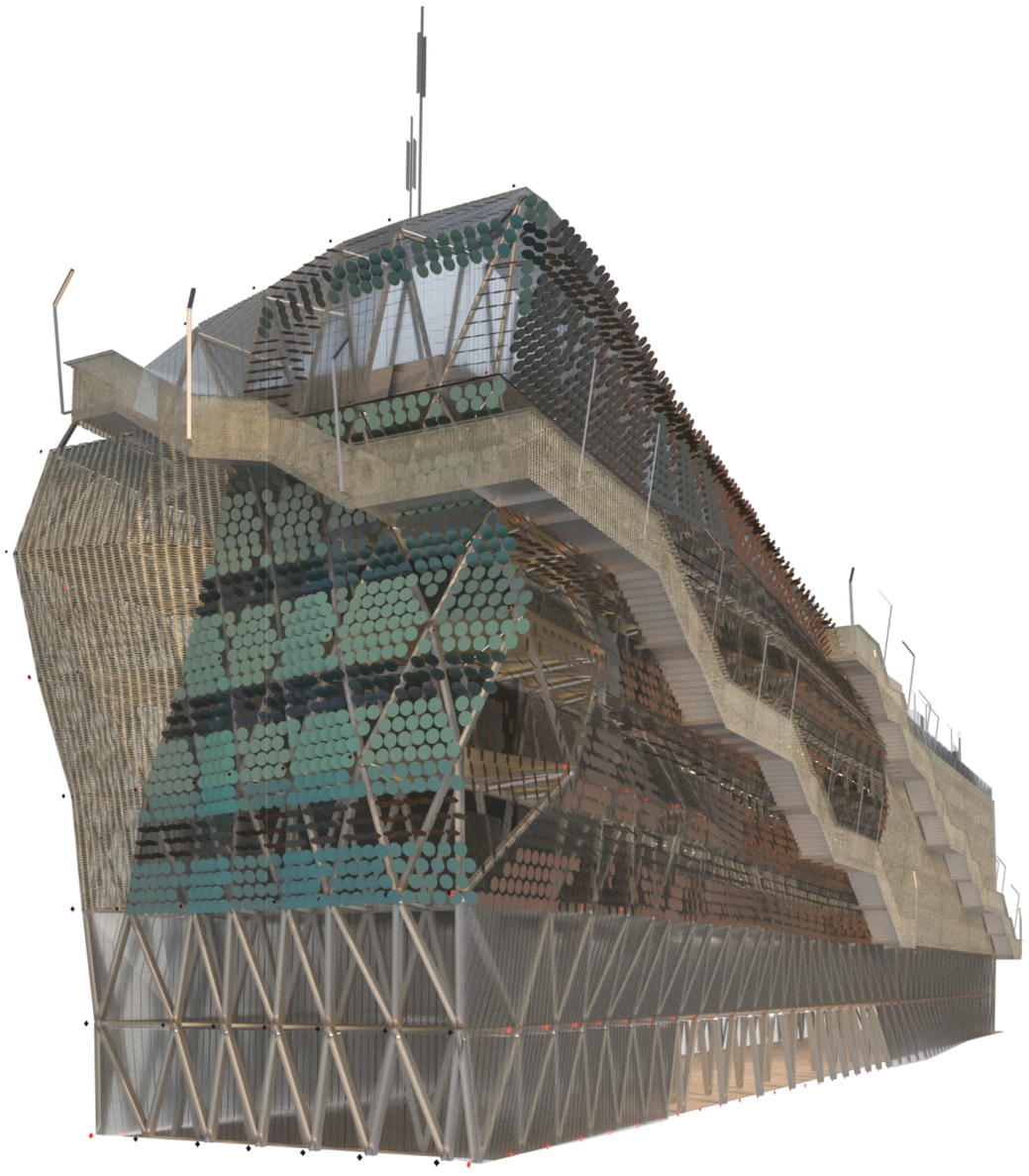


Seguiment de la trajectòria solar

Orientació dels discs reflectors

Anàlisis de la incidència de
la radiació solar sobre els tacaments

Geco
www.arco.blogspot.com
(Plugin per la connectivitat entre Grasshopper i Ecotect)

