

- Project performance reports are siloed in storage
- Reports lay dormant
- Design teams change
- Difficult to find trends
- Archived data typically plays no role in new design projects



OUR NEEDS...

- Generate project performance dashboards
- Cross-reference past project performance
- Pattern recognition of trends through graphics
- Streamline Communication
- Keep a current designer driven project database



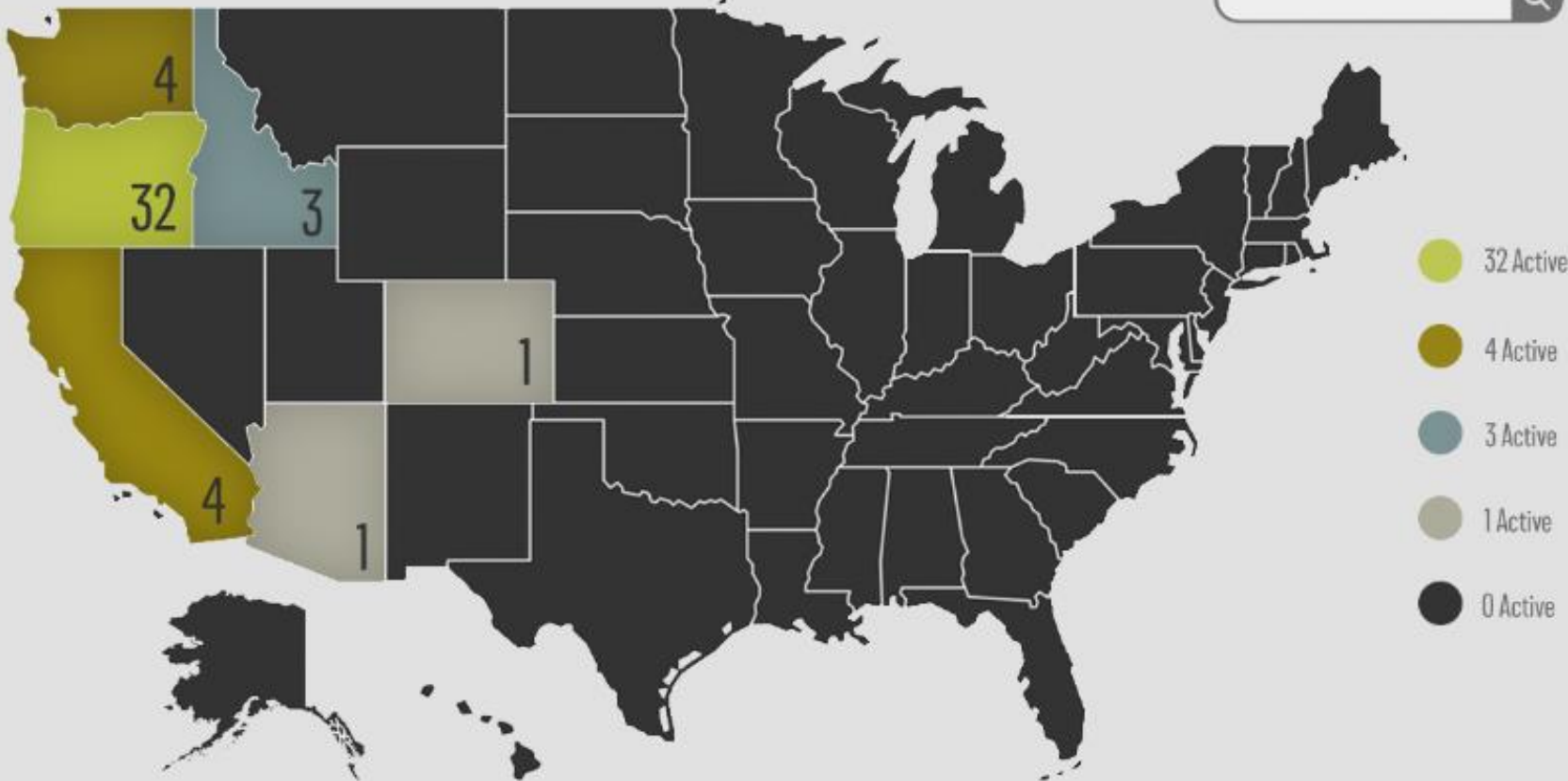
HOW CAN WE MAXIMIZE OUR CURRENT DATA?

