

SMOG

Energy Simulation Software

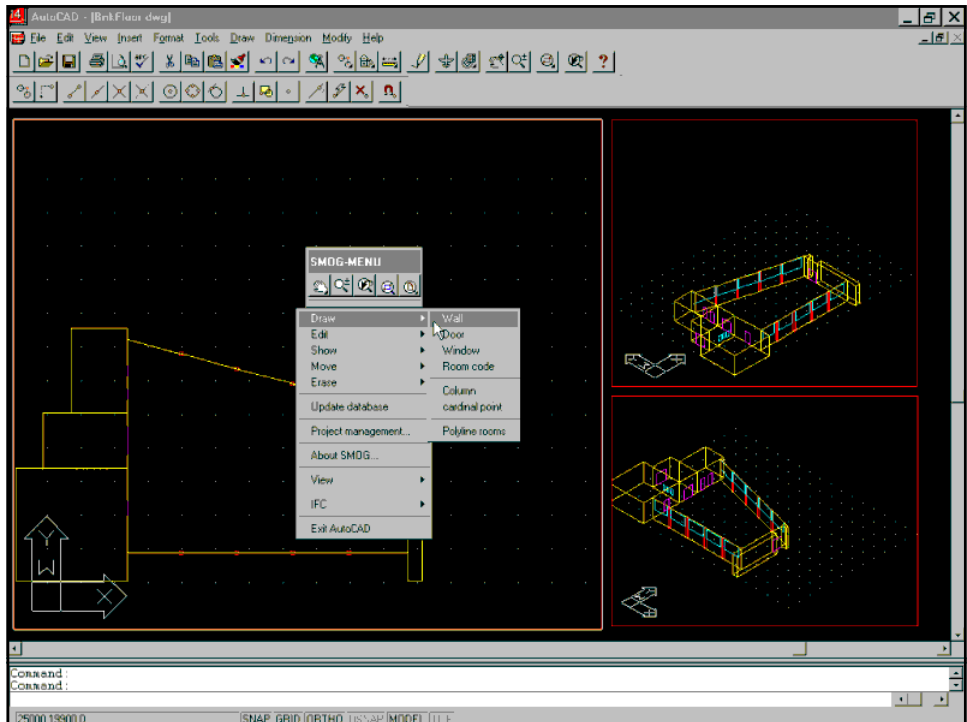
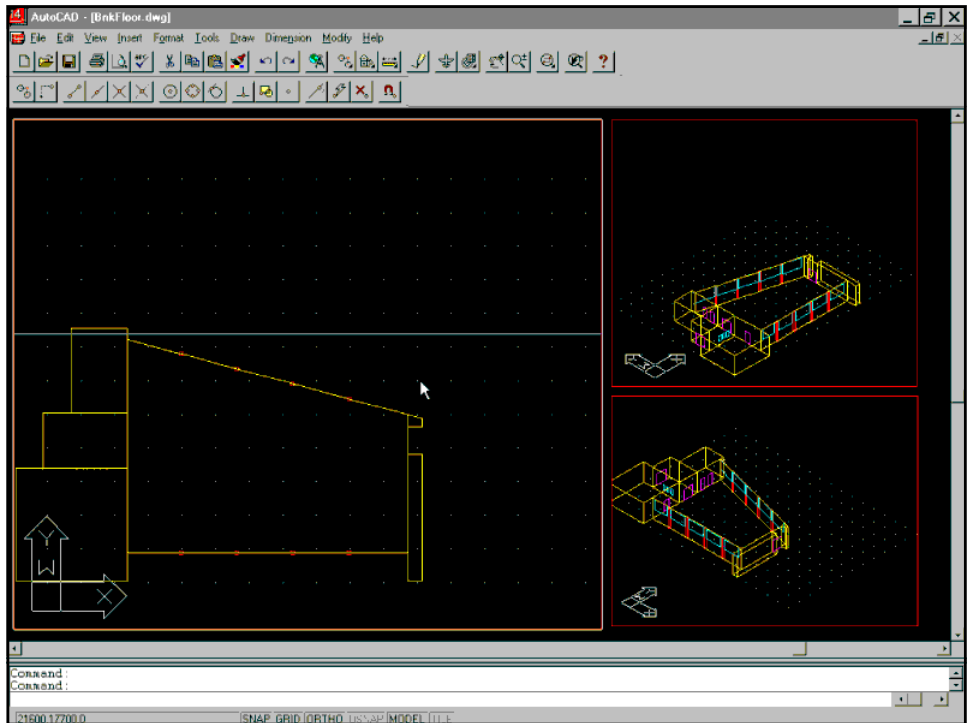