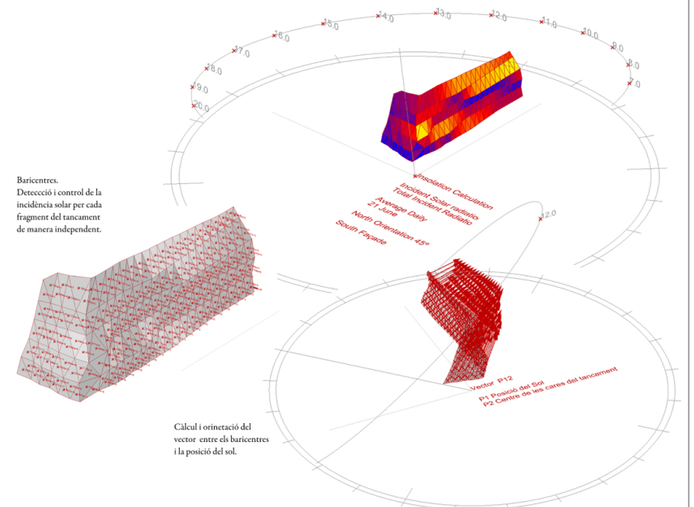
Connection with running instance of Ecotect successful.
Diffuse solar radiation [W/m²/hr (DiffSWEnt)] and [Hour] in the current weather data.

Weather Data Imported from:
C:\Users\Jordi\Dropbox\Universitat\Ecotect Anàlysis 2011\Weather Data\Madrid.wea
Scale Factor: 45

day: 172 and hour: 7 W: 0
day: 172 and hour: 8 W: 0
day: 172 and hour: 9 W: 489
day: 172 and hour: 10 W: 527
day: 172 and hour: 11 W: 548
day: 172 and hour: 12 W: 555
day: 172 and hour: 13 W: 540
day: 172 and hour: 14 W: 553
day: 172 and hour: 15 W: 537
day: 172 and hour: 16 W: 530
day: 172 and hour: 17 W: 457
day: 172 and hour: 18 W: 0
day: 172 and hour: 19 W: 0
day: 172 and hour: 20 W: 0

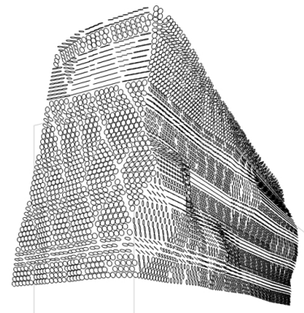
Mesh (V:1071 F:357)
Wh/m2 357 values added