THE SOLUTION... Merging current project data with Power-BI Platform

- Live project dashboards with sustainability measures and modeling results streamline team communication
- Dashboards will facilitate “What if...” scenarios for project teams
- Linking energy conservation with costing models
- Data is translated into customizable info-graphics highlighting trends
- Used as internal platform to make informed design decisions
- Internal tracking of GBD's progress towards 2030 commitment



45 ACTIVE PROJECTS



- 32 Active
- 4 Active
- 3 Active
- 1 Active
- 0 Active

pEUI Reduction 2020



GBD TOP-PERFORMERS

PROJECT A	pEUI -0.03
PROJECT B	pEUI 0.00
PROJECT C	pEUI 22.80
PROJECT D	pEUI 29.25

GBD Average pEUI 41.64

pEUI % Reduction 44.8%





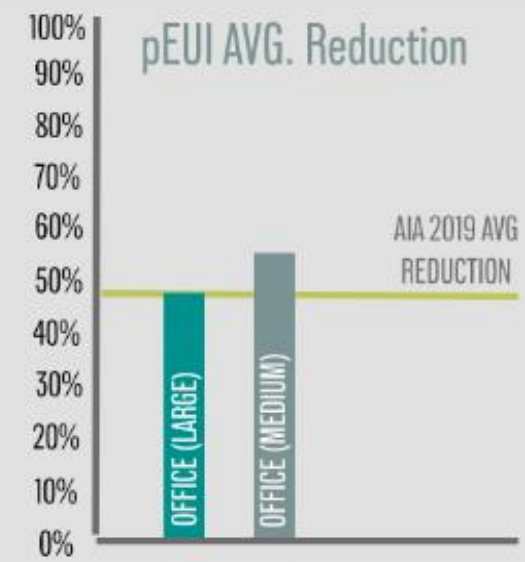
PROJECT RESULTS

PROJECT G	32,000 SQFT	pEUI 0.03
PROJECT K	35,000 SQFT	pEUI 22.8
PROJECT N	32,080 SQFT	pEUI 29.25
PROJECT O	306,079 SQFT	pEUI 30.0
PROJECT S	154,651 SQFT	pEUI 43.19

Projects Modeled 5

Total GSF Modeled 559,810

Office (Large & Medium) Average pEUI 25.04



Project Type

- | | |
|--|--|
| <input checked="" type="radio"/> Office (Large) | <input type="radio"/> Residential Mid/Highrise |
| <input checked="" type="radio"/> Office (Medium) | <input type="radio"/> Mult-Family > 5-Units |
| <input type="radio"/> Office (Small) | <input type="radio"/> Hotel / Motel |
| <input type="radio"/> Interiors | <input type="radio"/> Distribution / Shipping |
| <input type="radio"/> Education | <input type="radio"/> Senior / Assisted Living |
| <input type="radio"/> Mixed-use | <input type="radio"/> Food Sales / General |

Country

U.S ▾

Province/State

Oregon ▾

City

▾

Climate Zone

4C ▾

GSF

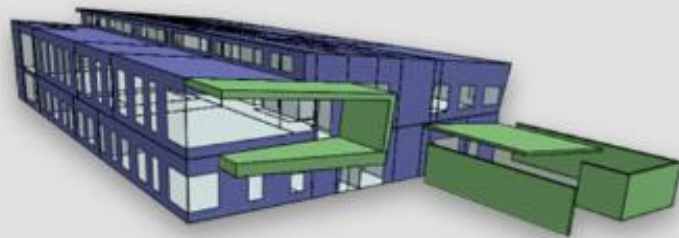
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Design Phase

