

Development of an Energy Simulation Software - BCORE

Energy Efficiency Workshop

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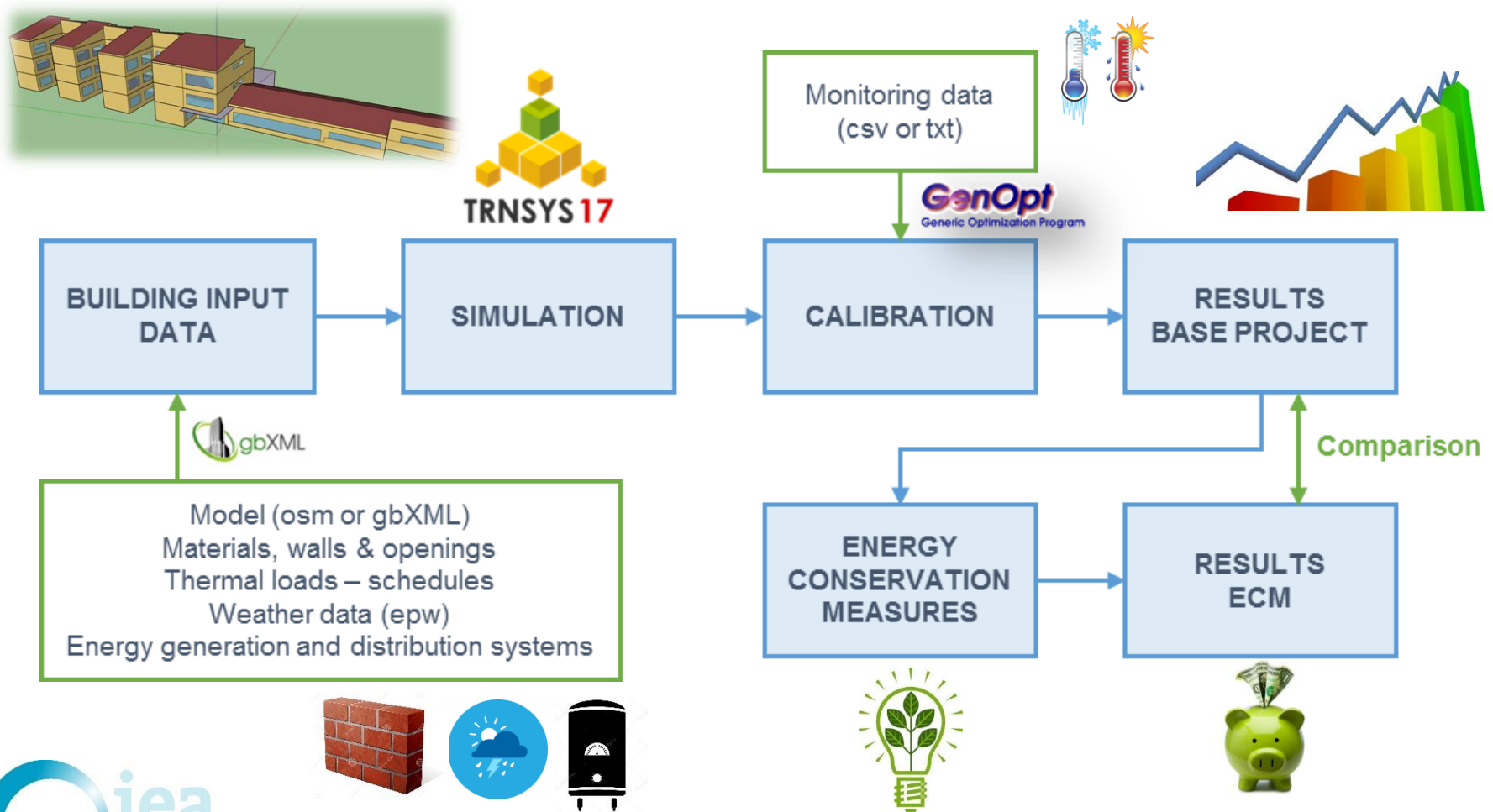
- Introduction
- Operation of the Software
- Step by Step: A Complete Project

Introduction

- ✓ Automated energy simulation and calibration software tool for buildings
- ✓ Own development
- ✓ Web access
- ✓ Friendly interface
- ✓ Languages: English and Spanish