Àrea Irradiada	Incidència Solar	Vector d'incidència
3.827368 m2	7.5803e+5 Wh/m2	{0.0598309,0.635284,-0.765996}
4.837122 m2	7.5803e+5 Wh/m2	{0.097305,0.646667,-0.756185}
5.179943 m2	8.2869e+5 Wh/m2	{0.0994917,0.659135,-0.745627}
5.179943 m2	8.2869e+5 Wh/m2	{0.0994917,0.659135,-0.779527}
6.710793 m2	8.2156e+5 Wh/m2	{0.0959984,0.583189,-0.806646}
5.14207 m2	8.1956e+5 Wh/m2	{0.0959984,0.583189,-0.834486}
5.142074 m2	8.1956e+5 Wh/m2	{0.0959984,0.542777,-0.834486}
2.422431 m2	8.3552e+5 Wh/m2	{0.0853385,0.551336,-0.829997}
9.32006 m2	8.9551e+5 Wh/m2	{0.063197,0.513018,-0.854774}
5.305295 m2	8.9551e+5 Wh/m2	{-0.42062,-0.513599,0.749552}
9.32006 m2	8.9551e+5 Wh/m2	{-0.42062,-0.513599,0.749552}
9.554604 m2	8.9551e+5 Wh/m2	{0.024332,0.552109,-0.833417}
5.47405 m2	9.0913e+5 Wh/m2	{0.04757,0.535594,-0.844402}
5.47405 m2	9.0913e+5 Wh/m2	{0.04757,0.535594,-0.844402}
5.288882 m2	1.027e+6 Wh/m2	{0.094687,0.552111,-0.841253}
6.137064 m2	1.0285e+6 Wh/m2	{0.122614,0.549207,-0.826795}
5.495178 m2	1.0285e+6 Wh/m2	{0.122614,0.549207,-0.826795}
4.894577 m2	9.9336e+5 Wh/m2	{0.168111,0.53285,-0.827561}
6.744834 m2	9.9298e+5 Wh/m2	{0.119582,0.52007,-0.8536}
4.583883 m2	9.9298e+5 Wh/m2	{0.123622,0.537706,-0.8169}
4.508739 m2	9.9298e+5 Wh/m2	{0.123027,0.531123,-0.8288}
4.508739 m2	9.9298e+5 Wh/m2	{0.123027,0.531123,-0.8288}
4.2890691 m2	9.9357e+5 Wh/m2	{0.273056,0.503885,-0.819477}
4.187493 m2	9.6783e+5 Wh/m2	{0.195655,0.520327,-0.799667}
5.977718 m2	9.7238e+5 Wh/m2	{0.110636,0.513136,-0.788755}
5.977718 m2	9.7238e+5 Wh/m2	{0.110636,0.513136,-0.788755}
5.869861 m2	1.0239e+6 Wh/m2	{0.352476,0.492556,-0.795707}
5.765095 m2	1.0239e+6 Wh/m2	{0.157008,0.505118,-0.746613}
5.804641 m2	1.0146e+6 Wh/m2	{0.189358,0.485893,-0.782501}
5.804641 m2	1.0146e+6 Wh/m2	{0.189358,0.485893,-0.782501}
5.394767 m2	1.0461e+6 Wh/m2	{0.424129,0.47681,-0.768816}
5.282811 m2	1.0933e+6 Wh/m2	{0.447067,0.467537,-0.749959}
5.282811 m2	1.0933e+6 Wh/m2	{0.447067,0.467537,-0.749959}
5.070818 m2	1.177e+6 Wh/m2	{0.478876,0.474387,-0.736007}
5.973191 m2	1.1452e+6 Wh/m2	{0.488095,0.463162,-0.739756}
5.286743 m2	1.3229e+6 Wh/m2	{0.5087,0.469107,-0.721893}
5.769308 m2	1.3229e+6 Wh/m2	{0.5087,0.469107,-0.721893}
5.769308 m2	1.2862e+6 Wh/m2	{0.512,0.459351,-0.724668}
5.527795 m2	1.284e+6 Wh/m2	{0.514911,0.448574,-0.730918}
5.425592 m2	1.3156e+6 Wh/m2	{0.563118,0.448984,-0.695766}
5.425592 m2	1.3156e+6 Wh/m2	{0.563118,0.448984,-0.695766}
5.271419 m2	1.405e+6 Wh/m2	{0.58775,0.458783,-0.679103}
5.220628 m2	1.4036e+6 Wh/m2	{0.594395,0.459951,-0.679586}
5.220628 m2	1.4036e+6 Wh/m2	{0.594395,0.459951,-0.679586}
5.169845 m2	1.405e+6 Wh/m2	{0.610135,0.42167,-0.666455}
5.470388 m2	1.406e+6 Wh/m2	{0.588535,0.612612,-0.75469}
5.5132 m2	1.404e+6 Wh/m2	{0.091277,0.611188,-0.786205}
5.948108 m2	1.404e+6 Wh/m2	{0.088165,0.587206,-0.804746}
5.5132 m2	1.404e+6 Wh/m2	{0.088165,0.587206,-0.804746}
5.453729 m2	1.404e+6 Wh/m2	{0.090266,0.559453,-0.823958}
6.409112 m2	1.4039e+6 Wh/m2	{0.093397,0.553313,-0.827721}
6.409112 m2	1.4039e+6 Wh/m2	{0.093397,0.553313,-0.827721}
