
Oregon Zoo Education Center



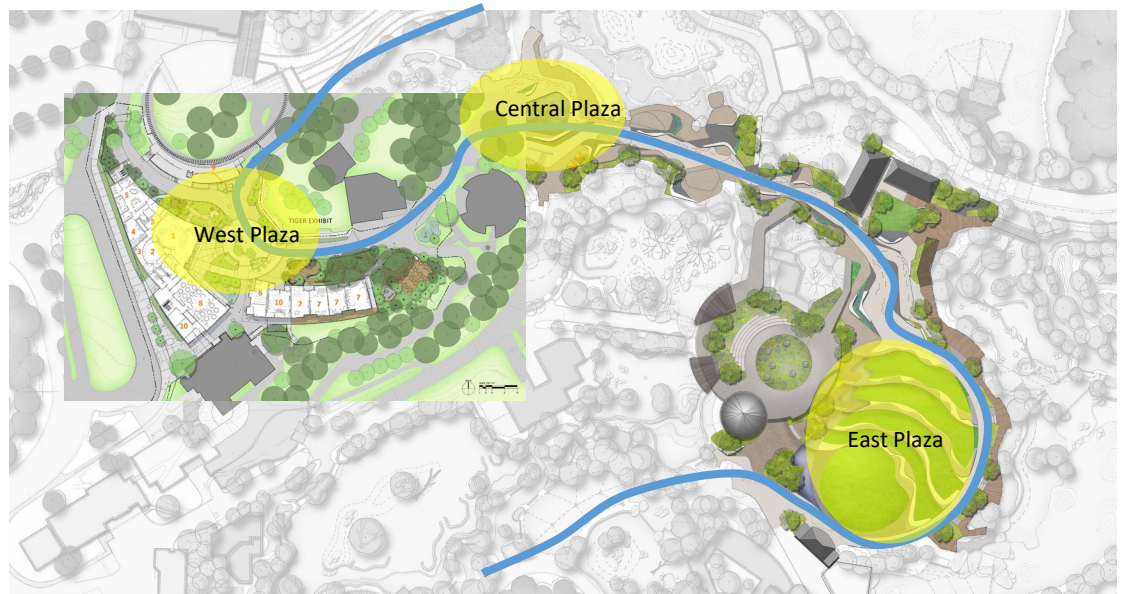
**AIA
COTE Top Ten**

Alec Holser, AIA, Partner, Opsis Architecture
Heather DeGrella, AIA, Sustainable Design Director





2008 Masterplan



Oregon Zoo Education Center
 \$17.4 million budget
 Opened March 2017



opsis architecture



The project is in the Valley Foothills ecoregion, transitioning between the agricultural Willamette Valley and the heavily forested Cascade and Pacific Coast mountain ranges.



- 1 NEST
- 2 insect habitat
- 3 insect habitat support

- 4 turtle lab
- 5 office / administration
- 6 teen program

- 7 flex / event
- 8 cafe
- 9 classroom

- 10 tent platforms
- 11 firepit
- 12 train
- 13 support

"In nature, small things matter: Small animals. Small habitats.
And the small actions you take to protect them."



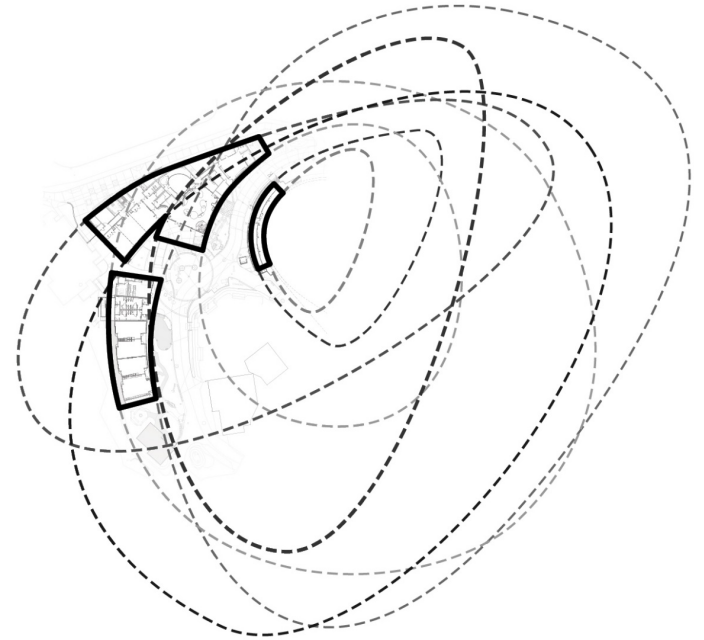
"Ambiguous," the sculpture in the plaza, appears as a growing, self-supporting life form. Inspired by the likeness of forms seen in nature at the beginnings of life, the sculpture is made of small repeating pieces that add up to a whole – the same way small actions of individuals make a big collective impact.



