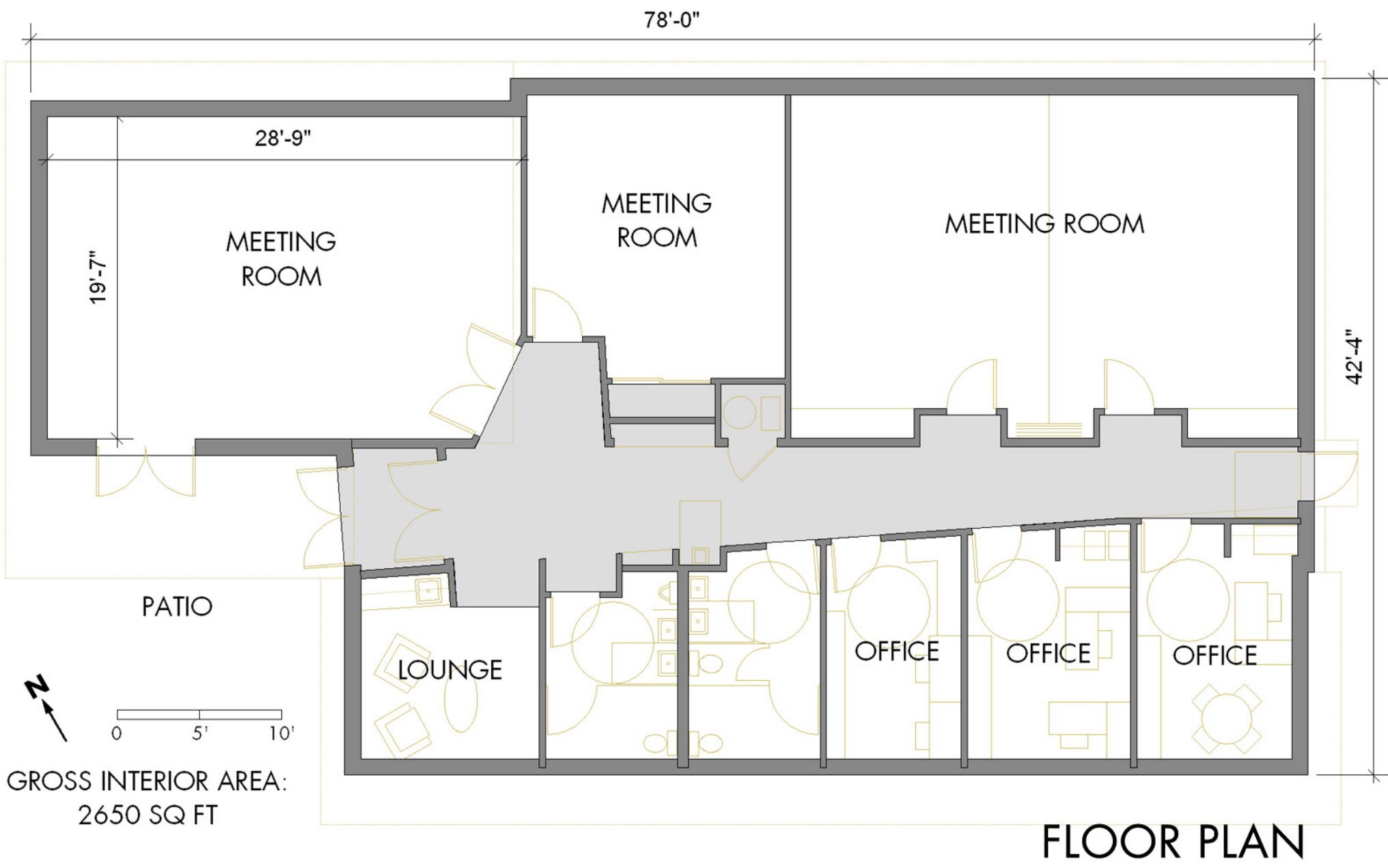




A Passive House Office for Oregon's Farmworker Union

¡La Casa Pasiva!
(por gente activa)

Piñeros y Campesinos Unidos del Noroeste (PCUN) - Northwest Treeplanters and Farmworkers United

