

ENERGY ADE

COMPATIBILITY ANALYSIS

Workshop Sophia Antipolis May 2015

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Stuttgart HFT

Outline

- Data Model Development
- Data Model Comparison

Building Energy Standards

Space Heating and Cooling Demand Calculation

DIN 18599-2



ISO 13790



VDI 6007

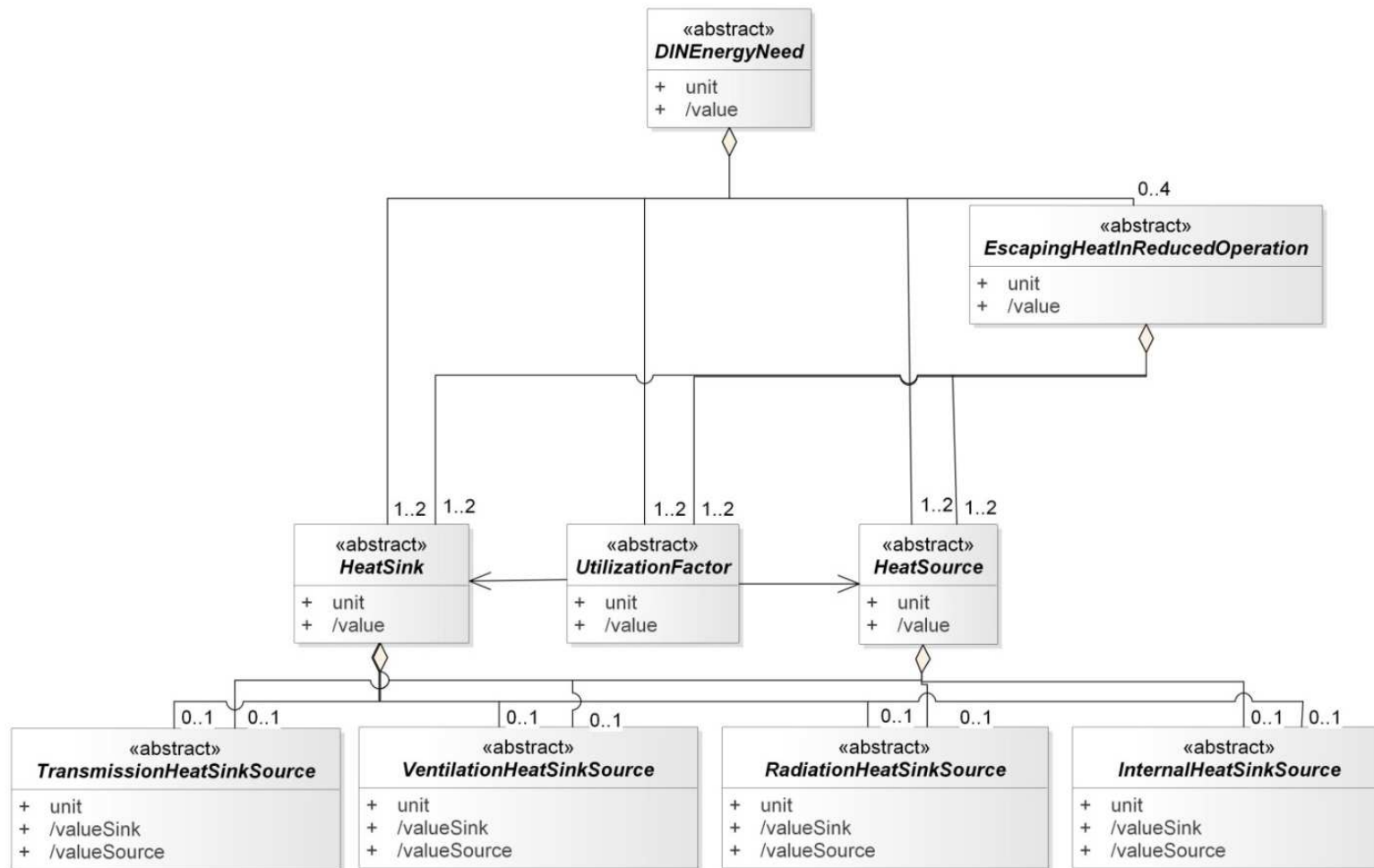


DATA MODEL DEVELOPMENT

Section 1

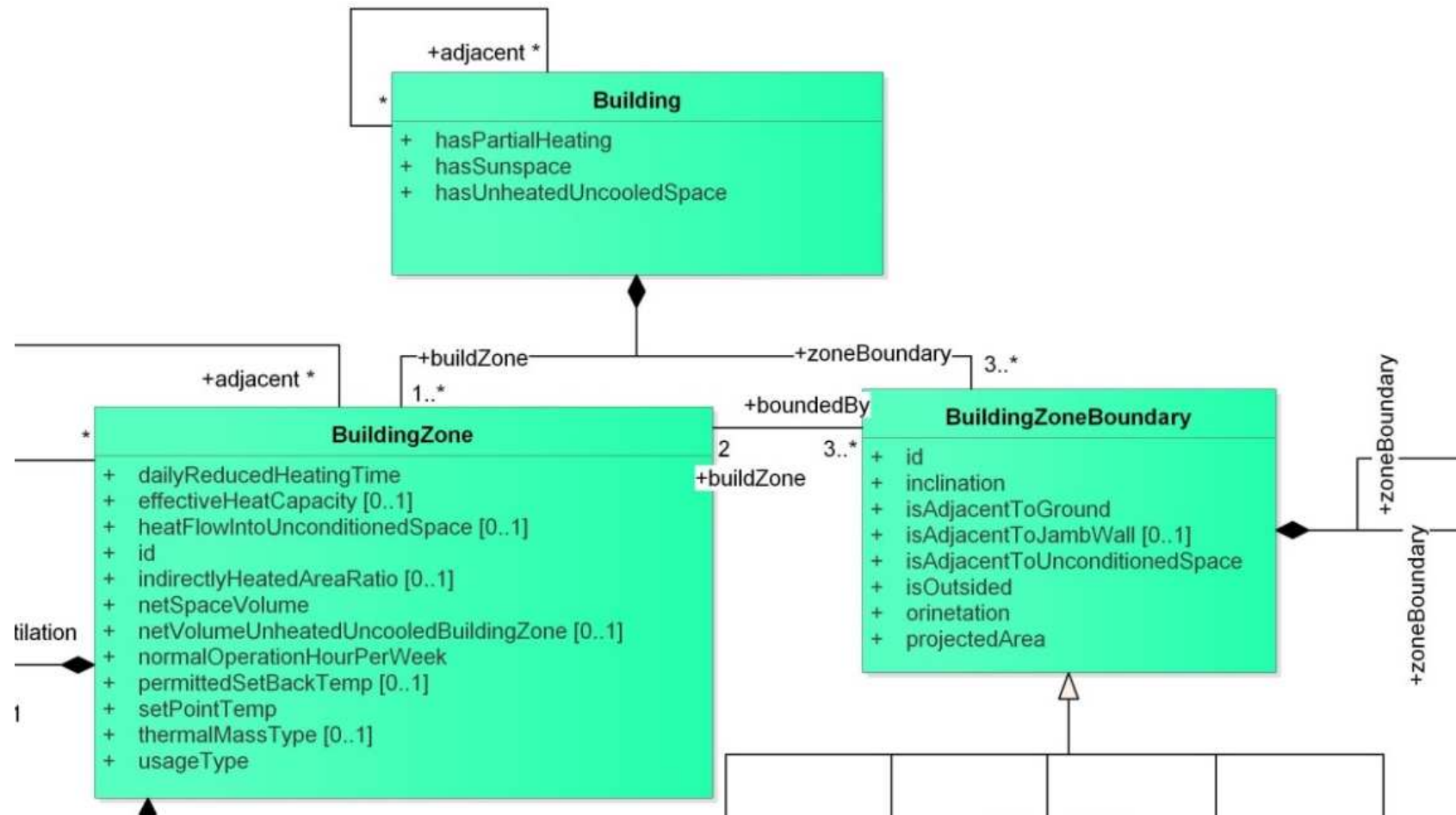
Energy Indicator (Energy Balance Concept)