M1

Design for Integration | Oregon Zoo Education Center

A place for exploring, learning and playing



The design derives from the flow of the site, the bending of the Zoo path and the flow of rain water. Like a bird making its nest, elements of nature are woven together to support life.



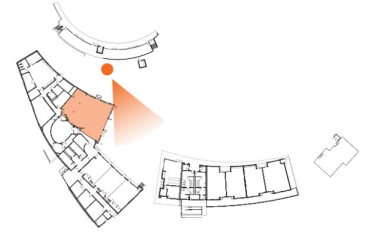
Visitors meet local "Heroes for Wildlife" through the comic book-inspired display in the NEST.



Designed through sketches and hand-built models, a tactile experience that is itself connective, the Zoo Teens take part in designing the interior of their space.



Designed through sketches



Millions of birds die each year from flying into windows, and Portland's location along the Pacific Flyway makes spring and fall migration periods especially deadly. At the Education Center, bird-friendly lights and acid etched glass – identified with help from the American Bird Conservancy – help prevent window strikes.



Small Things Matter



Hands-on Engagement - What can I do to make change?



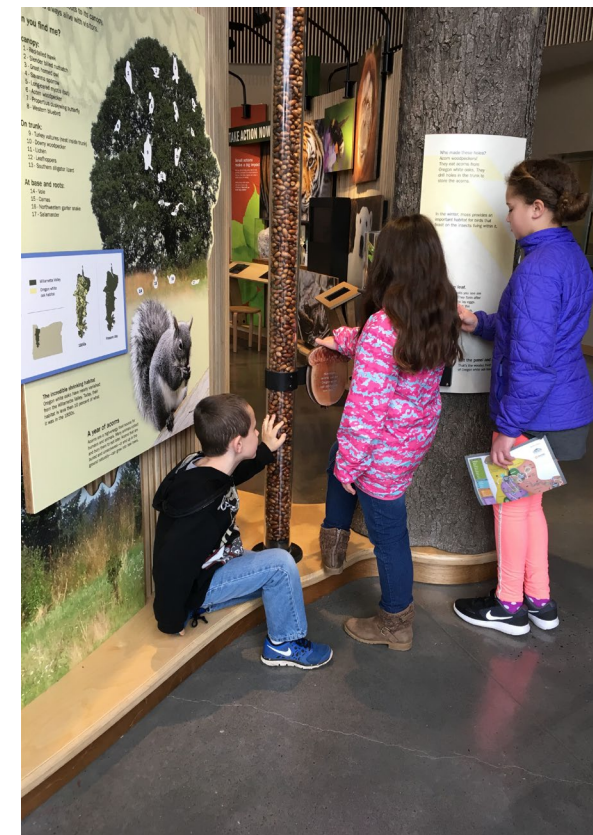
opsis architecture



Inspire zoo visitors to take conservation action



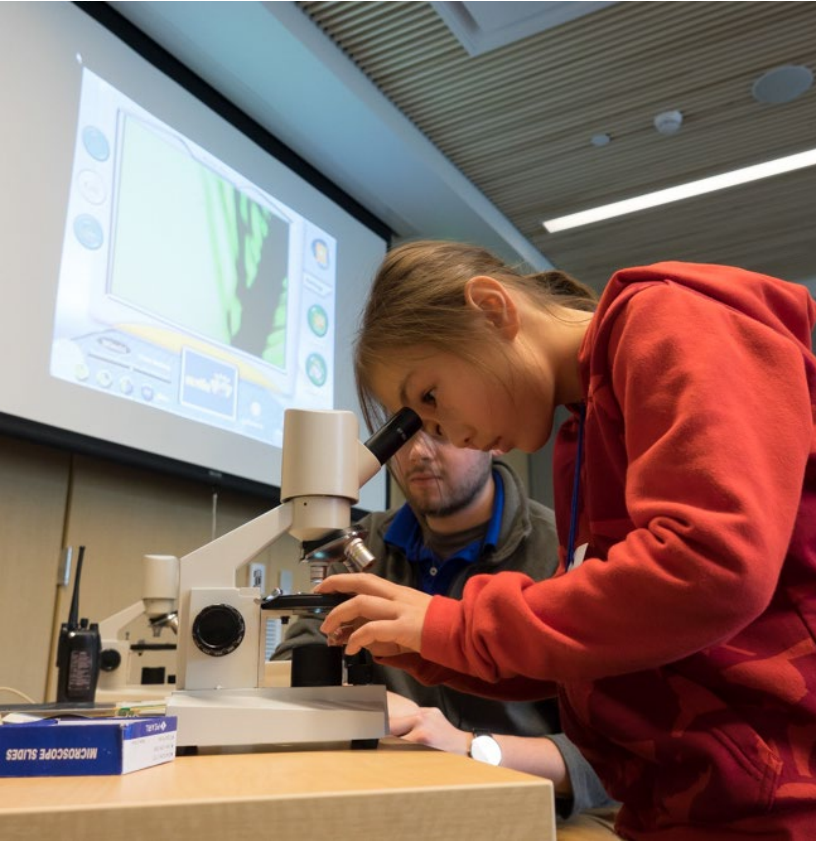
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Inspire zoo visitors to take conservation action



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Engage more diverse audiences in conservation education



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Raise visibility and support the work of nature, conservation and sustainability organizations



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On-Site Partner Organization



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Showcase green living and sustainable practices