5.118632 m2	1.3998e+6 Wh/m2	{0.096137,0.53115,-0.841988}
5.86909 m2	1.397e+6 Wh/m2	{0.08279,0.49281,-0.8664193}
5.69281 m2	1.397e+6 Wh/m2	{0.0606969,0.50465,-0.861128}
5.940768 m2	1.397e+6 Wh/m2	{0.027493,0.494321,-0.868848}
5.69281 m2	1.397e+6 Wh/m2	{0.027493,0.494321,-0.868848}
5.95 m2	1.3971e+6 Wh/m2	{0.021532,0.494392,-0.868972}
5.950008 m2	1.3970e+6 Wh/m2	{0.044804,0.505032,-0.861957}
5.950008 m2	1.3970e+6 Wh/m2	{0.044804,0.505032,-0.861957}
4.930113 m2	1.3887e+6 Wh/m2	{0.089597,0.501449,-0.859176}
5.45081 m2	1.3855e+6 Wh/m2	{0.108736,0.491528,-0.864047}
5.482339 m2	1.3754e+6 Wh/m2	{0.133334,0.49568,-0.858088}
5.482339 m2	1.3754e+6 Wh/m2	{0.133334,0.49568,-0.858088}
5.513705 m2	1.378e+6 Wh/m2	{0.175053,0.487357,-0.852084}
5.513705 m2	1.378e+6 Wh/m2	{0.175053,0.487357,-0.852084}
5.509526 m2	1.3636e+6 Wh/m2	{0.199346,0.483931,-0.854568}
5.56528 m2	1.3636e+6 Wh/m2	{0.219471,0.48512,-0.846458}
5.553963 m2	1.3636e+6 Wh/m2	{0.219471,0.48512,-0.846458}
5.553963 m2	1.3636e+6 Wh/m2	{0.260913,0.478315,-0.838067}
5.57311 m2	1.3564e+6 Wh/m2	{0.274908,0.469053,-0.839529}
5.57311 m2	1.3564e+6 Wh/m2	{0.274908,0.469053,-0.839529}
5.55532 m2	1.3069e+6 Wh/m2	{0.314164,0.45915,-0.836955}
5.473204 m2	1.2774e+6 Wh/m2	{0.339614,0.464981,-0.817591}
5.586258 m2	1.2594e+6 Wh/m2	{0.326868,0.448099,-0.831412}
5.57375 m2	1.2594e+6 Wh/m2	{0.376664,0.457851,-0.805576}
5.57375 m2	1.2594e+6 Wh/m2	{0.376664,0.457851,-0.805576}
5.596648 m2	1.2594e+6 Wh/m2	{0.411588,0.42315,-0.791825}
5.602003 m2	1.2486e+6 Wh/m2	{0.421566,0.434557,-0.795891}
5.602003 m2	1.2486e+6 Wh/m2	{0.421566,0.434557,-0.795891}
5.627498 m2	1.2228e+6 Wh/m2	{0.45924,0.42827,-0.781613}
5.647298 m2	1.2228e+6 Wh/m2	{0.474494,0.436742,-0.762303}
5.654852 m2	1.2057e+6 Wh/m2	{0.485731,0.417387,-0.760921}
5.667481 m2	1.1909e+6 Wh/m2	{0.494895,0.432029,-0.747358}
5.667481 m2	1.1909e+6 Wh/m2	{0.494895,0.432029,-0.747358}
5.709436 m2	1.1909e+6 Wh/m2	{0.513257,0.431122,-0.741872}
5.714826 m2	1.1822e+6 Wh/m2	{0.519178,0.407981,-0.76675}
5.74748 m2	1.1822e+6 Wh/m2	{0.519178,0.407981,-0.76675}
5.747488 m2	7.7813e+5 Wh/m2	{0.564484,0.400936,-0.721533}
5.770478 m2	7.7132e+5 Wh/m2	{0.582982,0.4096,-0.7008885}
5.781858 m2	7.8535e+5 Wh/m2	{0.589585,0.398853,-0.6962296}
5.781858 m2	7.8535e+5 Wh/m2	{0.589585,0.398853,-0.6962296}
5.817518 m2	7.8535e+5 Wh/m2	{0.610955,0.386721,-0.691136}
5.53005 m2	7.8535e+5 Wh/m2	{-0.08257,-0.55132,-0.8068949}
5.469628 m2	7.8532e+5 Wh/m2	{-0.085385,0.551156,-0.8020251}
5.469628 m2	7.8532e+5 Wh/m2	{-0.085385,0.551156,-0.8020251}
6.05861 m2	1.0465e+6 Wh/m2	{-0.088910,0.56532,-0.8201981}
5.221323 m2	1.0465e+6 Wh/m2	{-0.095557,0.539737,-0.8363393}
5.221323 m2	1.0465e+6 Wh/m2	{-0.095557,0.539737,-0.8363393}
5.647633 m2	1.0465e+6 Wh/m2	{-0.105998,0.504256,-0.8571269}
6.285944 m2	1.0465e+6 Wh/m2	{-0.099558,0.493148,-0.8638595}
5.761458 m2	1.0465e+6 Wh/m2	{-0.109086,0.457796,-0.8823359}
5.117805 m2	1.0471e+6 Wh/m2	{-0.089965,0.463151,-0.8917181}
9.03884 m2	1.0465e+6 Wh/m2	{-0.065843,0.445661,-0.8927777}



