2021 Trade Ally Forum: Oregon's new Energy Code and EPS

October 2021

Energy Trust of Oregon

Today’s agenda

- EPS New Construction and Trade Allies
- Review code changes in Oregon
  - Additional Measure Table
  - H/AC inside
  - Balanced ventilation

EPS New Construction

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2021

EnergyTrust of Oregon

EPS New Construction

- Supports energy-efficient improvements beyond code
- Works with trade allies from design phase through final verification
- Offers marketing and technical assistance, training and financial incentives

Available cash incentives in Oregon

- $1,123 - $5,223 cash incentives to help builders move beyond code
- $300 - $1,889 verification incentive
- $250 affordable housing verification incentive
- $200 solar ready incentive
- $750 net zero incentive
- Varying incentives with solar installs
- Varying incentives for early design and solar design assistance

EPS participants and program support

- **Builder—**chooses a verifier, shares plan set, schedules inspections

- **Verifier—**provides cost effective, energy efficient expertise to builders and supports subcontractors to ensure program standards are being achieved.

- **Solar field support—**provides solar program consultation and on-site technical support for incorporation of solar ready and solar energy systems.

- **Trade ally support—**supports builders, subcontractors and verifiers, with on-site training and on-line webinars, helping each group understand and meet EPS requirements.

Major changes in the 2021 ORSC

ADDITIONAL MEASURES TABLE

H/AC INSIDE

BALANCED VENTILATION

2018 ORSC: Choose two additional measures

1	High-efficiency walls
2	Upgraded features
3	Upgraded features
4	Super insulated windows & attic OR framed floors
5	Ducts Inside or air sealing ducts
6	High-efficiency thermal envelope UA
A	High-efficiency HVAC
B	Ducted HVAC
C	Ductless heat pump
D	High-efficiency water heater

Now

2021 ORSC: Choose one additional measure

1	High-efficiency HVAC system
2	High-efficiency water heating system
3	Wall insulation upgrade
4	Advanced envelope
5	Ductless heat pump
6	High-efficiency thermal envelope UA
7	Glazing area
8	Three ACH air leakage control and efficiency ventilation

Additional builder impacts

- Service water pipes insulated 8 ft. in and 8 ft. out
- Recirculating kitchen hoods allowed if 20 cfm exhaust somewhere in home
- Windows must be at least 0.27 U-factor
- All exhaust fans are required to be ENERGY STAR certified
- Exhaust fan controls on all fans, including half-baths
- Must air seal according to air leakage checklist
- Must use duct mastic on all duct seams, not tape

Major changes in the 2021 code

ADDITIONAL MEASURES TABLE

H/AC INSIDE

The 2021 ORSC will require systems to be in conditioned space (or “deeply buried ducts”)

BALANCED VENTILATION

2021 ORSC Heating and Cooling

1. Air Handlers inside the thermal envelope
2. Duct Mastic
3. Ductwork inside the thermal envelope
4. Exception: Deeply bury ductwork

1. Air handler inside thermal envelope

- Closet inside the thermal envelope

H/AC INSIDE

1. Air handler inside thermal envelope

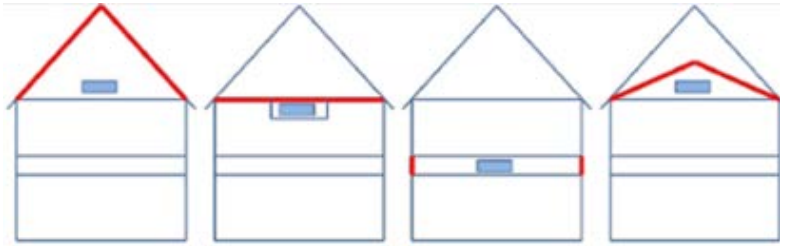
- Build the thermal envelope around the system

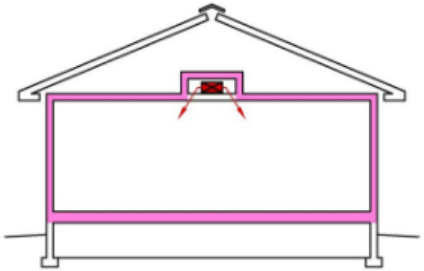
H/AC INSIDE

2. Duct mastic on all ductwork

3. Ducts inside options

- Between floors & in interior walls
- Dropped soffits
- Attic coffin/bulkhead
- Oregon Truss or Modified Plenum Truss
- Sealed attics
- Or go ductless!