water metrics

168k

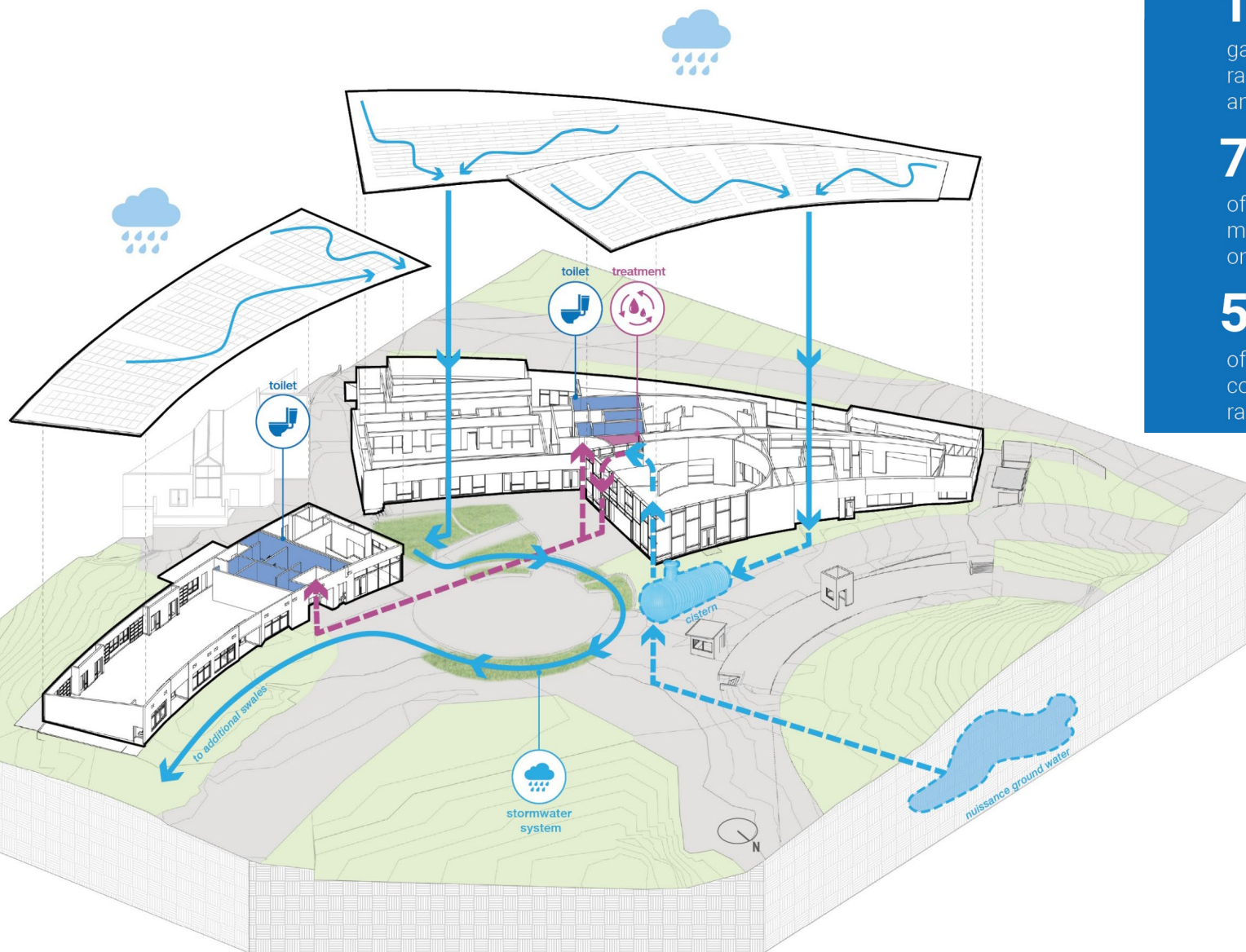
gallons of
rainwater
annually

75%

of rainwater
managed
on site

56%

of water
consumed is
rainwater



M4

Design for Water | Oregon Zoo Education Center



The client was committed to a bird-friendly design. Bird-friendly glass creates a veil between kids in the camp and visitors in the Zoo. Open tents on wood platforms create flexible classrooms while economizing space.