Insinööritoimisto
Olof Granlund Oy



Olof Granlund Engineering Oy

- Olof Granlund Engineering is the leading building services consulting firm in Finland
- The company is specialized in the:
 - HVAC, piping, electrical and building automation design
 - security and telecommunications systems design
 - technical facilities management (FM) services
 - and software development
- SMOG (Space Modeller of Olof Granlund)
 - originally an AutoCAD application for easy 3D modelling of the building for energy simulation
 - IFC has changed the scope; main focus is now on the use of IFC building objects through IFCin- and IFCout-functions
 - links to DOE simulation
 - demo participated Chicago AEC Systems Show, will be published in the end of the year



AutoCAD - [BnkFloor.dwg]

File Edit View Insert Format Tools Draw Dimension Modify Help

Room heatloss

Design outside temperature:
 Down floor type: ground floor
 Cond. through bottom floor: 5 W/m²
 Bottom floor U-value: 0.25 W/m²K

ROOM R4
 net-area: 245.8 m²
 volume: 984 m³
 air infiltration: 0.20 1/h
 Temperature: 21.0 °C

Code	Area	U-value	Temp.	Conduction
D1	3.9	0.92	12.0	32
D1	9.5	0.92	21.0	0
EXT1	82.8	0.40	21.0	0
EXT1	99.3	0.40	12.0	358
Floor	245.8	0.25	12.0	643
MS&P	67.6	1.17	12.0	712