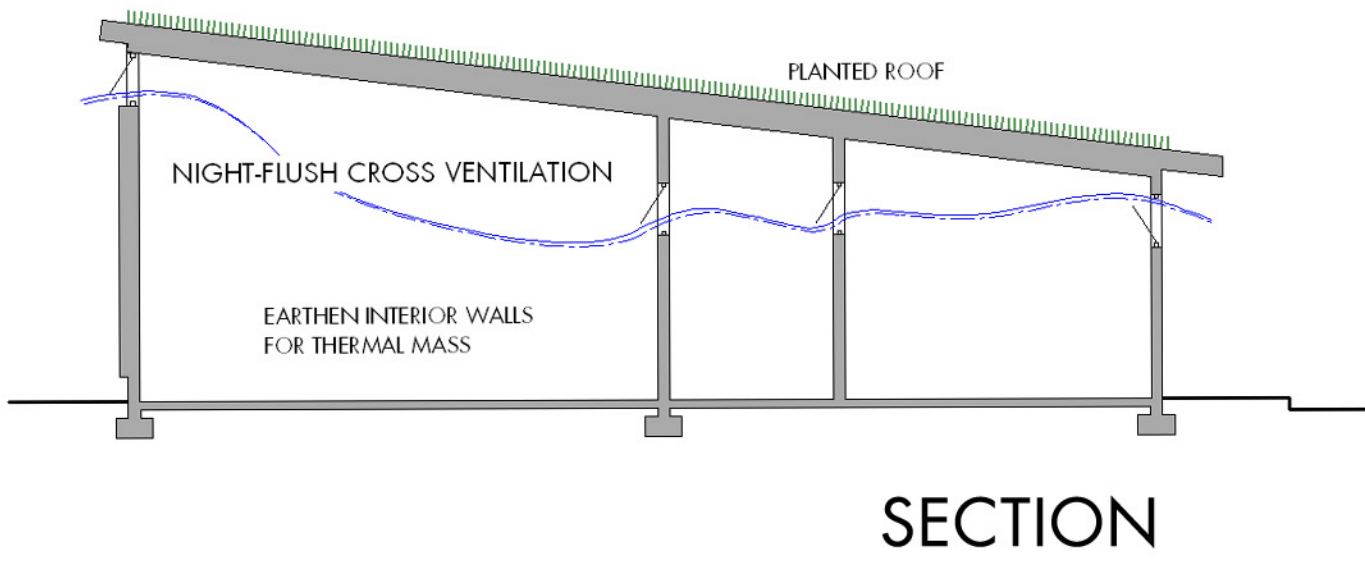
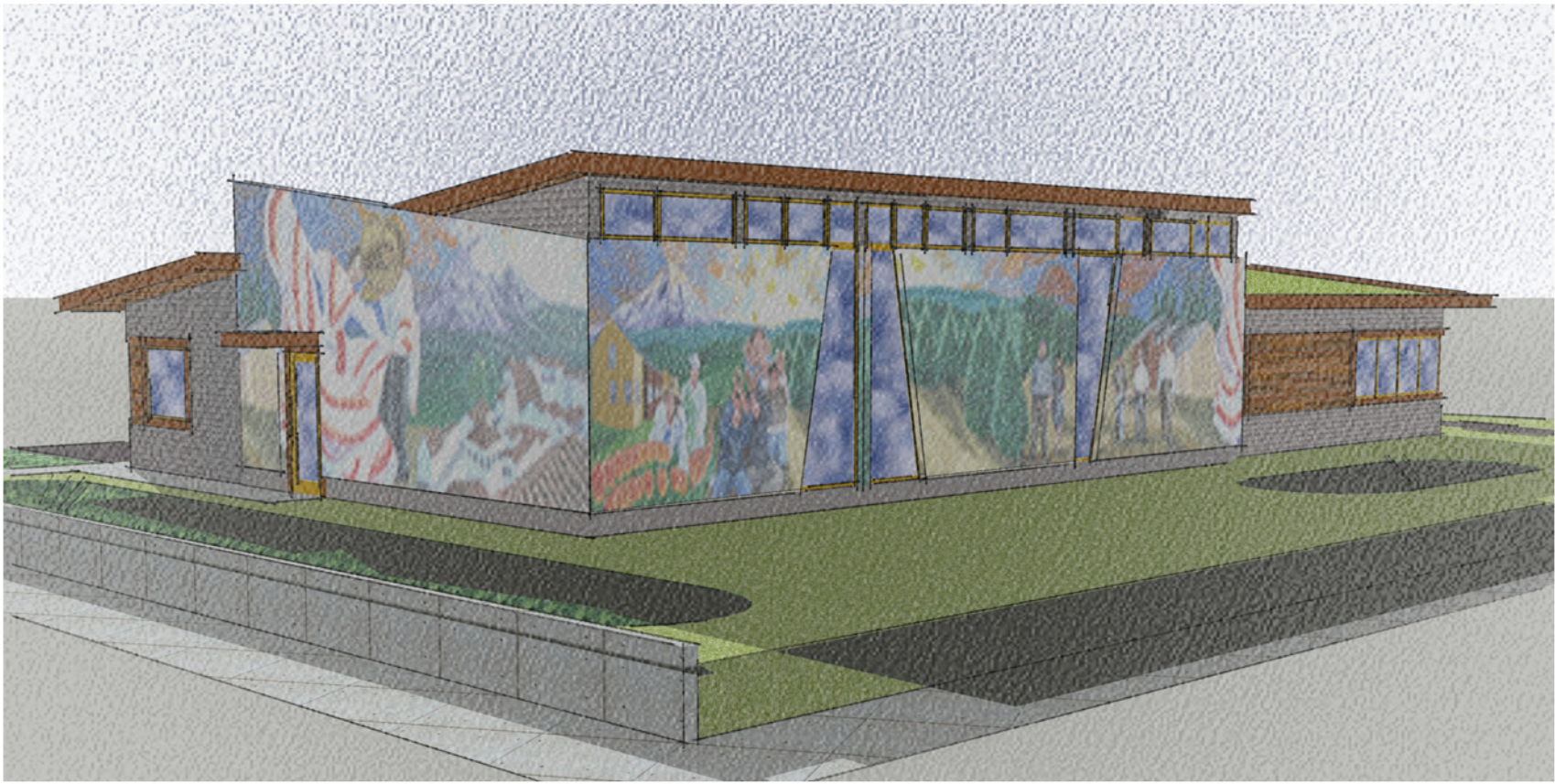