M5

Design for Economy | Oregon Zoo Education Center

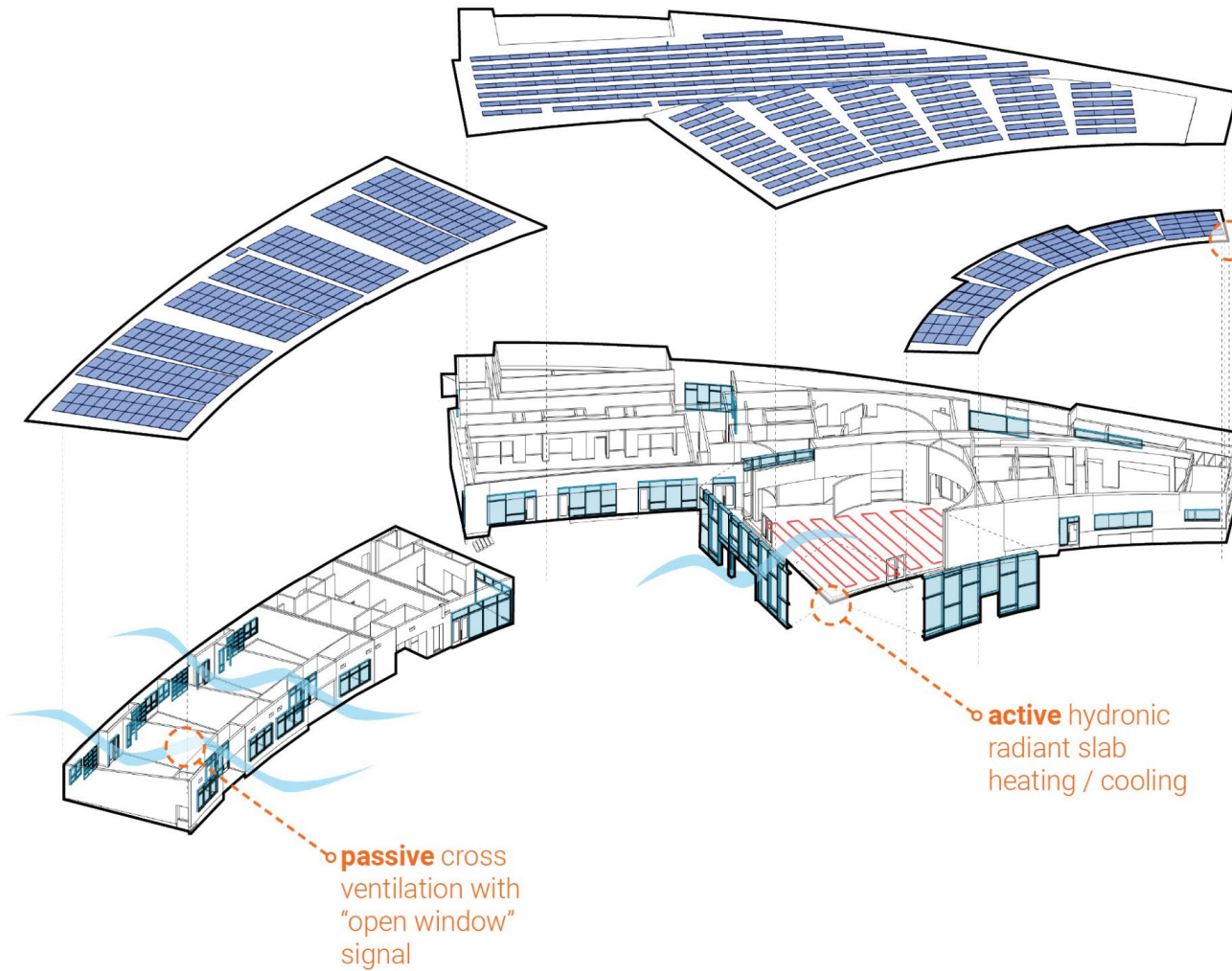
energy metrics

242 tons

CO² reduced
annually

-4.3

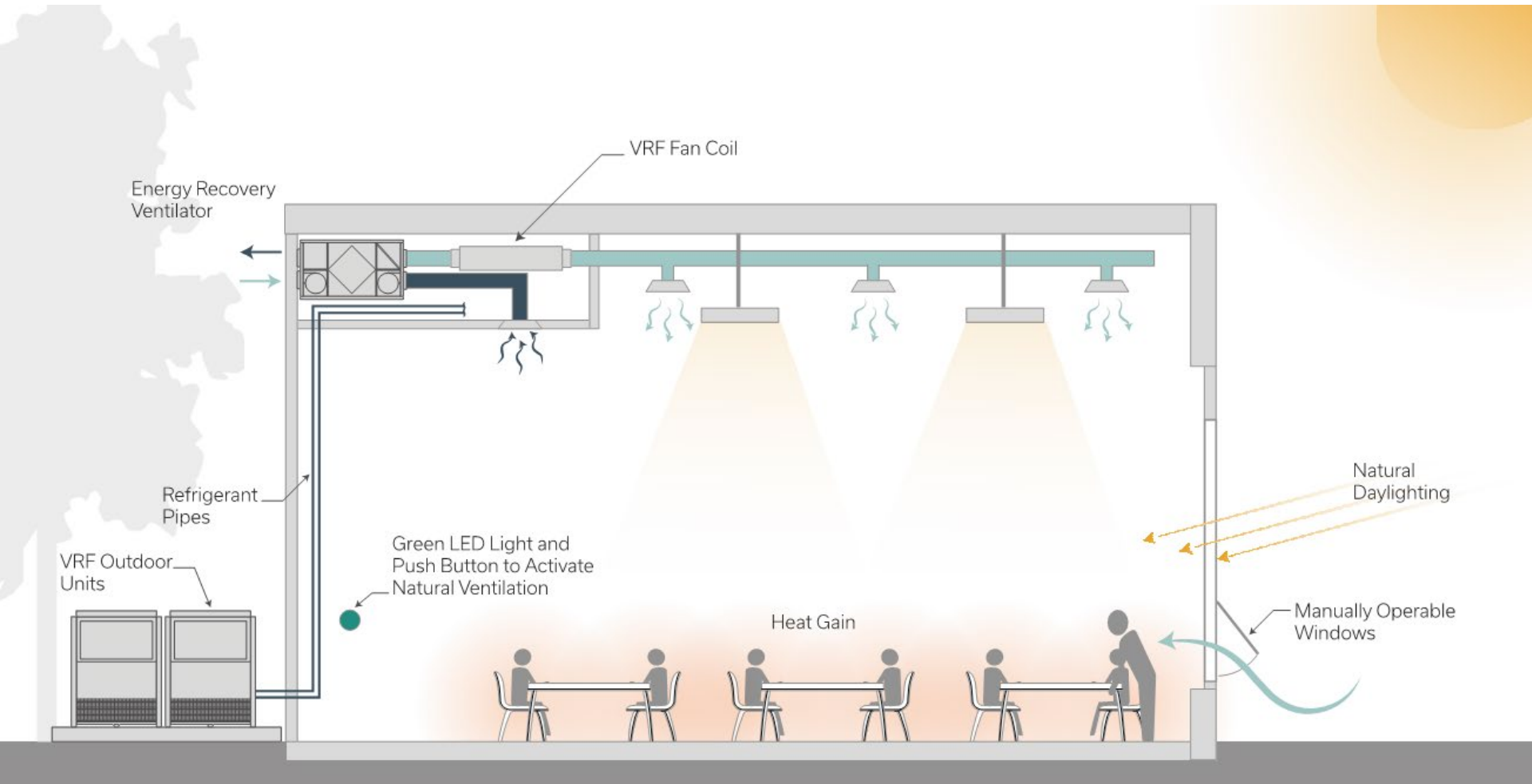
kBTU/sf-yr
predicted **net**
positive energy

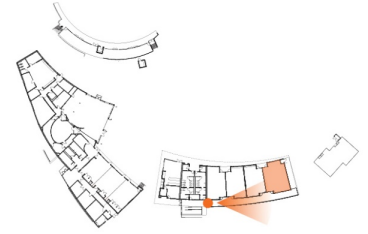


M6

Design for Energy | Oregon Zoo Education Center

Classroom Mechanical System





100%

feel the design
strengthens their
**relationship to the
natural world**

90%

are satisfied with the
opportunities for
views outdoors

100%

are satisfied with the
quality of natural light

85%

are satisfied with their
ability to **control glare**

"It is extremely nice having the **garage doors that can open up**, which expands the space and looks out over the garden and to the hills beyond."

