Checklist: Ventilation System

Ventilation system:

- O Controllability: At least 3 **operation modes** (‘boost’ +30%, standard, basic -30%)?
- O Are **all rooms ventilated**, either by means of SUP, ETA or transfer air (also utility rooms, mechanical room itself etc.)?
- O Excessively low relative indoor air humidity (< 30%)? Countermeasures taken?
- O Sound level?
- O Draughts?

Ventilation unit:

- O **Accessibility for maintenance** checked?: Filters, condensate pan and drain, heat exchanger, summer bypass
- O **Structure-borne sound decoupling** of the ventilation unit?
- O Are **silencers planned** for SUP and ETA, possibly ODA and EHA?
- O **Condensate drain with double siphon** connected to drain pipe (check slope and filling level of siphons)?
- O Is **frost protection temperature** for pre-heating set to the point considered in the energy balance calculation (PHPP)?
- O If subject to frost (**outside installation**): Condensate drain heated and insulated?
- O Intermitted operation: **Filter drying** before switching off fans possible?

Filters:

- O ODA filter (at least F7): correctly mounted (check fit and air flow direction)?
- O ETA filter (F7/F8): correctly mounted (check fit and air flow direction)?
- O Do “pre-filter” and “grease filter“(kitchen) **correctly fit** in ETA?
- O **Accessibility** and **maintainability** of the filters possible?

Outdoor air (ODA) and Exhaust air (EHA):

- O **ODA intake:** Clean air (at least 3 m above ground, air pollution, odour sources)?; Protected from manipulation, rain, snow?
- O **Avoid „short-circuiting“** between EHA and ODA (odours, direction of flow, distance)
- O Don’t direct **EHA outlets** at building assemblies (risk of condensation).
- O **Outside wall penetrations:** vapour tight? Thermally insulated? Connected to the airtight layer?
- O **Unit within thermal envelope**: ODA and EHA ducts insulated up to the insulation layer of the thermal envelope with at least 50 mm, thermal bridge free and vapour tight? Short duct length?
- O **Unit outside thermal envelope**: SUP and ETA ducts insulated up to the thermal envelope with at least 50 mm and thermal bridge free? Short duct length?
- O ODA and EHA valves **accessible for cleaning and inspection**?
- O Intermitted operation**:** Airtight ODA and EHA valves installed?
- O ODA and EHA air volume flow calibrated and imbalance lower than 10%?
  Information to be filled in the commissioning report

Supply air (SUP) and extract (ETA) air ducts:

- O **Structure-borne sound decoupling** of the ventilation ducts?
- O Are **supply air heating ducts** sufficiently insulated?
- O Are **supply air cooling ducts** sufficiently insulated and vapour tight?
- O Do the ventilation ducts have a smooth interior surface?
- O Duct system with minimal pressure loss? Duct crossing avoided?
- O Are SUP and ETA ducts equipped with **cross-talk silencers**?

Supply (SUP), extract (ETA) and transfer air valves:

- O SUP and ETA air volume flows are **adjusted as planned** for each room?
  Information to be filled in the commissioning report.

- O Are the SUP and ETA valves and their **adjustment documented**? *Information to be filled in the commissioning report.*
- O **Jet nozzles** mounted approx. 15 cm below ceiling (from the middle of the jet)?
- O Are the **openings for air transfer planned** in all designated rooms (e.g. 1.5 cm door gap) (pressure loss of max. 1 Pa, check by measuring the air flow velocity (< 1m/s))? *Information to be filled in the commissioning report.*

Additional components:

- O **Kitchen hood planned with recirculation air**?
- O **Kitchen hood planned with exhaust to outside?** Additional supply air flow available? Not recommended for Passive Houses!
- O Safety equipment checked for **combined operation with a wood stove** (if applicable)?
- O **Supply air heating coil** tested (max. supply air temperature 52 °C, avoid dust smouldering).
- O Room temperature adjustable independently from SUP air flow rate?

Fire protection:

- O Fire and smoke safety dampers clean and operation checked?

Inspection of the subsoil heat exchanger:

- O Check ductwork for leaks (pressure test).
- O Check duct system for sloping (no unwanted basins)?
- O Drainage (condensate) by means of a double siphon.
- O Ensure accessibility (cleaning).