4. Deeply buried ducts

Exception:

- Ducts deeply buried in insulation in accordance with all of the following:
  - Insulation shall be installed to fill gaps and voids between duct and ceiling, and a minimum of R-19 insulation shall be installed above the duct between the duct and the unconditioned attic.
  - Insulation depth marker flags shall be installed on the ducts every 10 feet or as approved by the building official

4. Deeply buried ducts

- Well-described in the 2018 International Energy Conservation Code (IECC) and Building America Solution Center (BASC)
- Requires a minimum insulation for both the duct and insulation above the duct

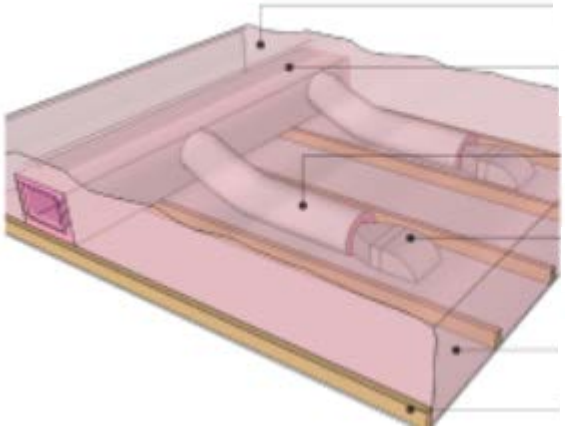


Image courtesy of BASC

Major changes in the 2021 code

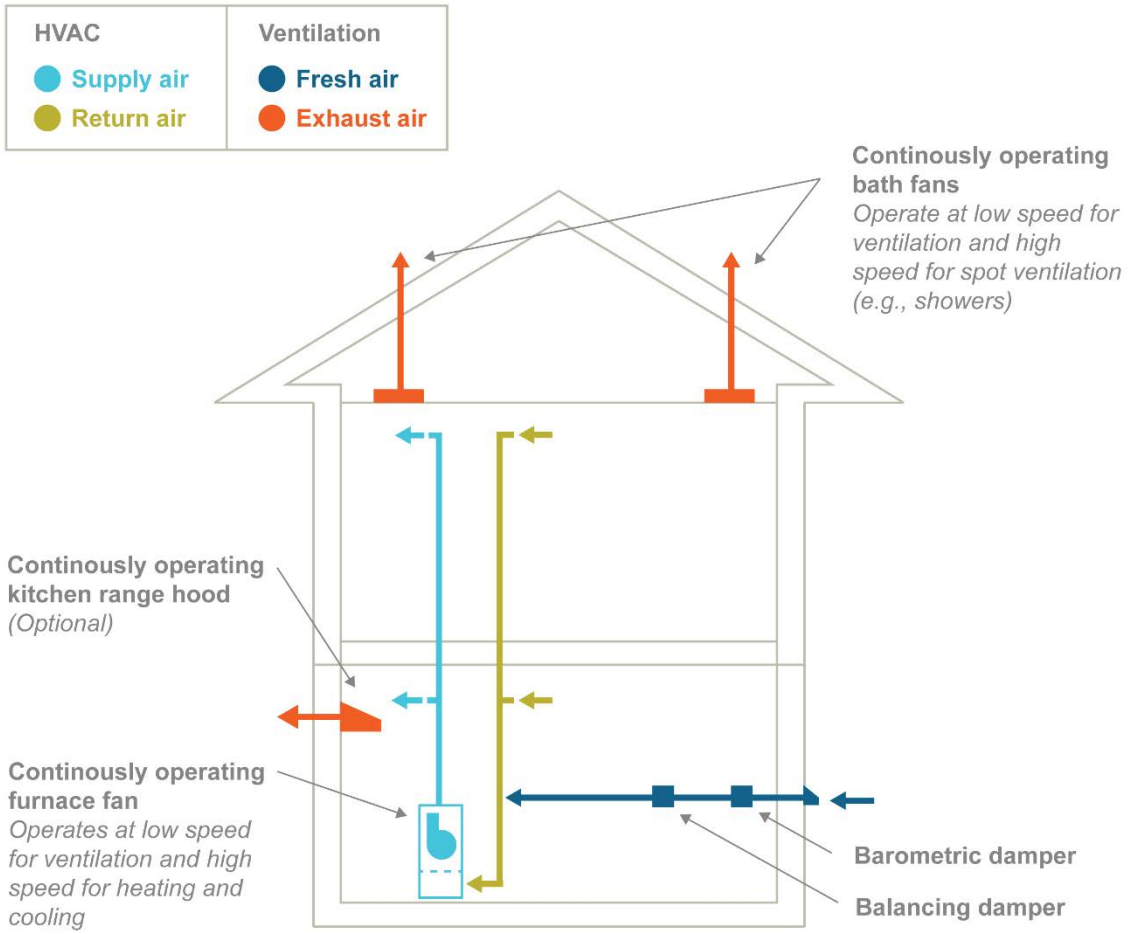
ADDITIONAL MEASURES TABLE

H/AC INSIDE

BALANCED VENTILATION

1. The 2021 ORSC requires a “balanced” ventilation system where “concurrently operating mechanical exhaust and mechanical supply” are within 10% of the same airflow rate
2. The minimum whole-house ventilation rate is calculated by:
   Ventilation Rate in CFM = (0.01 x square feet of home) + (7.5 x (number of bedrooms+1))

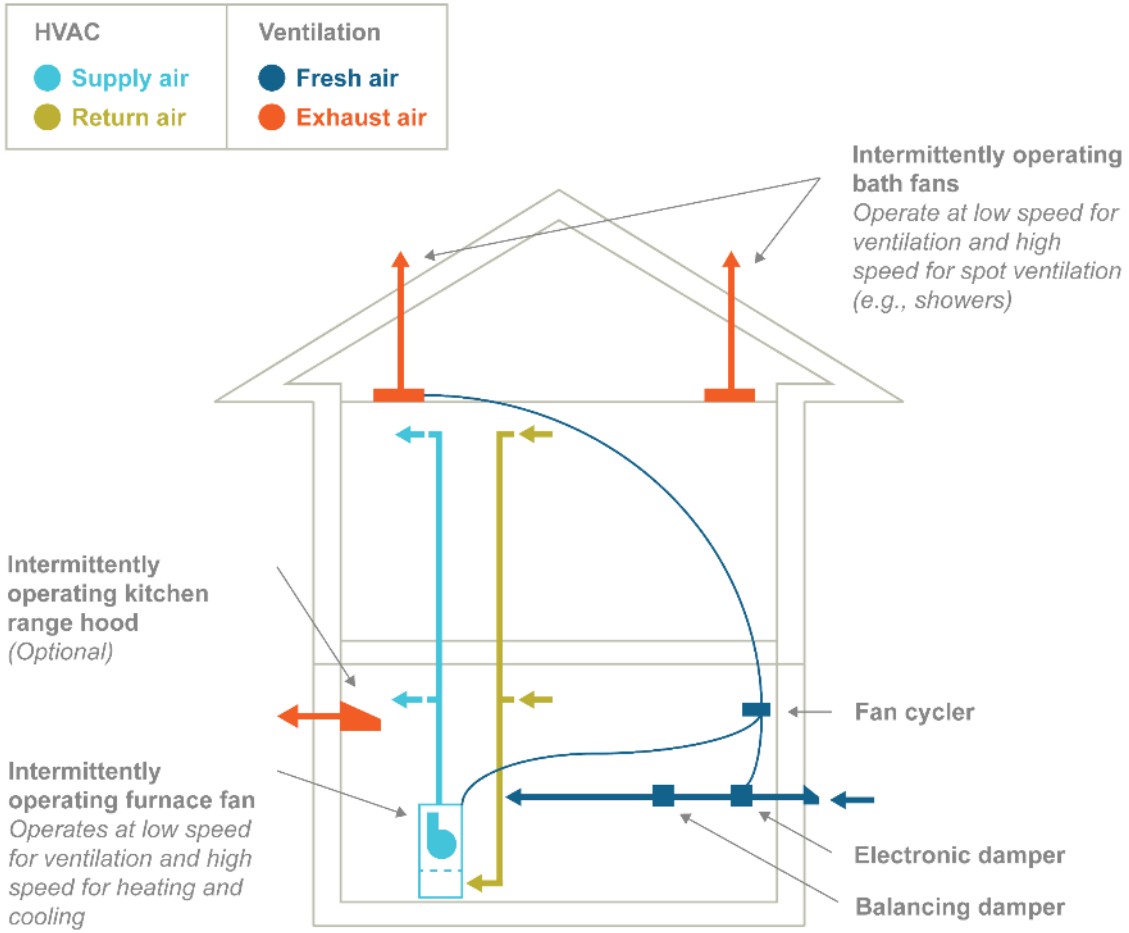
Traditional approach – Combine exhaust only with supply only