DIN 18599-2



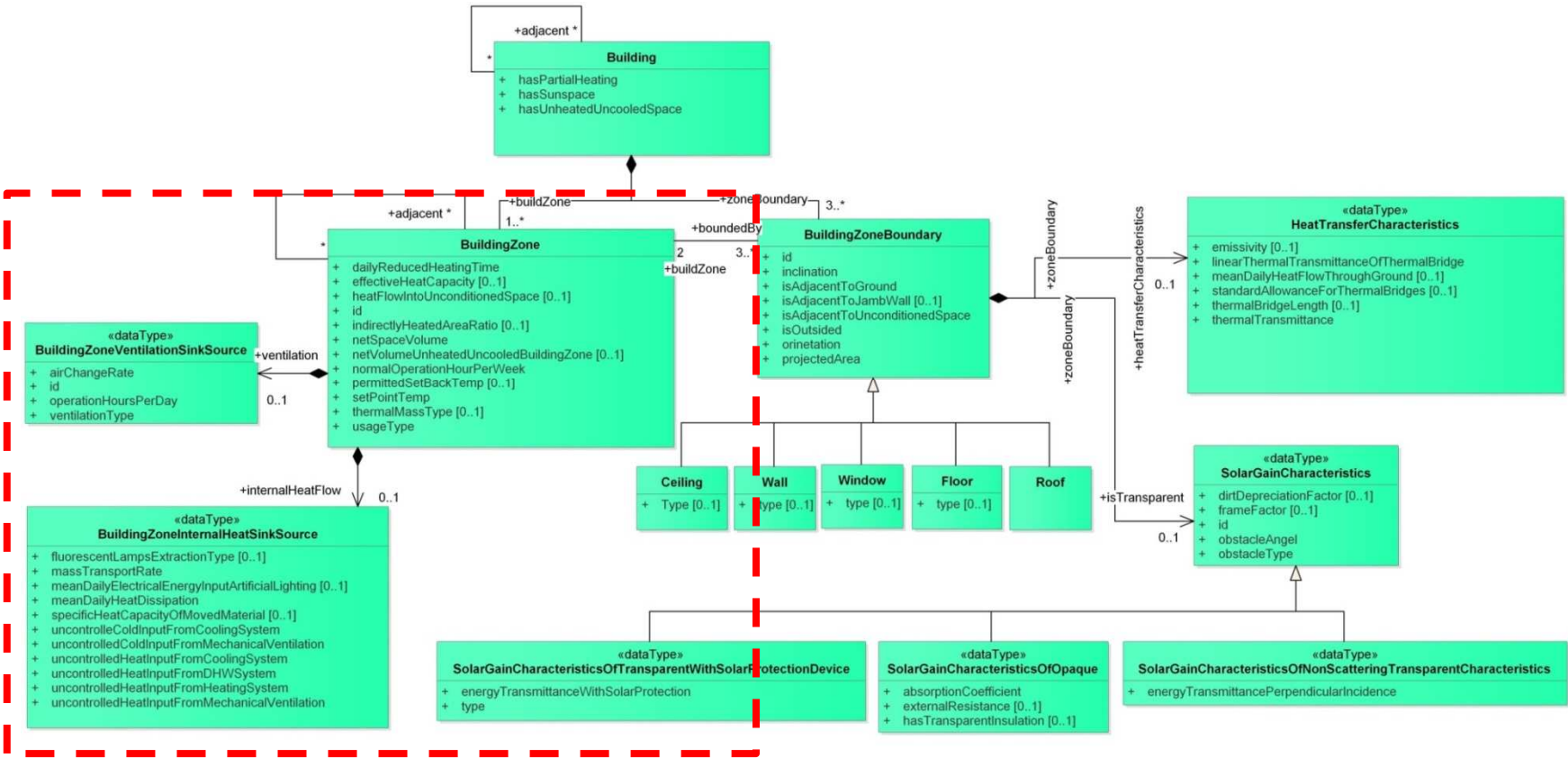
Reference Object Model

DIN 18599-2



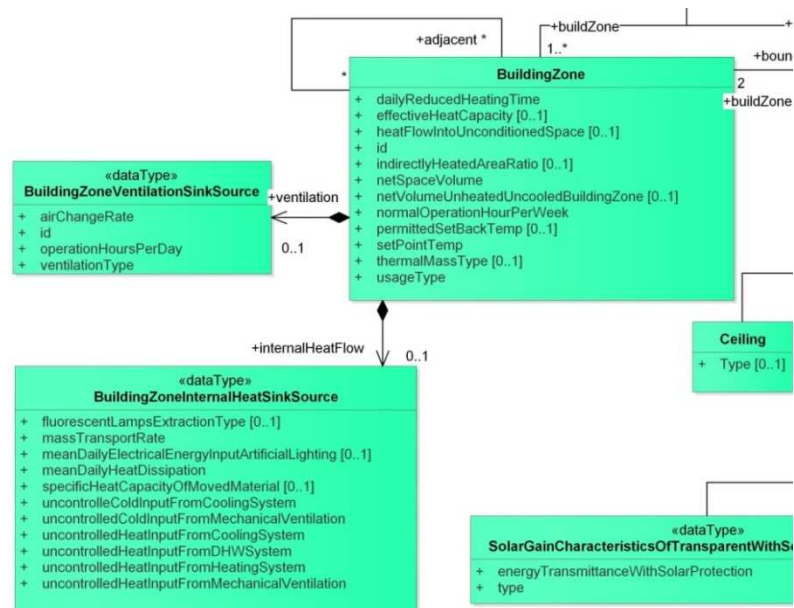
Reference Object Model

DIN 18599-2



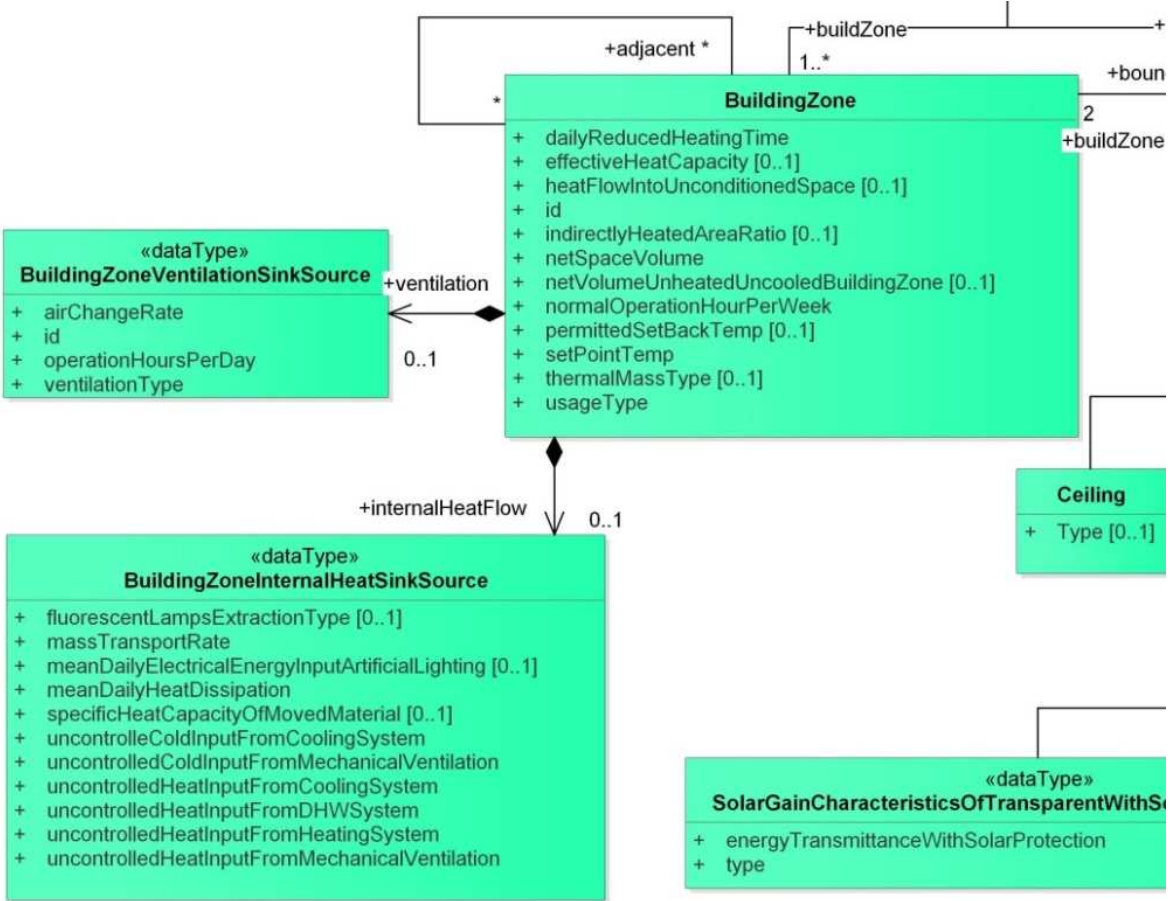