▾

Project Date

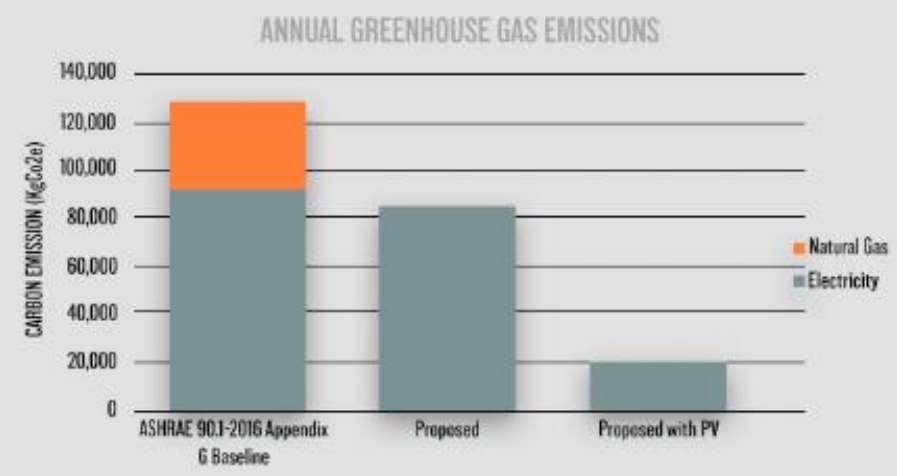
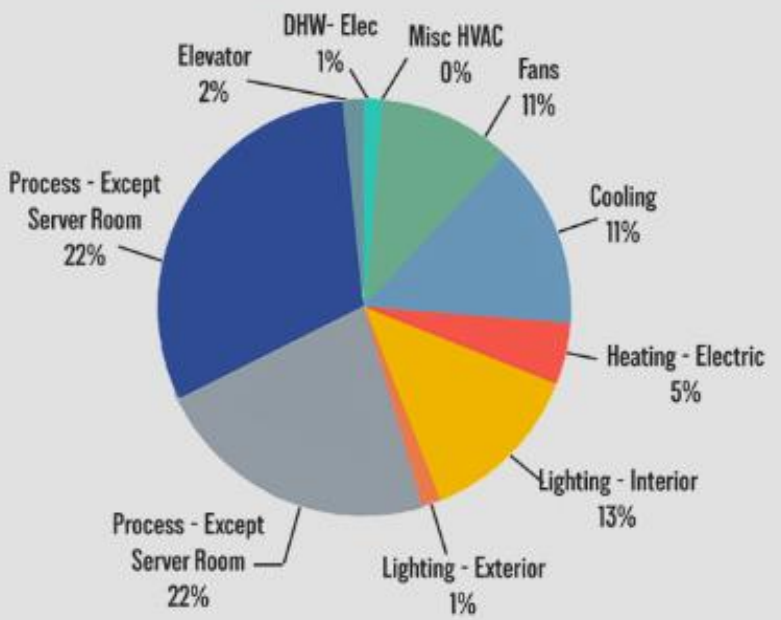
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GSF 33,770
Office (Medium)
CD Phase
Zone 4C
0.64 LPD
32% Window/Wall

Project G
Pursuing
**LEED PLATINUM
NZE**

Energy Use Breakdown



System Options

- HVAC System**
 - ☒ VRF + DOAS
 - ☐ Natural Gas 4-pipe FCU
 - ☐ VRF
- PV**
 - ☐ No PV
 - ☒ 200 kW
- Lighting**
 - ☐ Oregon Code-Equivalent
 - ☒ 20% Reduction
- Envelope**
 - ☒ Basis of Design
 - ☐ Oregon Code-Equivalent



Thank you.