Space Boundaries from BIM

current state in commercial software

liNear®

About us

- We develop calculation software for…
  - heating load, cooling load, overall energy efficiency …
    [many other HVAC-related things not relevant here]
  - different (inter-)national standards
    (EN 12831, SP60, ASHRAE, VDI 2078, …)

Building **Heating**

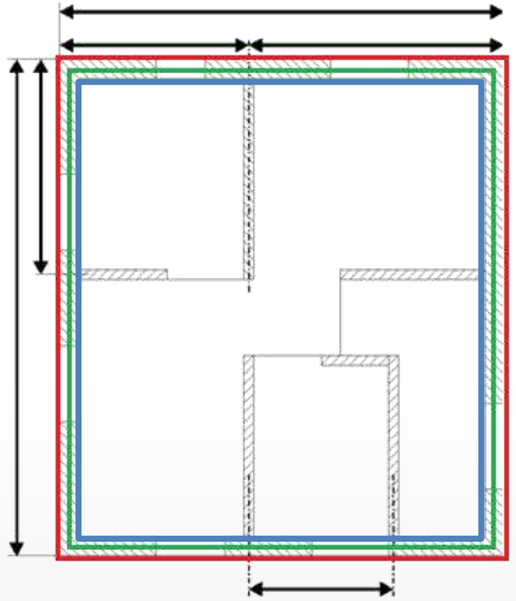
Building **Cooling**

Building **Cooling Dynamic**

Building **Ventilation**

Building **EnEV**

Building **Task**

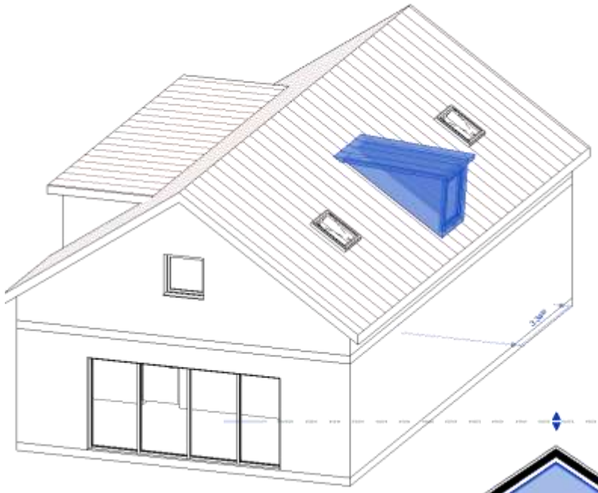


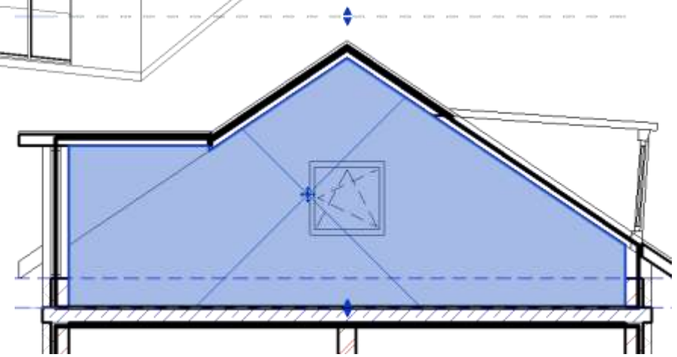
Center-axis
EN 12831 (DE)
SP60 (RU)

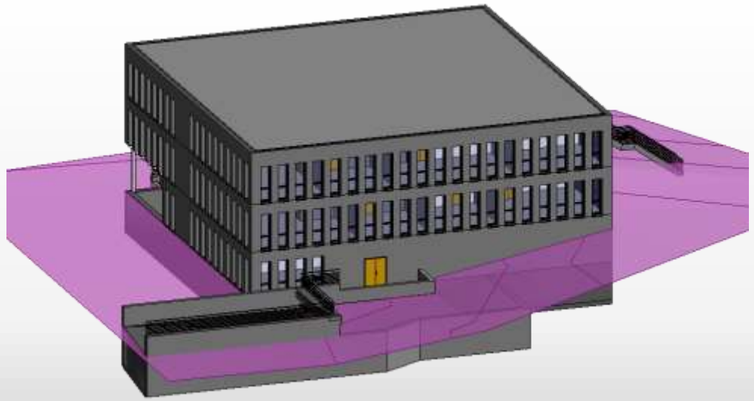
- different standards + different countries
  = different ideas of balance volumes

The average users…

- Do not care too much about modeling guidelines that are driven by software limitations or academic requirements.
- Frequently use things that standard export routines may have trouble with, e.g.
  - sandwich-layered walls / floors
  - room-bounding columns
  - dormer window families
  - topographic maps
- Want **fast, robust and accurate** results for the building geometry/topology, according to their (local) normative requirements.