Reference Object Model

DIN 18599-2



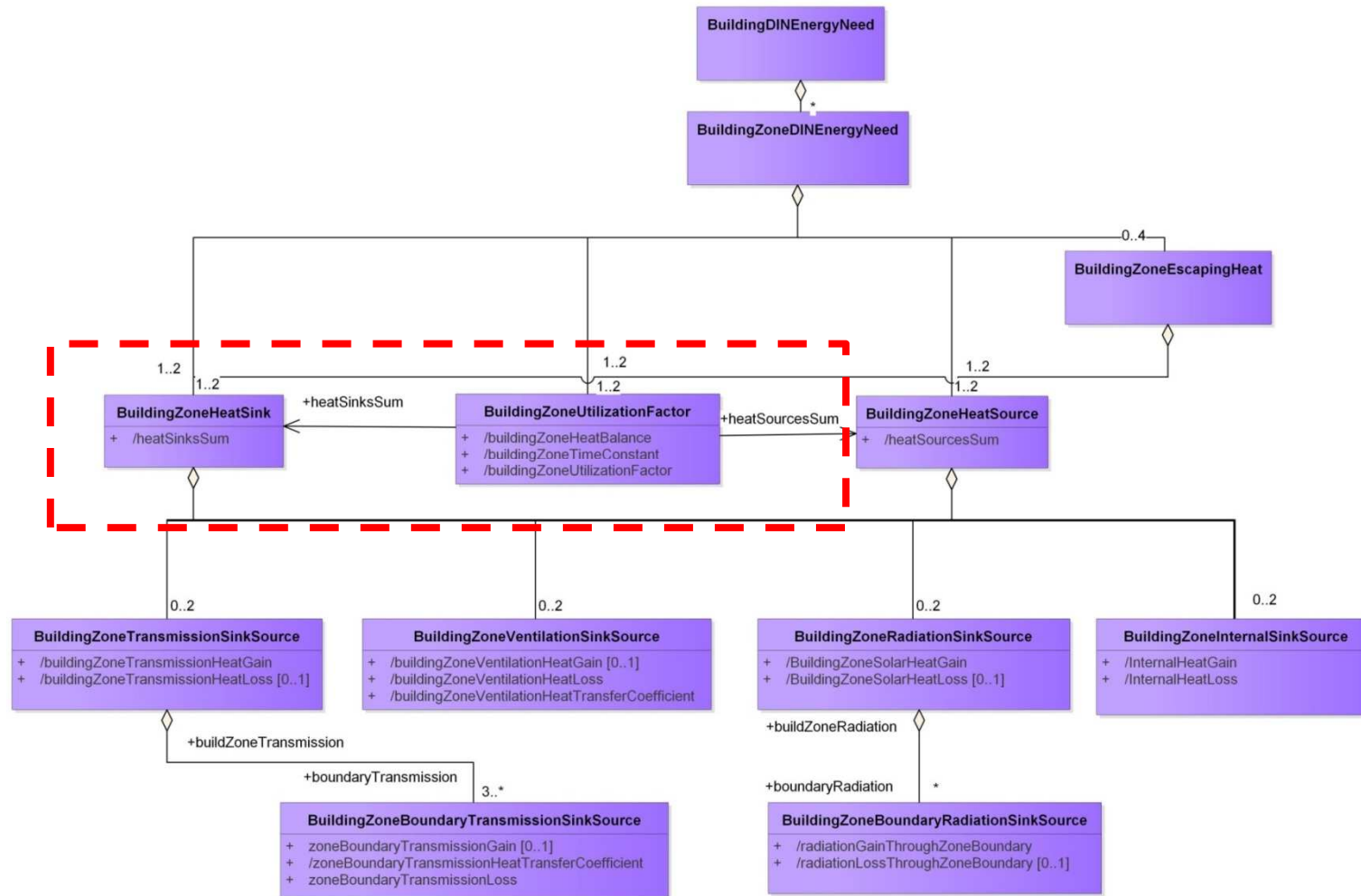
Reference Object Model

DIN 18599-2



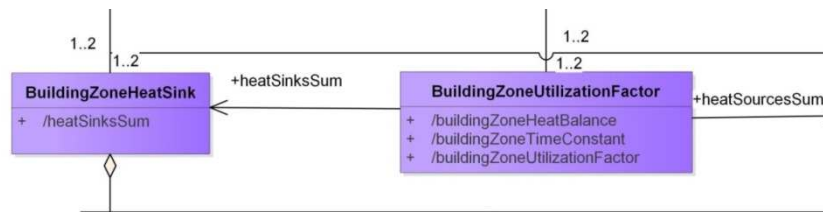
Object-related Model

DIN 18599-2



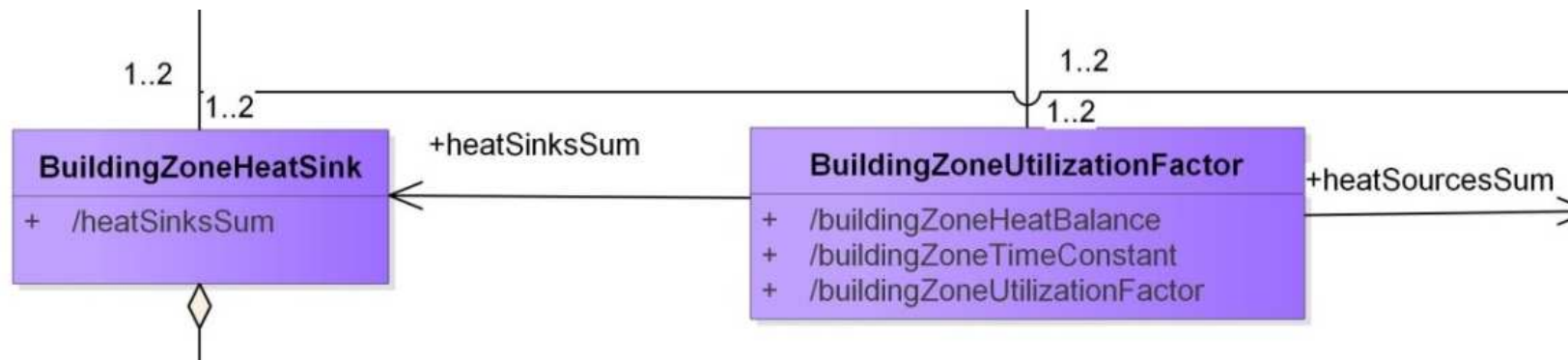