BALANCED VENTILATION

Installed costs are about $700 per unit

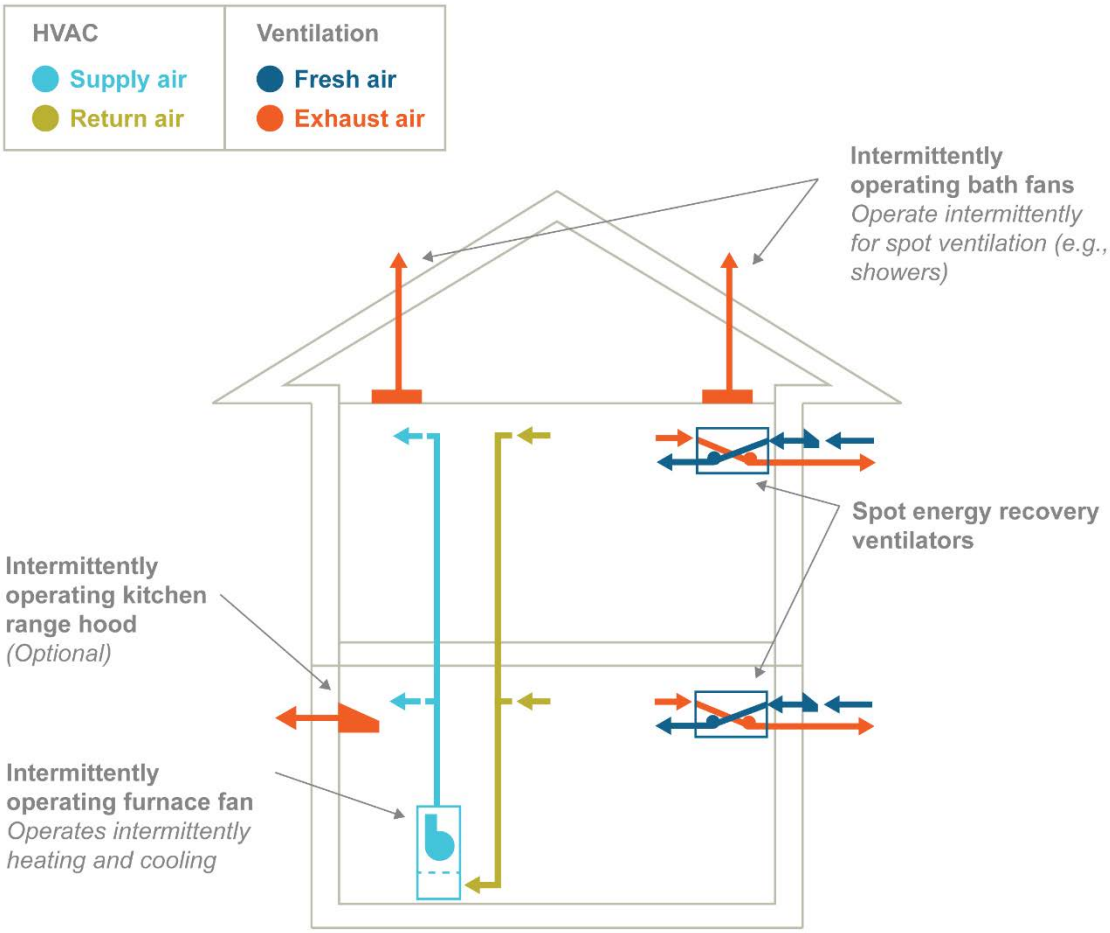
Traditional approach – Combine exhaust only with supply only (intermittent design)