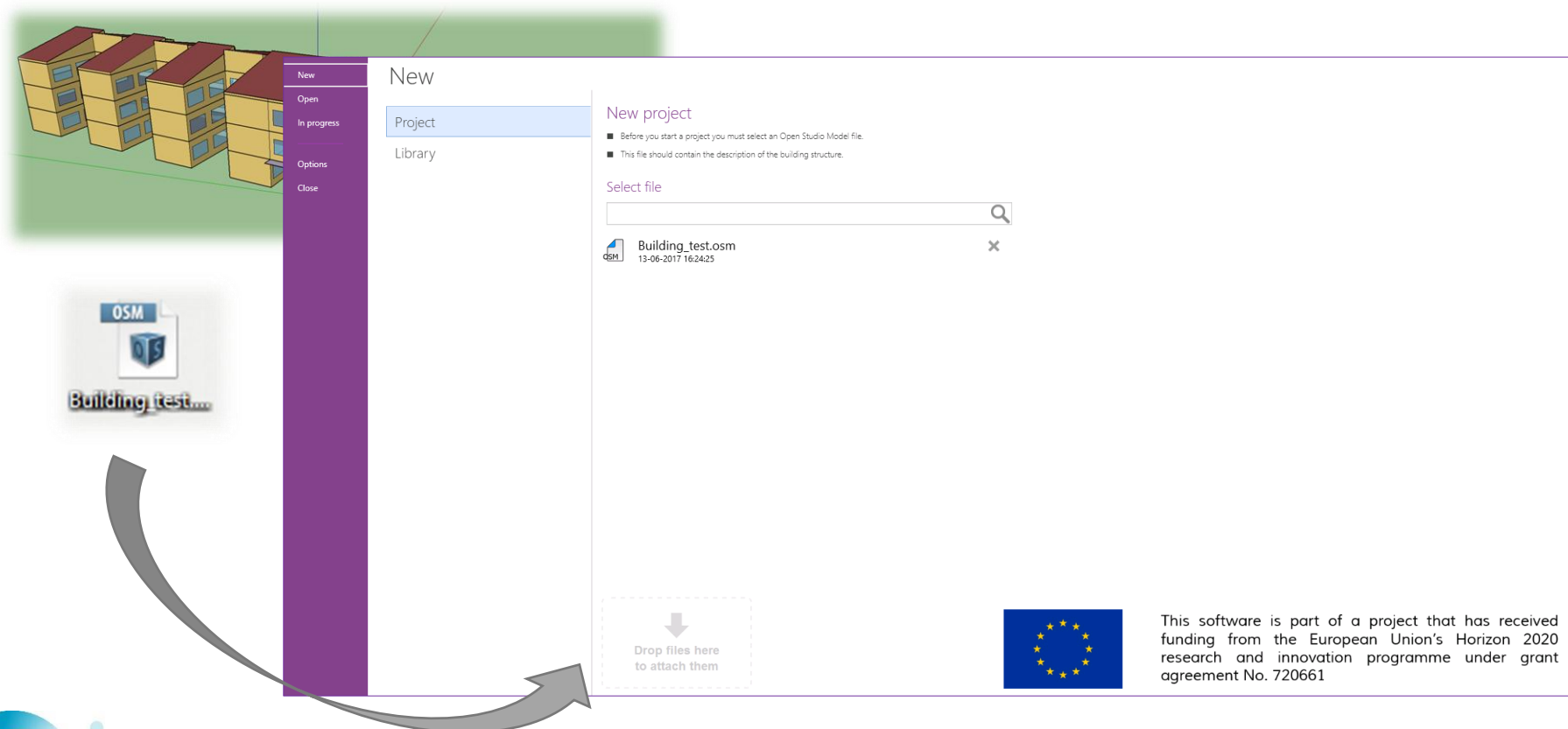


Operation of the Software



Step by Step: A Complete Project

SketchUp + OpenStudio plug-in



Step by Step: A Complete Project

Start Building Simulation Calibration E.C.M. Results

General Settings Materials Walls Openings Thermal zones Groups Elements Schedules Generation system Distribution Systems

GENERAL

Search: Enter the
Sort by: Alphabet
Floor: All

CUBIERTA_1
CUBIERTA_2
P1_AULAS
Floor: Planta Baja
Surface: 402.085 m²
Volume: 1407.298 m³
P1_DESPACHOS
P2_AULAS
P2_DESPACHOS
PB_AULAS
PB_ENTRADA
PB_VARIOS

Select energy generation system:
Boiler with storage tank

Layout: Boiler:

Boiler properties

Rated capacity: 35000 W
Min. ratio: 0
Boiler outlet water temperature: 80 °C
Boiler efficiency: 0.85
Combustion efficiency: 1
Minimum tank temperature for starting the generation system: 65 °C
Fuel type: Diesel
NCV of the fuel: 43.1 MJ/kg
Fuel density: 832 kg/m³
Fuel cost: 0.932 €/l
Fluid specific heat of the primary circuit: 4190 J/kg·K

