1. In terms of simulating emerging building technologies with VCWG, which way is feasible (better)?
   * Refactor **BuildingEnergy.py** or Building Energy Model (BEM).
   * **Co-simulate** with **E+\_Python\_API** or E+.
2. The challenges faced if we want to simulate the emerging building technologies.
   * Indoor living walls (evapotranspiration model)
   * Other non-traditional devices (passive cooling beams)
3. If simulate those emerging building technologies is feasible,
   * What are the recommended **validation** procedures?
   * Are the following field measurements enough?
     + Basel, Switzerland, in 2002, and Vancouver, Canada, in 2008.
4. Recommended parameterization (degree of freedoms) for emerging building technologies (indoor or outdoor)
   * More detailed sensible/latent heat exchange calculations?
   * Building materials properties?
5. Recommended metrics for evaluating emerging building technologies with VCWG
   * Temporal variation of building performance metrics such as indoor air temperature and specific humidity, sensible cooling/heating loads, humidification/dehumidification loads, and additional variables?
   * (Vertical variation of potential temperature, wind speed, specific humidity, and turbulence kinetic energy in the outdoor environment, temperatures on the indoor and outdoor surfaces?)

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Model | Features | Code |
| 2015 | UWG | Single layer urban canopy model | Code upon request |
| Feb 2021 | VCWG v1.3.2 | Urban microclimate (built-up environment in the micro urban setting, and their interactions) | Code available |
| July 2021 | VCWG v1.4.4 | Renewable energy sources for a residential building case study. (Building Energy Model written in python is highly **customizable**.) | Code available |
| Sep 2021 | VCWG v2.0.0 | Inclusion of advanced hydrology model; **Higher** prediction performance than v1.3.2 | Code upon request |