—POE survey response

M7

Design for Wellness | Oregon Zoo Education Center



100%
bird-friendly
glazing

63%
of wood used is
FSC certified

32%
of materials
are regional

• historic mural
preserved from
original zoo entrance

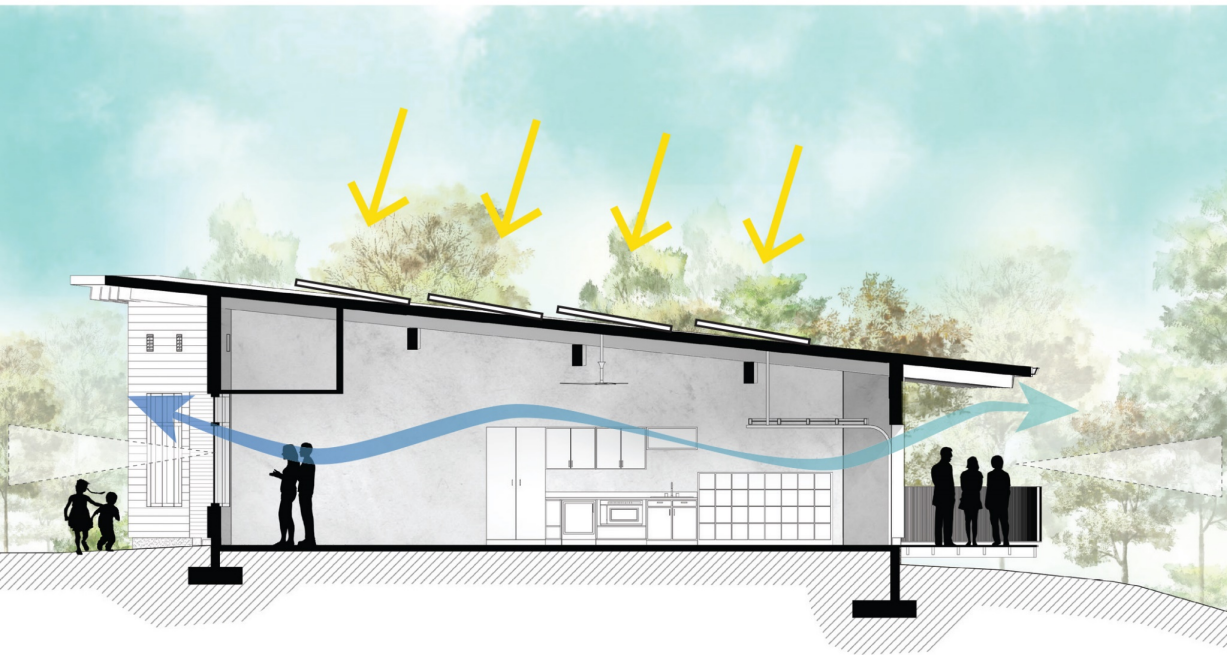
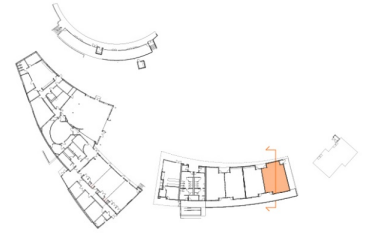
• slab as exposed
structure and
thermal mass



M8

Design for Economy | Oregon Zoo Education Center

The wood structures and wildlife habitat in the exterior discovery zones are made from salvaged and reclaimed materials.



At the plaza, patterns of recycled blue glass in the concrete show visitors the path that rainwater takes below ground to reach the cistern. Seventy-five percent of rainwater is managed on site, anticipating increasingly unpredictable rain patterns.



Peeking at the rooftop PV and rainwater skid

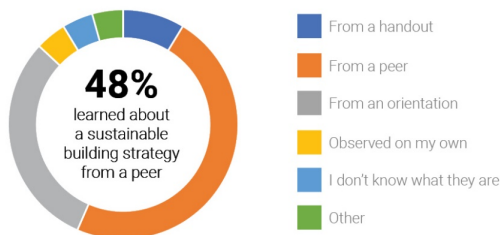
“Students often ask why the handles in the bathrooms are purple, which **creates teachable moments**. We incorporate building design into our curriculum”
– POE survey response

100%
feel the design provides opportunities for **teachable moments**

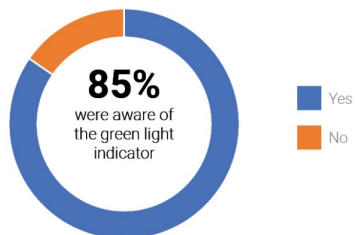
87%
are satisfied with the **temperature** of their workspace

86%
are satisfied with the **air quality** of the spaces they use

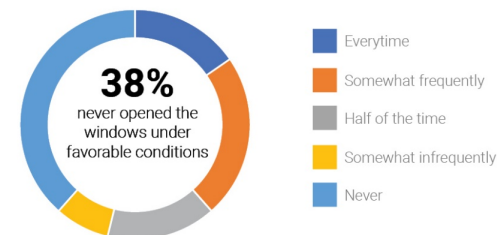
Q: How did you learn about the sustainable aspects of this building?