Step by Step: A Complete Project

SIMULATION

Simulation 03/07/2017 12:24:13

LOG
[12:24:13] - Base Project: preparing simulation
[12:24:19] - Base Project: simulating

Start of the simulation: 12:24:13 07/03/2017
Elapsed time: 0:01:28

RUN IN BACKGROUND FINISH

CALIBRATION

Calibration 03/07/2017 17:53:30

STEPS
Step 1

OBTAINED ERRORS
SCHEDULE MULTIPLIER TYPE: Infiltration, ON ZONES: F1_CLASSROOMS, F1_OFFICES, F2_CLASSROOMS, F2_OFFICES, GF_CLASSROOMS, GF_HALL1

Value	Calibrated Value
2.5875	

OBTAINED ERRORS

	Initial value	Final value
Temperature		
MBE	0.288	0.000
RMSE	0.000	0.000
NRMSE	0.000	0.000
CV(RMSE)	0.000	0.000

Total Errors
Initial Error : 28.844%
Error after calibration : 0.040%

SAVE CALIBRATED PROJECT VIEW RESULTS RUN IN BACKGROUND FINISH

Step by Step: A Complete Project

ENERGY CONSERVATION MEASURES

Start Building Simulation Calibration E.C.M. Results

ECM Settings Economic valuation Run E.C.M.

1 ECM 1a 2 ECM 1b 3 ECM 2a 4 ECM 2b 5 ECM 2c 6 ECM 3a 7 ECM 3b 8 ECM 4

FEATURES MATERIALS WALLS GLASSES OPENINGS SCHEDULE FACTOR GLOBAL SCHEDULES ZONE SCHEDULES FILES

FEATURES MATERIALS WALLS GLASSES

CHANGE IN OPENING: EXTERIOR WINDOW 1

Opening name: EXTERIOR WINDOW 1

Current glass: Planilux/Aire/Planilux4/6/4

Square metres of opening: 661.8799999999999 m²

Cost per square metre: 2 €/m²

Total cost: 1323.76 €

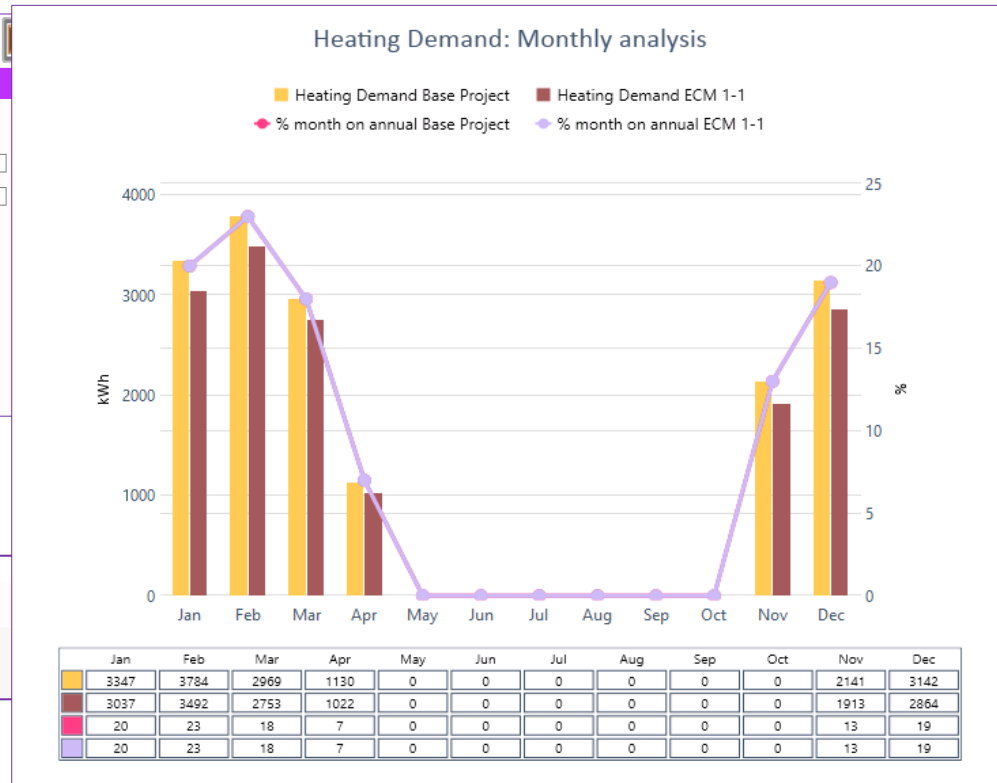
Openings: Enter the text you want to search

☐ DOUBLE WINDOW

☐ EXTERIOR WINDOW 1

RESULTS

Temperature Power Demand Weather data Generate Report



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