

Input:

Points of Interest (list of points)
Solar Vectors (list of vectors)
Environment (single mesh)
Distances (list of floats)

Pseudocode:

#intersect rays with environment

For each Pol:

 sum of intersections = 0

 For each Solar Vector:

 Draw reverse Solar Vector from Pol

 Intersect with environment

 if it intersects:

 sum = sum + 1

 sums.append(sum)

#normalize the sums (0.0 to 1.0)

highestvalue = max(sums)

for each sum in sums:

 normalizedvalue = sum/highestvalue

 normalizedvalues.append(normalizedvalue)

#making sure the heart of the building receives no shadow

for each normalizedvalue:

 if distance > 11000:

 normalizedvalue = 1

 if 7000 < distance < 11000:

 normalizedvalue = 0.9

 if 6000 < distance < 7000:

 normalizedvalue = 0.7

 shadowvalues.append(normalizedvalue)

Output:

list of floats indicating how much shadow each voxel receives