Object-related Model

DIN 18599-2



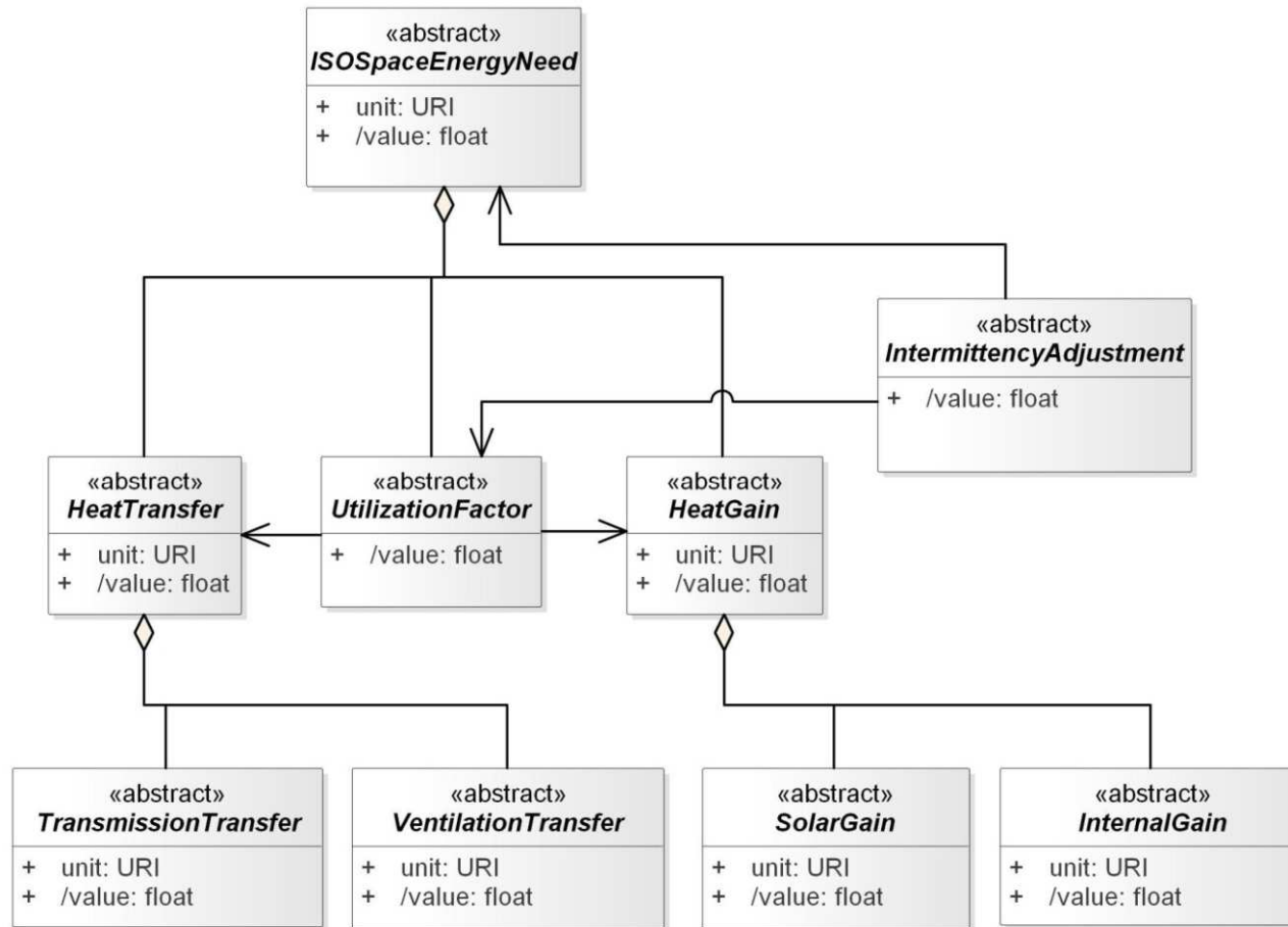
Object-related Model

DIN 18599-2



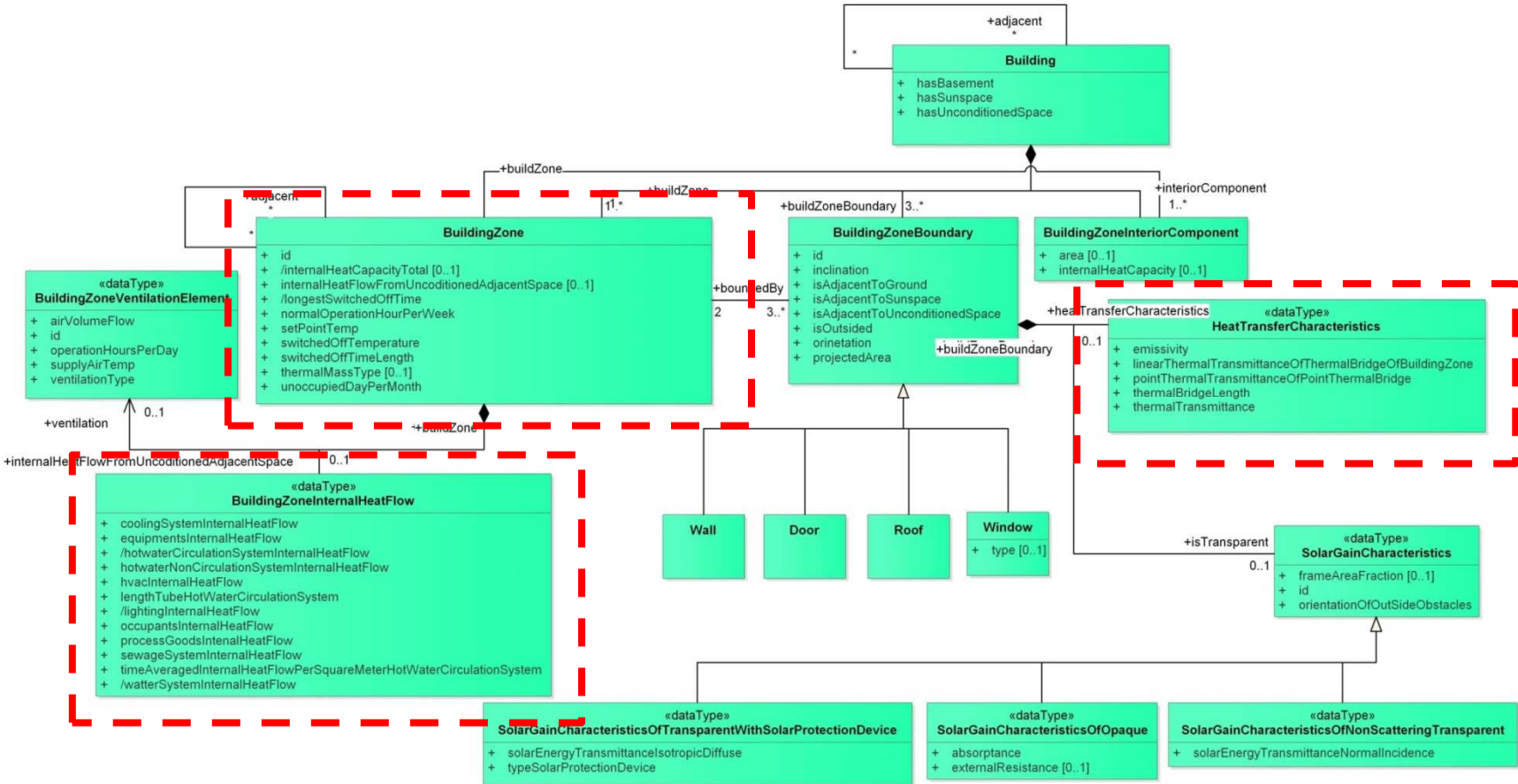
Energy Indicator (Energy Balance Concept)