Q: The classrooms are naturally ventilated and use a green light indicator to let occupants know when windows need to be opened. Were you aware of the green light indicator in the classrooms?



Q: How often do you open the windows and use the manual switch to disable the HVAC unit when the green light indicates conditions are favorable?





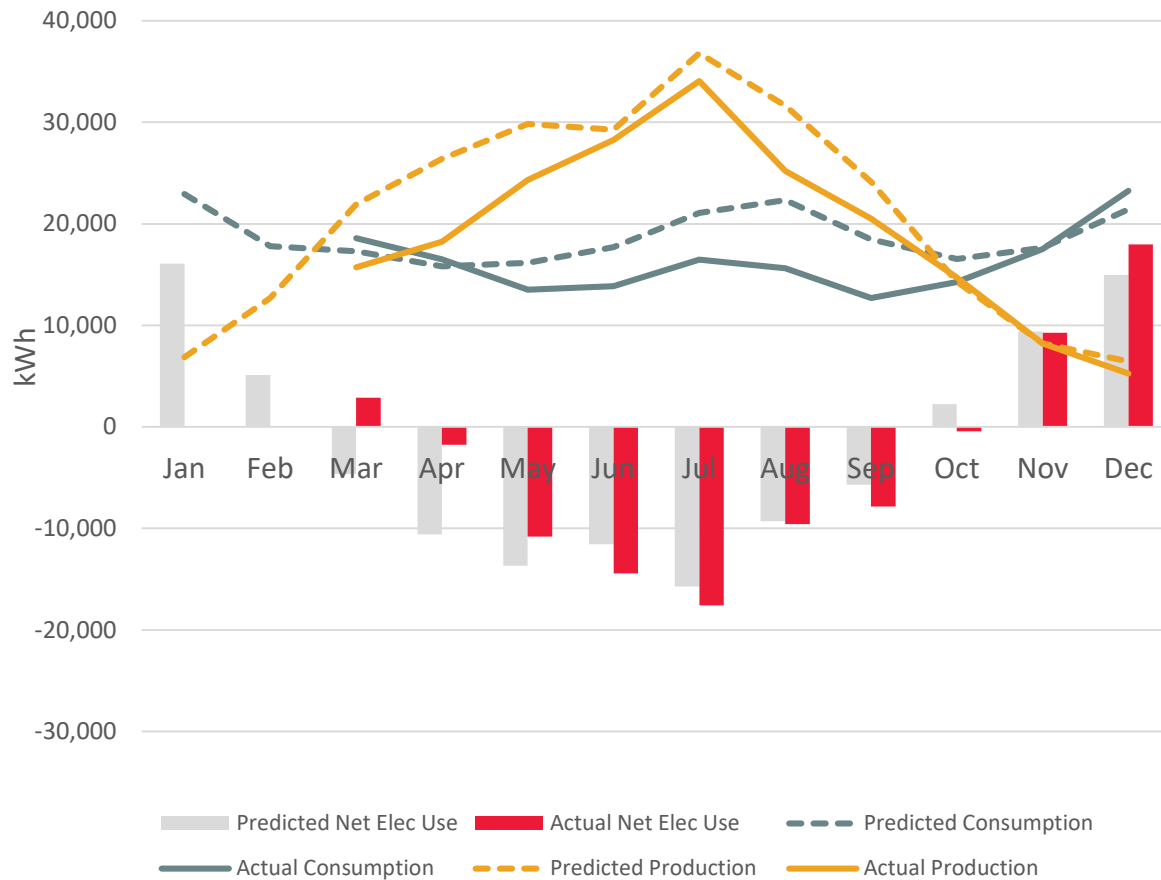
M10

Design for Discovery | Oregon Zoo Education Center

Insect Zoo

Net Zero Energy Target

Oregon Zoo - Education Center
Predicted vs. Actual Energy Performance





HOME



ENERGY



WATER



HISTORY



NET ZERO

Past 12 Months

Produced an Excess 231 kWh

Total Used: 223,248 kWh
Total Produced: 223,479 kWh



Produced more than used
Used more than Produced