BALANCED VENTILATION

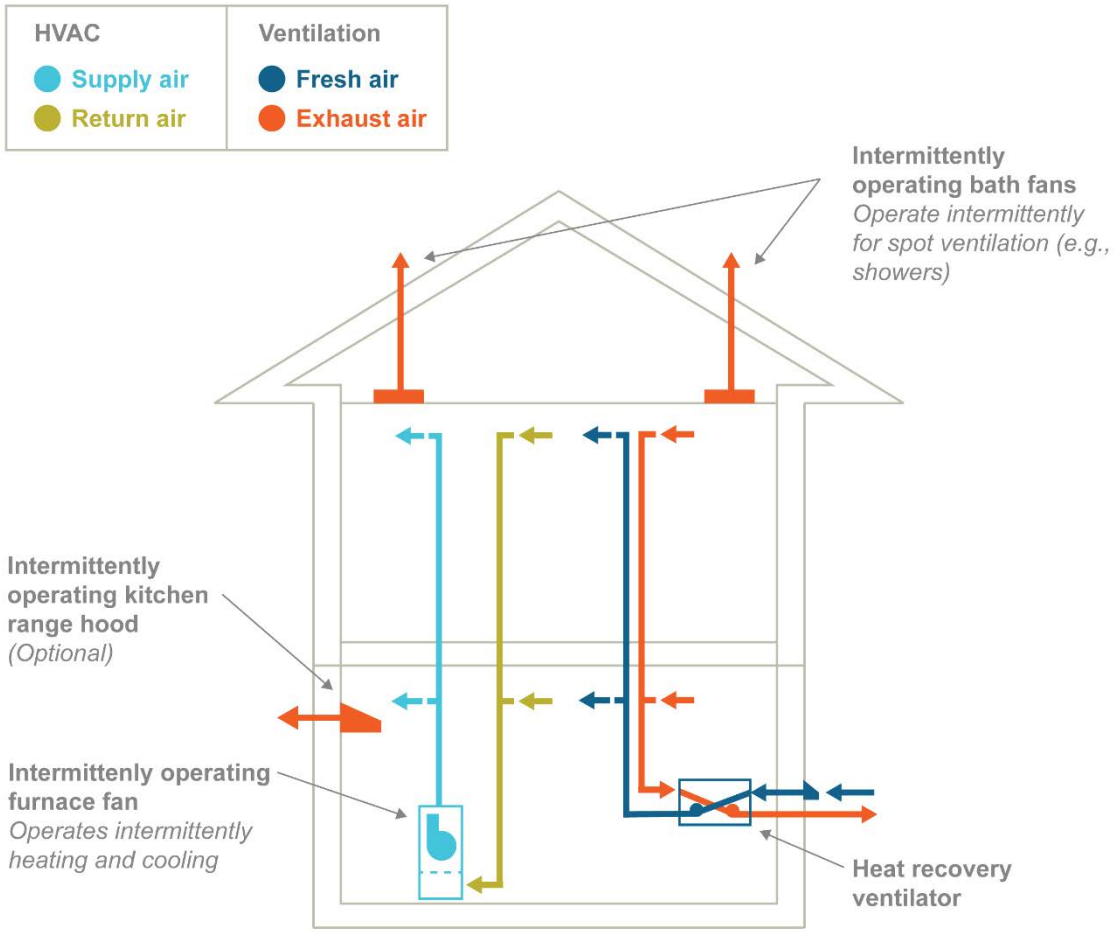
Installed costs are about $700 per unit

Spot energy recovery ventilators