ISO 13790



Reference Object Model

ISO 13790



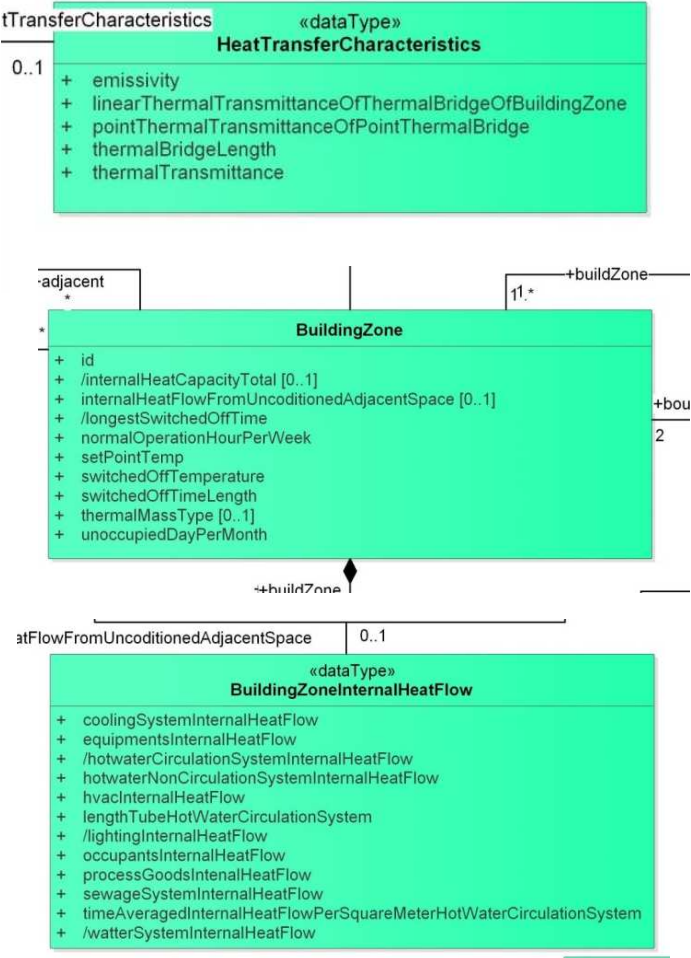
Reference Object Model

ISO 13790



Reference Object Model

ISO 13790



Point Thermal Transmittance

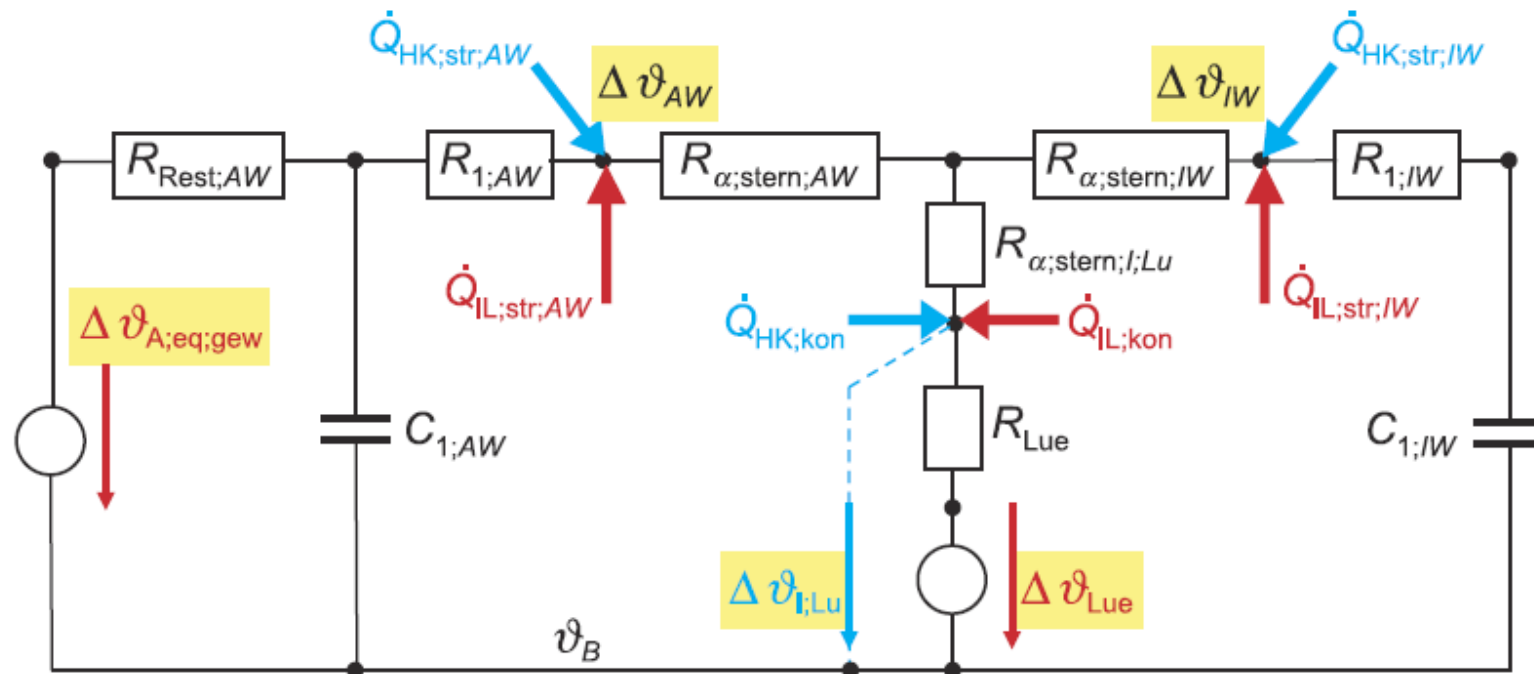
Internal heat flow from unconditioned adjacent space