PROJECT OVERVIEW

- Location: Woodburn, Oregon (30 miles south of Portland)
- The CAPACES Leadership Institute will be a hub of PCUN's activity, hosting office space and meeting space for the many volunteers of the organization.
- 100% volunteer labor, 100% financed by PCUN
- 2650 sq. ft. (gross interior)
- Passive House Envelope:
 - Envelope-Area-to-Treated-Floor-Area Ratio: 3.9
 - Wall: R-42 – R-56
 - Passive House Window Sponsor being solicited
 - Roof: R-84
 - Slab: R-34
 - 0.6 ACH50 (on-site training for volunteer labor to achieve)
- Planted Roof & Planted Window Shading
- Passive Cooling: Earthen interior walls increase thermal mass and maximize the capacity of natural ventilation cooling (night-flush). Mechanical cooling only necessary during periods of high occupancy.

PROJECT TEAM

- Client:
 - PCUN, Oregon's Farmworker Union
- Architect:
 - Communitecture – Patrick Donaldson
- Passive House Consulting:
 - Green Hammer – Stephen Aiguier & Dylan Lamar
- Many, Many Volunteers and Financial Supporters!



CONSTRUCTION DETAILS

ROOF ASSEMBLY

- 24" Truss @ 24" o.c. (Built on site with plywood web to reduce thermal bridging)
- 2x6 Top Chord creates overhang
- Electrical chase below air barrier to minimize penetrations

WINDOW INSTALLATION

- Triple-pane windows with insulated frames (ie. Serious Windows, 925 Series)
- Windows inset within wall to reduce thermal bridging around frame
- Windows intalled over 2x2 high-density XPS furring strips (solid 2x2 blocking substituted as necessary, ie. at corners and midpoints)
- Windows taped to air barrier sheathing for air-tightness
- EPS foam added where possible (ie. overlapping fixed portion of window frame) to reduce thermal bridging
- Sheet metal sill

WALL ASSEMBLY

- 2x4 @ 24" o.c. structural stud (all services run in this cavity to minimize penetrations through air barrier)
- Dense-pack cellulose insulation (>3.5 lb/cf) fills all cavities (high density necessary to prevent settling)
- Plywood or OSB air barrier (and structural sheathing). All seams glued and taped for airtightness (highlighted in red)
- Larsen Truss: 2x2 inner chord; Plywood gusset plates create truss web; 2x3 outer chord
- Fiberboard or Plywood exterior sheathing
- Plastic furring strips (ie. El Dorado) create drainage cavity behind cladding

FOUNDATION

- Thickened edge slab with plastic sheeting air barrier below (all seams taped). Plastic sheeting must be taped continuously to air barrier sheathing of framed wall.
- 8" EPS foam below slab
- 4" high-density XPS foam below thickened edge
- 8" EPS foam around slab perimeter; 4" of perimeter insulation extends 6" below XPS or to frost depth, whichever is greater
- Drainage mat and concrete board protect perimeter insulation
- Plywood and flexible flashing installed on bottom of larsen truss to prevent pest and moisture entry