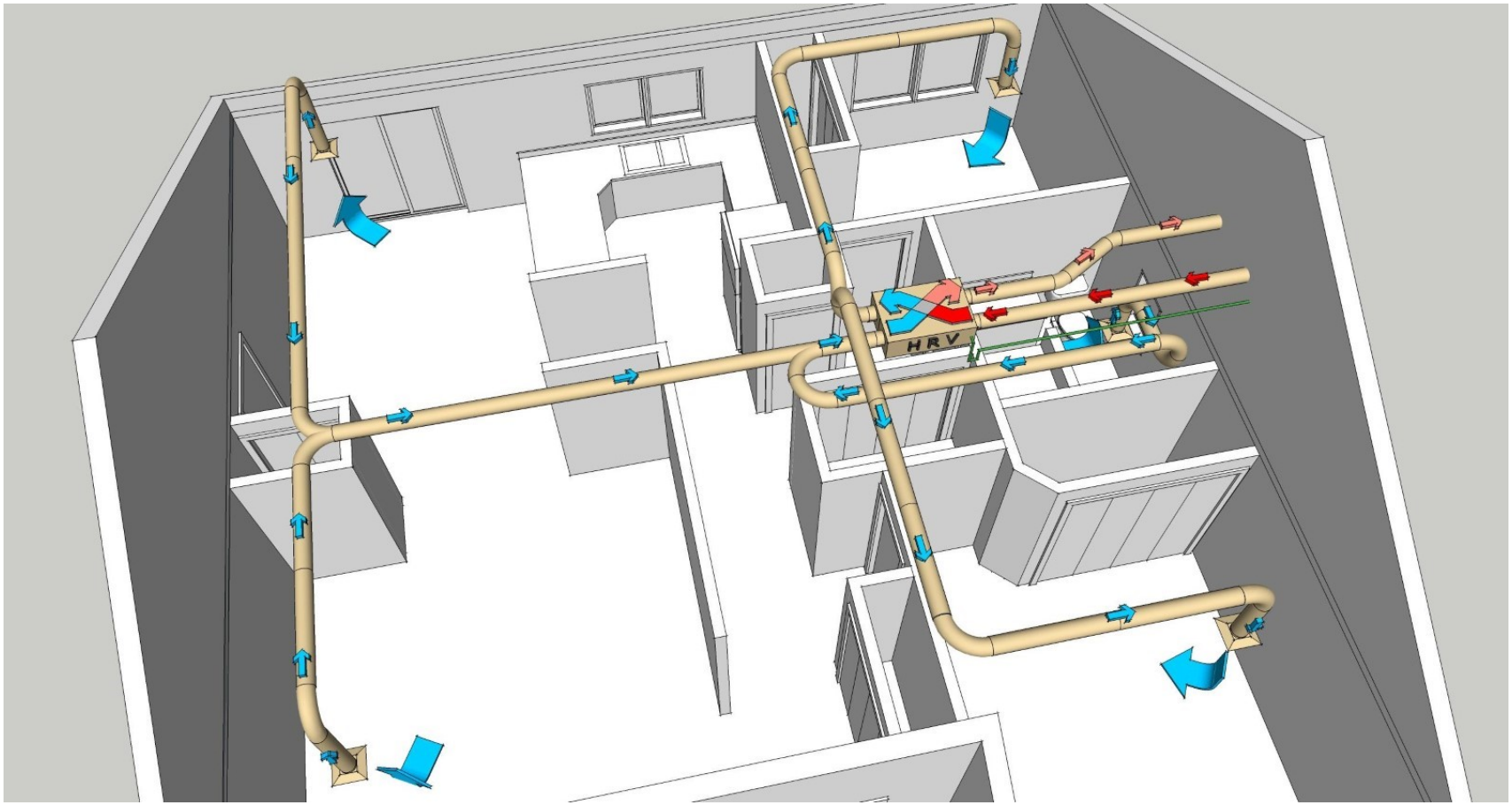
BALANCED VENTILATION

Balanced – Standalone HRV

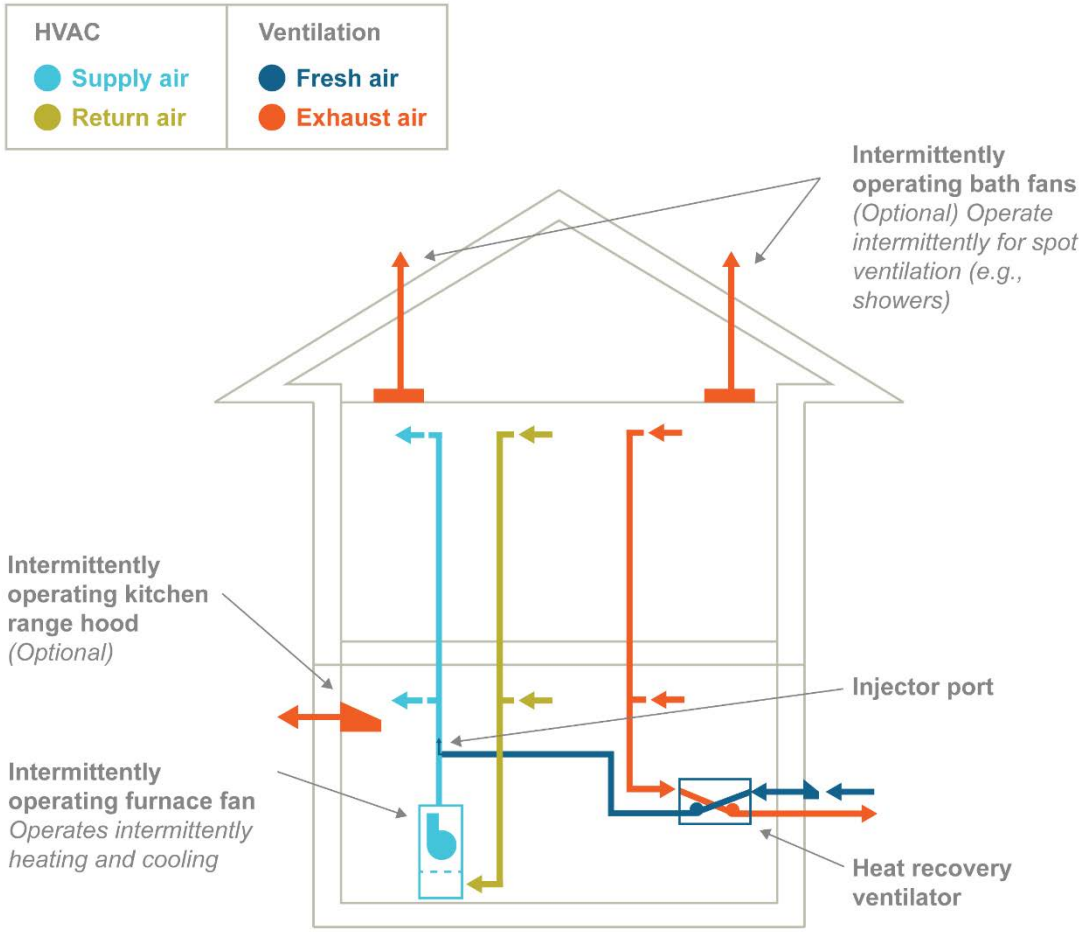