Baricentres.
Detecció i control de la incidència solar per cada fragment del tancament de manera independent.

Càlcul i orinetació del vector entre els baricentres i la posició del sol.



Discs orientables.
En trams automatitzats, els coincidents amb les altures òptimes pel redireccionament dels raigs solar cap a l'interior de l'edifici.

Tams manuals, la resta.
Per que l'usuari pugui adaptar-se les condicions lluminiques a les seves necessitats particulars.

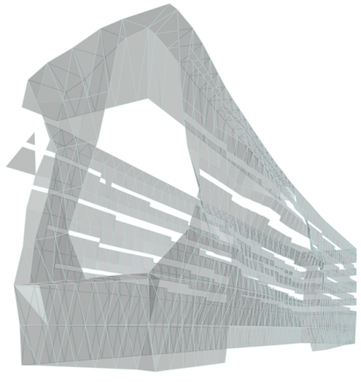
ESTRATEGIES
CONFORT

C

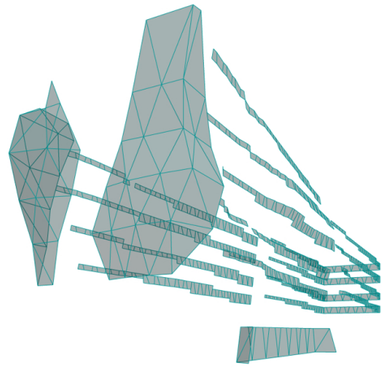
Materialitat
Exterior

SUD
Discs Orientables

EST/OEST
Deployé metàl·lic



70%
Tancament estanc
POLICARBONAT
K = 1.8 W/m2ºC

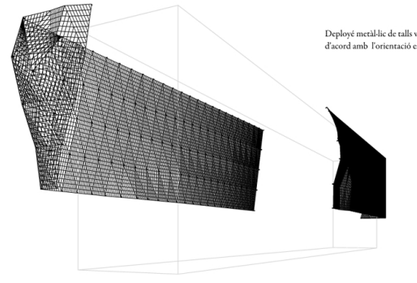


30%
Tancament estanc
VIDRE
K = 1.5 W/m2ºC

Tancament Estanc

Vidre
Policarbonat

Deployé metàl·lic de talls verticals
d'acord amb l'orientació oest.



Deployé metàl·lic de talls verticals
d'acord amb l'orientació est.