Conduction: 2299 W
 air infiltration: 590 W
 Total heatloss: 2889 W

Return

Command:
 Command:
 Select room:
 R4400.3000.0

SNAP GRID ORTHO TSS&P MODEL TTE

RIUSKA <c:\aec\smallbank\smallbank.rsk>

Scale 1:300

Direction

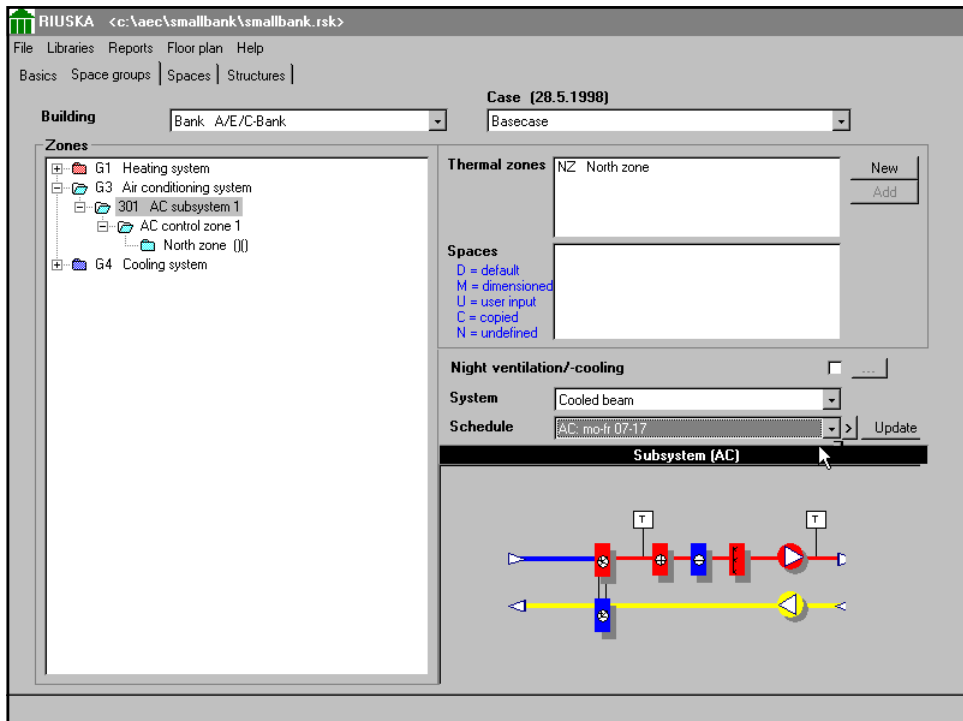
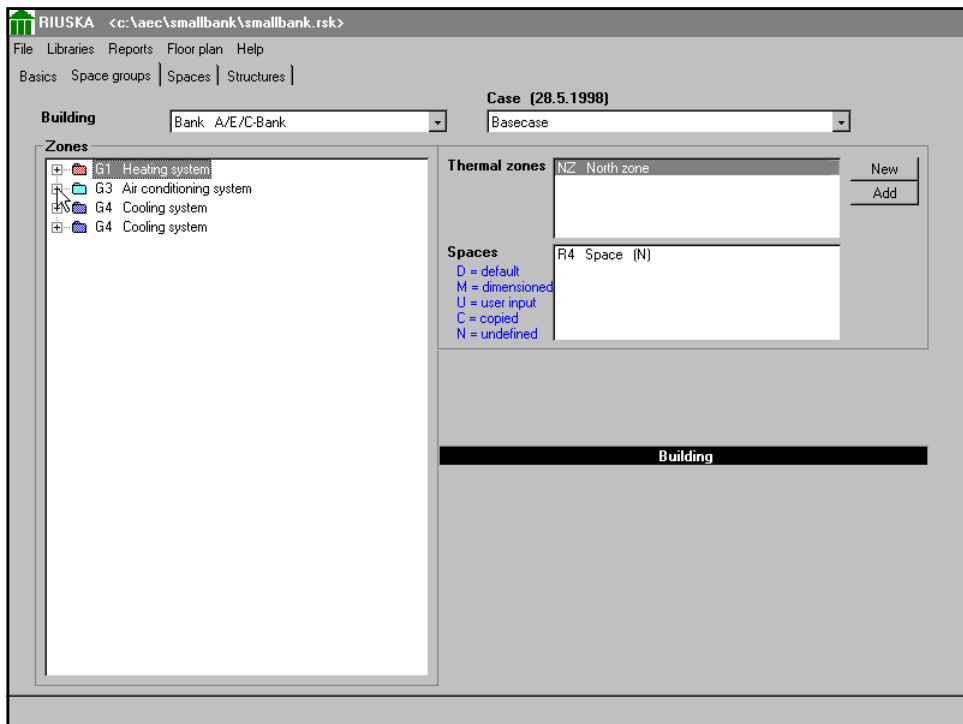
345 Update

Floor
 1. floor

Add to zone

Scale 300 Update

Print Copy Close



RIUSKA <c:\vaec\smallbank\smallbank.rsk>

File Libraries Reports Floor plan Help

Basics | Space groups Spaces | Structures |

Building: Bank A/E/C-Bank Case (28.5.1998): Basecase

Thermal zones: All

Spaces: R1 Space, R2 Space, R3 Space, R4 Space, R5 Space, R6 Space

Infiltration rate: []

Floor area (m2): 247 max. height (m): 4

Furnishing: <None>

Space type: Banking floor

Indoor air quality level: Normal

Writing input file for DOE: Basecase, R4 Space

Window shading schedules

Cancel

Kuormitustasot: Other, High, Normal, Low, No load

RIUSKA OPEN LOOP ENERGY SIMULATION

SUMMER DESIGN DAY INDOOR AIR TEMPERATURES °C / HOUR OF DAY

Simulation 1: (solid red line)
Simulation 2: (dashed blue line)
Simulation 3: (dotted green line)
Simulation 4: (dash-dot purple line)

SUMMER DESIGN DAY ROOM LOADS W/m² / HOUR OF DAY

Simulation 1: (solid red line)
Simulation 2: (dashed blue line)
Simulation 3: (dotted green line)
Simulation 4: (dash-dot purple line)

YEARLY INDOOR AIR TEMPERATURE CONSTANCY °C

--- Outside air

Legend: INFILTRATION (black), CONDUCTION (teal), PEOPLE (grey), LIGHTING (dotted), EQUIPMENT (purple)

ROOM SIMULATION

OUTPUT DATA

R4 Space

1434