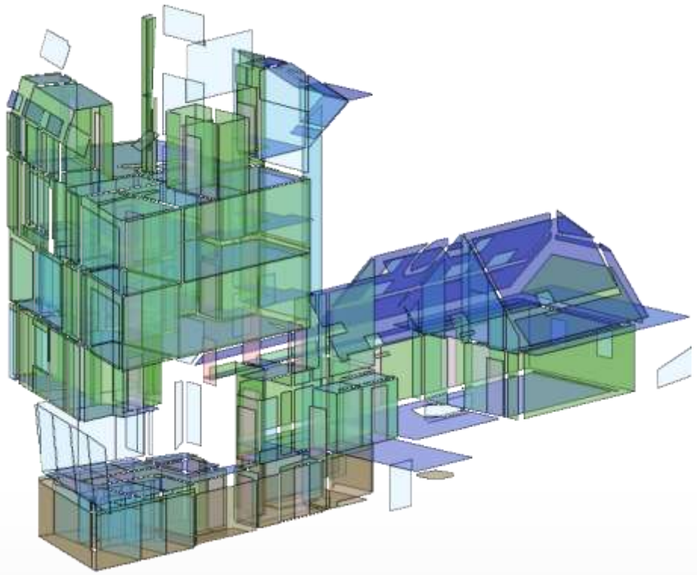






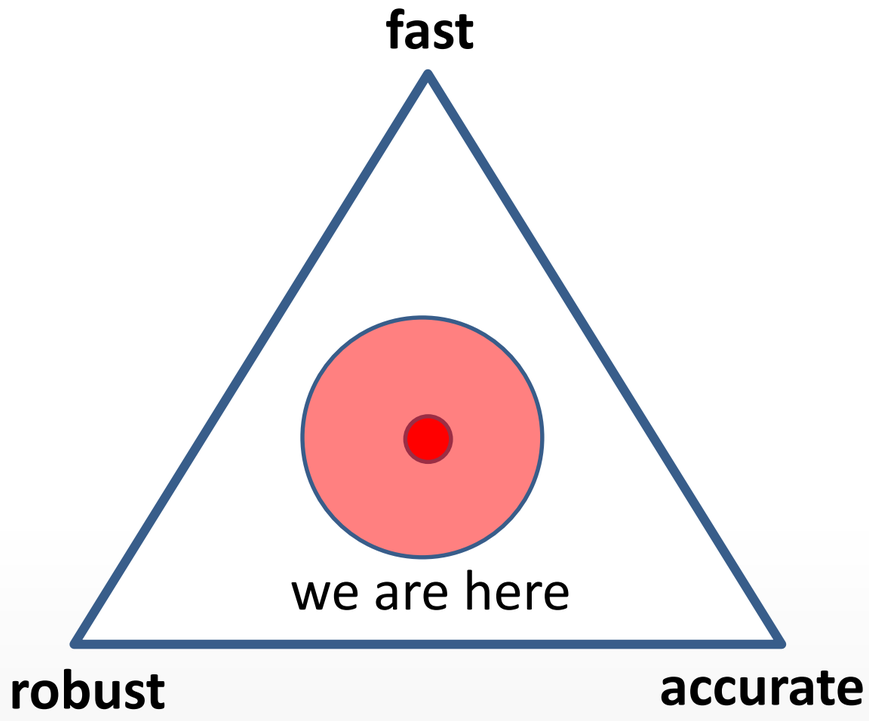
State of the art

- Most commercial solutions have either
  - Interfaces to **open standards** (gbXML, IFC, …)
  - or **direct CAD integration** + own analysis
    (or combinations of the above)
- Open formats promise flexibility and sustainability
  - As of today, they are certainly convenient for lazy software vendors, because a large part of the responsibility is shifted to the exporting CAD platform (“if they only would, we could”)
- Open workflows are **no one-click solutions**
  - Large number of export options that can affect results
  - Defaults are often not optimally preconfigured
  - If bugs occur, the time-window for fixes is often months/years



Typical gbXML transformation of a carefully prepared building model (with default export options)

Fast, accurate and robust?



Re-{think, write, evaluate}