Longest Switched-off time

Internal Heat Flow From Hot Water Circulation System

Zone's Thermal Response Model

VDI 6007

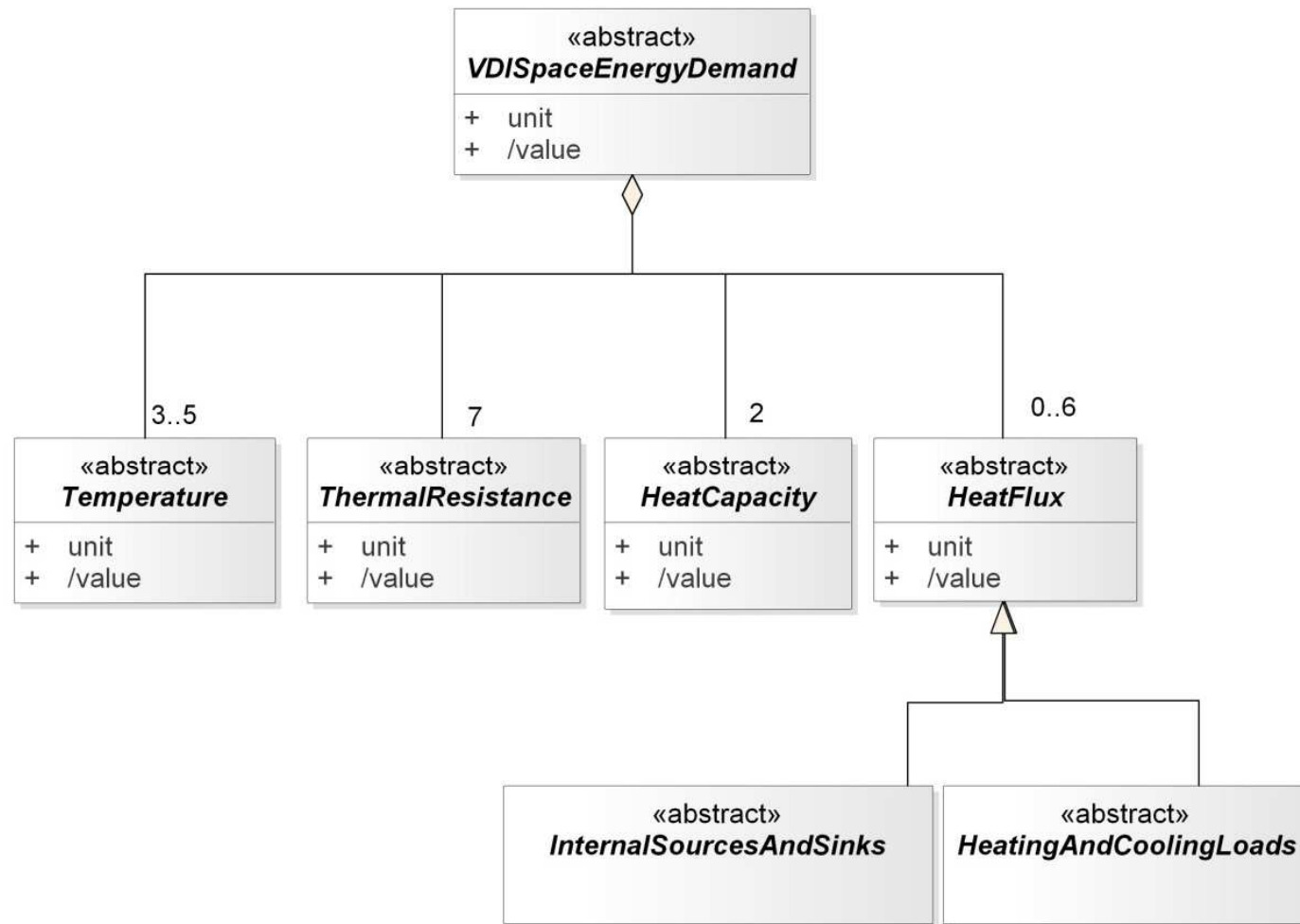


Source: VDI 6007

AW : External Walls
 str : Radiation
 Lue : Ventilation

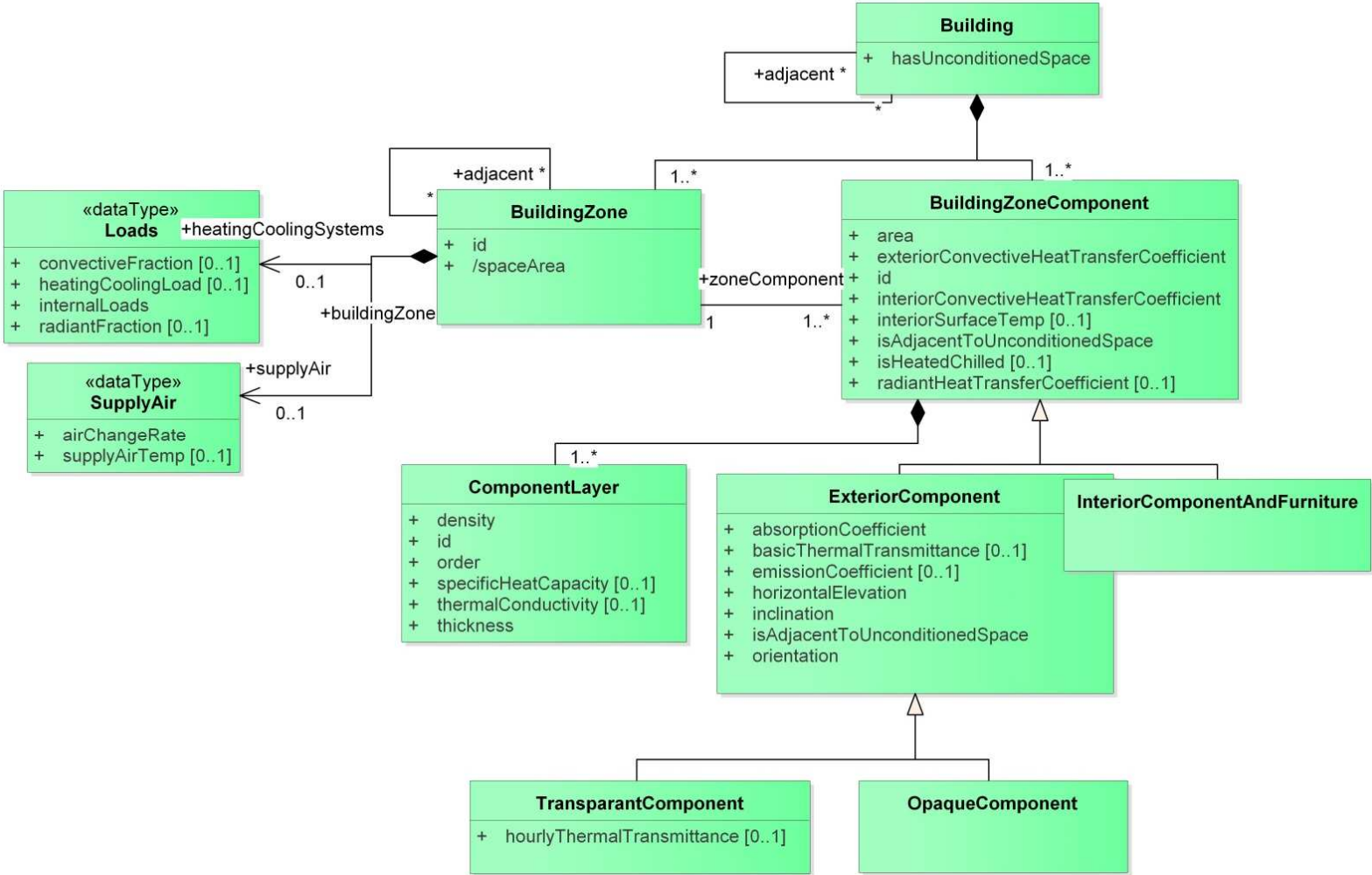
Energy Indicator

VDI 6007



