geco

GH2ECO AND VICE VERSA

by [uto] ursula frick - thomas grabner
Grasshopper® Robert McNeel & Associates
Autodesk© Ecotect Analysis 2010/2011

component EcoLink

component EcoMeshExport

component EcoSolCal

component EcoSolRequest

component EcoGridRequest

component EcoLua

component EcoDayOfYear

component EcoLink

searches on your computer for a installed version of ecotect analysis

setting boolean toogle to true:
connectivity test if ecotect is already started, if not the component try to start it and test again

setting boolean toogle to false again:
if you have started ecotect with EcoLink the application will be closed searches on your computer for a installed version of ecotect analysis

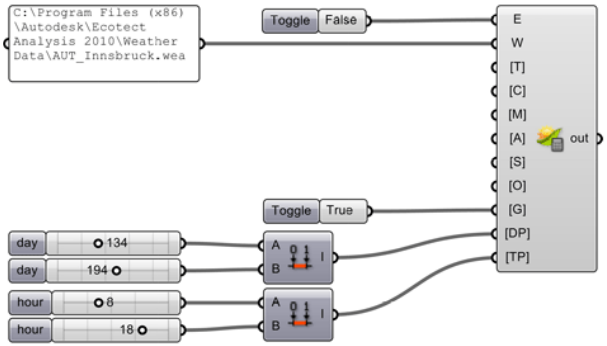
component EcoMeshExport

send the connected mesh geometry to ecotect
important: the facenormals have to be set outwards

setting boolean toogle to true:
meshfaces will be send to ecotect

alternative input:
[C] if you are not working in metric space please input your scale
[N] option for sending geometry
0 model new - delete all object
1 delete only in ecotect selected object
2 delete nothing". 0

component EcoSolCal



Calculates incident solar radiation levels (insolation) over either the current analysis grid or objects within the model

important: the facecount influences the calculation time. The internal timeout for the component is set to 5 minutes but the calculation in ecotect will continue until it is finished

setting boolean toogle to true:

calculation starts

input:

W : Path of File for Weather Data *.wea to Set Location

p.e. C:\Program Files (x86)\Autodesk\Ecotect Analysis 2011\Weather Data\Germany-Hannover.wea

alternative input:

[T] Relevant Data Table(Terrain Types)
- 0 In a location exposed to the wind
- 1 In a rural setting (reasonably open)
- 2 In a suburban setting (reasoanbly protected)
- 3 In a dense urban setting (very protected)

[C] Available Insolation Calculations:
- 0 Incident Solar Radiation on Points & Surfaces
- 1 Solar Absorbtion/Transmission of Object Surfaces
- 2 Sky Factor & Photosynthetically Active Radiation
- 3 Shading, Overshadowing and Sunlight Hours
- 4 COMPARE VALUE- Reference (Before)
- 5 COMPARE VALUE- Comparison (After)

[M] Available Insolation Metrics
must be set if Insolation Calculations: is set to Reference

[A] Available Insolation Accumulations
- 0 Cumulative
- 1 Average Daily
- 2 Average Hourly
- 3 Peak

[S] SkySubDivision default : 15x15

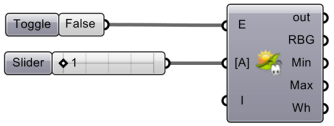
[O] If connected, calculation will restart when changing the object
connect the exported mesh

[G] Switch between Objects and Grid default : object

[DP] Determines the start and end day of the year for the calculation
this are two integer values between 1 and 365

[TP] Determines the starting and ending time for the calculation
this are two decimal values between 0.00 and 23.99

component EcoSolRequest



receive Calculated incident solar radiation levels

setting boolean toogle to true:

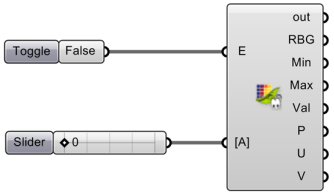
receiving

[I] Interval of indices of meshfaces to Import the attribute

alternative input:

[A] Available Attributes:
- 1 Total Radiation
- 2 Total Direct Radiation
- 3 Total Diffuse Radiation

component EcoGridRequest



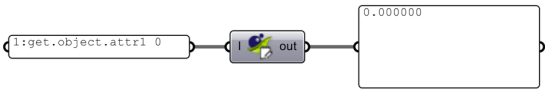
receive 2D analysis grid data

setting boolean toogle to true:
receiving

input:
[A] Available Attributes:

0 Total Radiation
1 Total Direct Radiation
2 Total Diffuse Radiation
3 Overcast Sky Factor
4 Uniform Sky Factor

component EcoLua

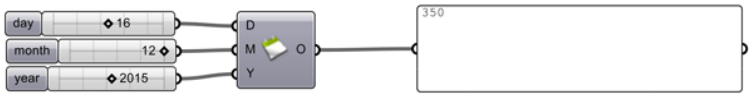


send and receive Lua commands to/from Ecotect
LUA command SDK is available in the scriptmanager of ecotect

input:
[I] options

0: Executer p.e. 0:model.new;
1: Requester p.e. 1:get.object.attr2 0;

component EcoDayOfYear



Day of The Year 'Julian Date'

input:
[D] day
[M] month
[Y] year