Space Boundary Tool

SBT

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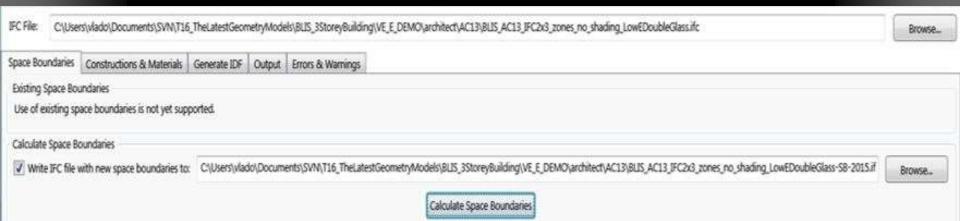### Stanford University

What Is SBT?

Space Boundary icon

- **A *precision tool* that semi-automatically transforms CAD building geometry defined in IFC2*x*3 format into format readable by EnergyPlus or other BEP simulation engines that are *compliant with IFC-based BIM***

- **Automatically *corrects errors in CAD* when objects (walls, slabs) *do not connect* with other objects they are supposed to**

- **Uses geometry library under *license* from *Geometry Factory* in France**

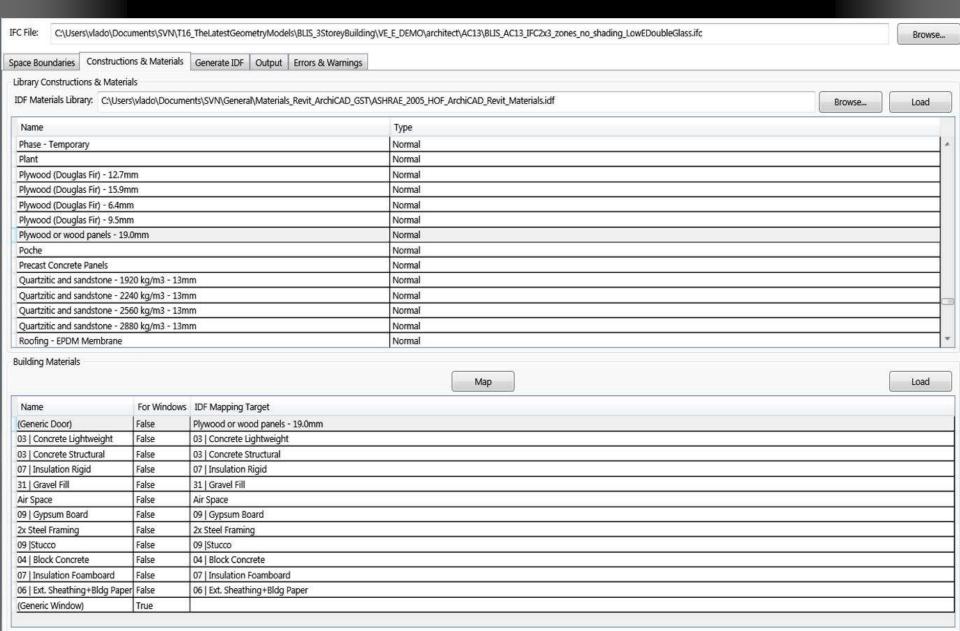- **Free executable *SBT version 1.5.7***

SBT versions not released

- Curved surfaces and volumes (requires special EnergyPlus 7.2c version, never released)
- Adjustable variable gaps: Defining size of intentional gaps between non-connecting objects

Space Boundary Tool (SBT)

SBT: Material Properties Mapping

SBT: IDF and BEPS Run Controls

IFC File: C:\Users\vlado\Documents\SVN\T16_TheLatestGeometryModels\BLIS_3StoreyBuilding\VE_E_DEMO\architect\AC13\BLIS_AC13_IFC2x3_zones_no_shading_LowEDoubleGlass.ifc   Browse...

| Space Boundaries | Constructions & Materials | Generate IDF | Output | Errors & Warnings |

Simulation control parameters

Building location: San Francisco

Time zone: 8

Solar distribution: FullExterior

Building terrain: Suburbs

Loads convergence tolerance: 0.04

Temperature convergence tolerance: 0.4

Start day: 1 / 1

End day: 12 / 31

Number of timesteps per hour: 6

Output IDF: :uments\SVN\T16_TheLatestGeometryModels\BLIS_3StoreyBuilding\VE_E_DEMO\architect\AC13\BLIS_AC13_IFC2x3_zones_no_shading_LowEDoubleGlass.idf   Browse...   V720   Generate IDF   View IDF

IFC Classification of SB Levels

SPACE BOUNDARY LEVEL\IFC TYPE	INTERIOR	EXTERIOR	VIRTUAL
First (1st) level	1	1	1
Second (2nd) level	2a	2a	2a
Third (3rd) level	2b	N/A	2b
Fourth (4th) level	incorporated in 2b	N/A	incorporated in 2b
Fifth (5th) level	incorporated in 2b	N/A	incorporated in 2b

Thank you!