Reference Object Model

VDI 6007



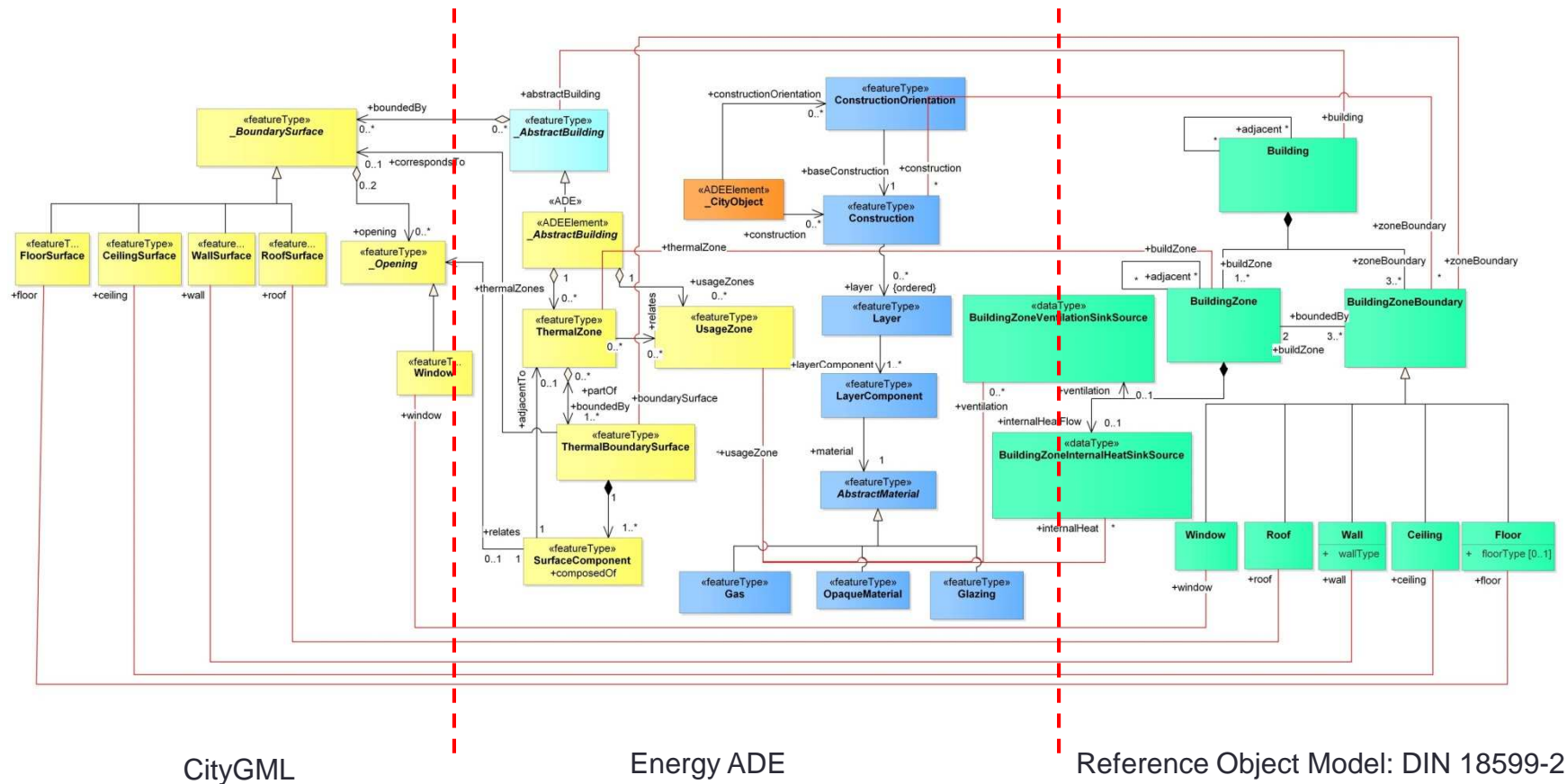
DATA MODEL COMPARISON

Section 2:

- Structure Coherence
- Attribute Coverage

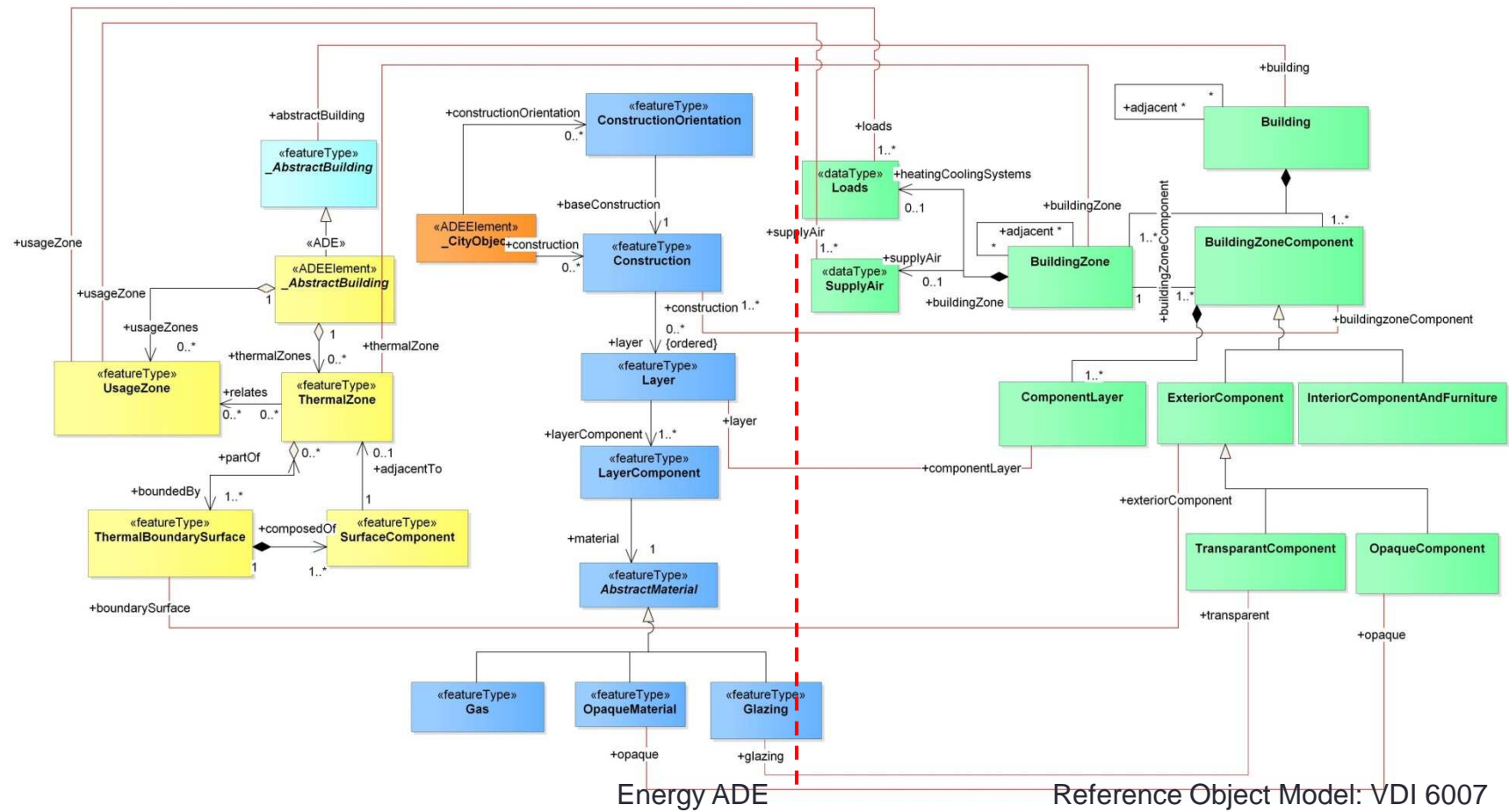
Structure Analysis

DIN and Energy ADE

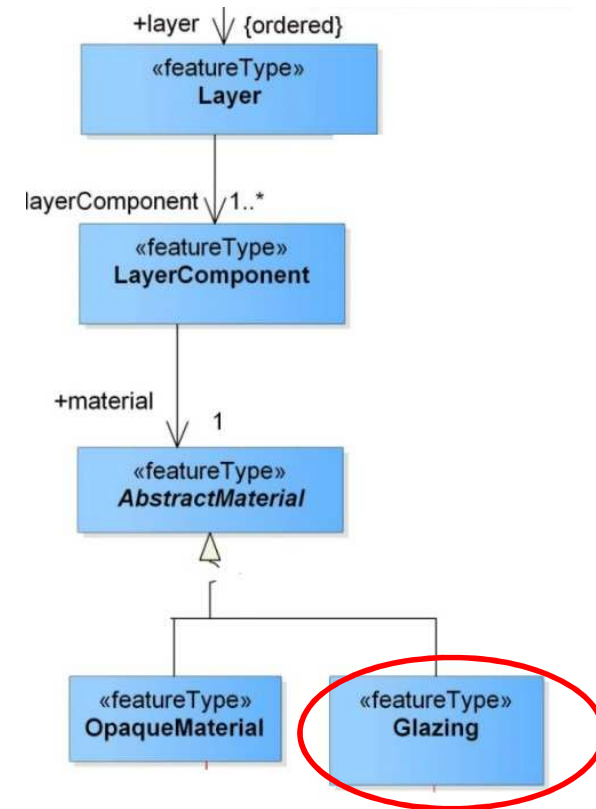
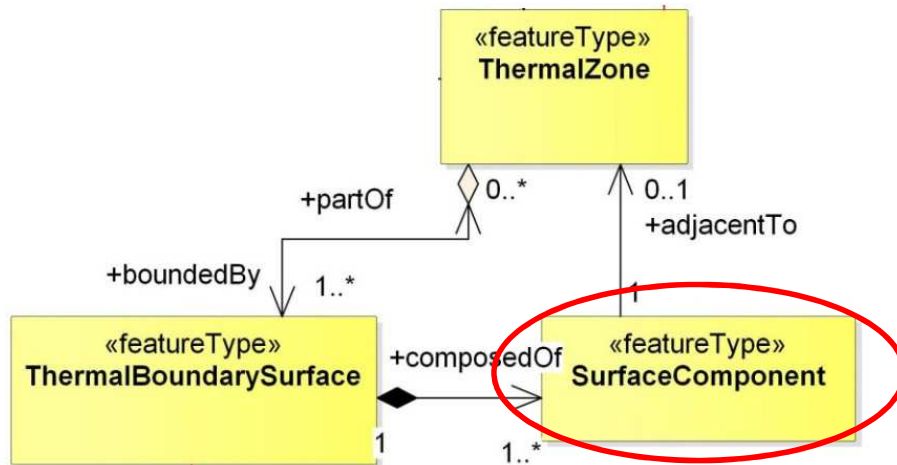