BALANCED VENTILATION

Balanced: Stand-alone HRV

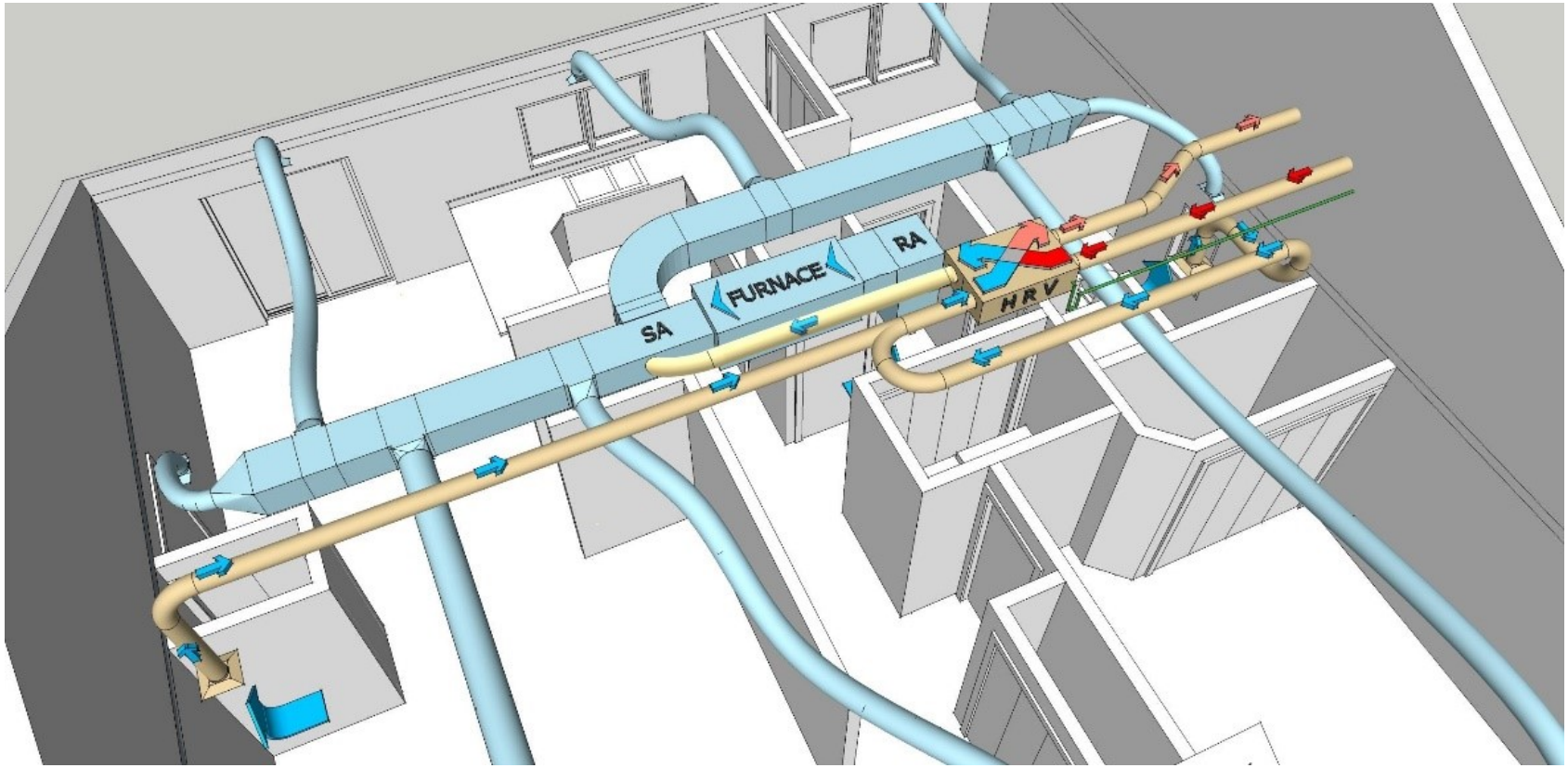


Balanced – Integrated heat recovery ventilator



BALANCED VENTILATION

Balanced: Integrated heat recovery ventilator



Q & A

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