Structure Analysis

VDI and Energy ADE

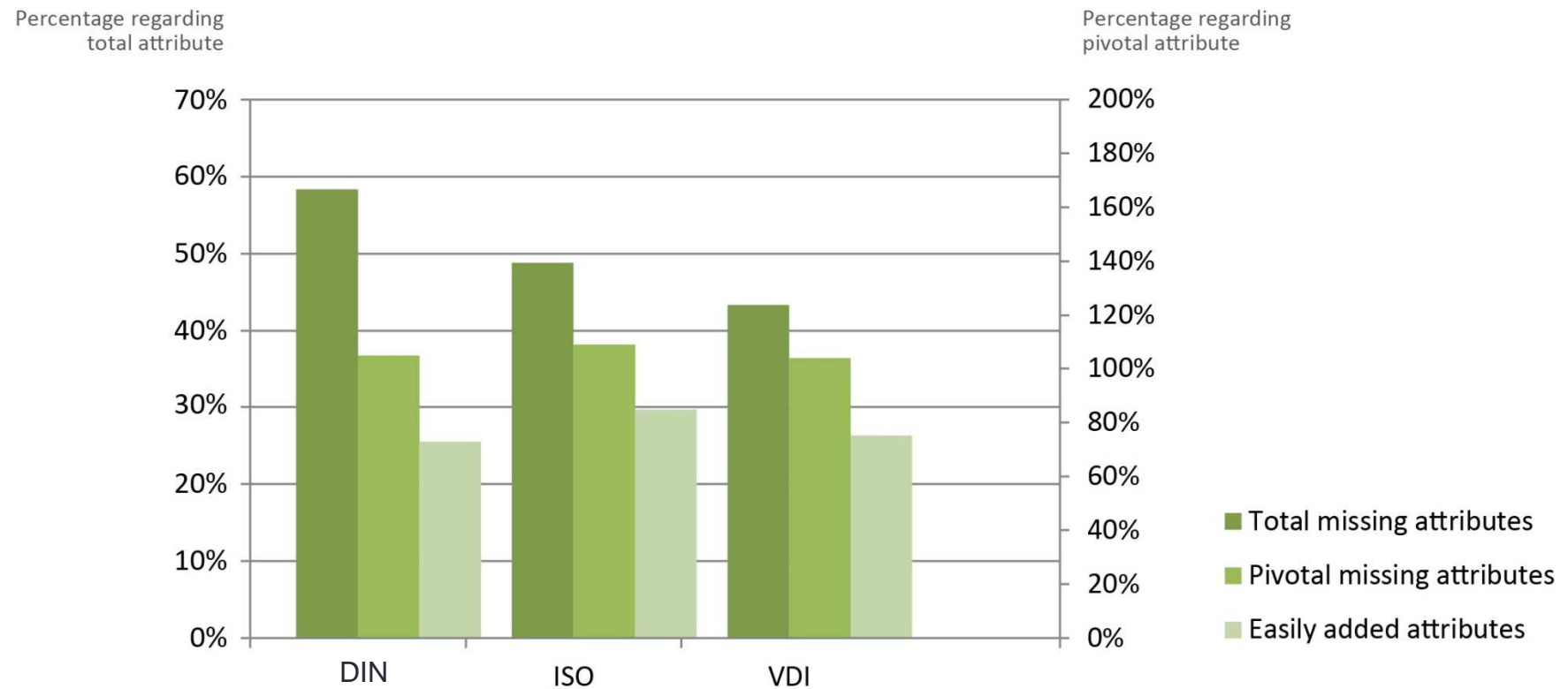


Structure Mismatches



Attribute Mismatches

ZM1



Source: Author

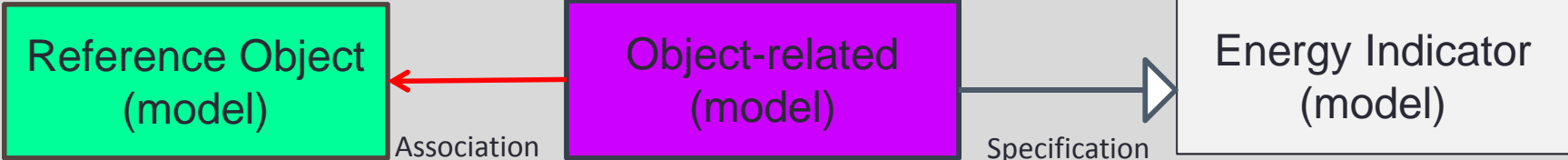
ZM1

like ventilation schedule has air change rate? supply air temp?

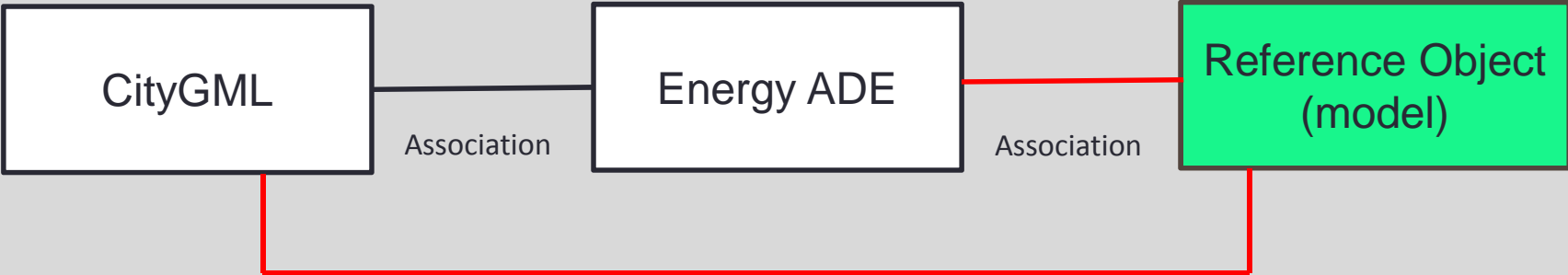
Zirak, Maryam, 5/5/2015

CONCLUSION

Data Model

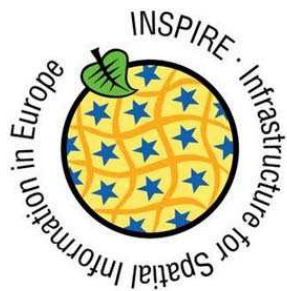


Energy ADE Compatibility Analysis



Extra Outcomes

- Building Data Model
- Building Energy Software



Thank you very much!

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