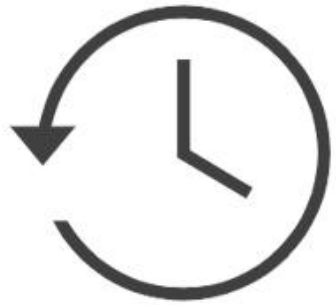

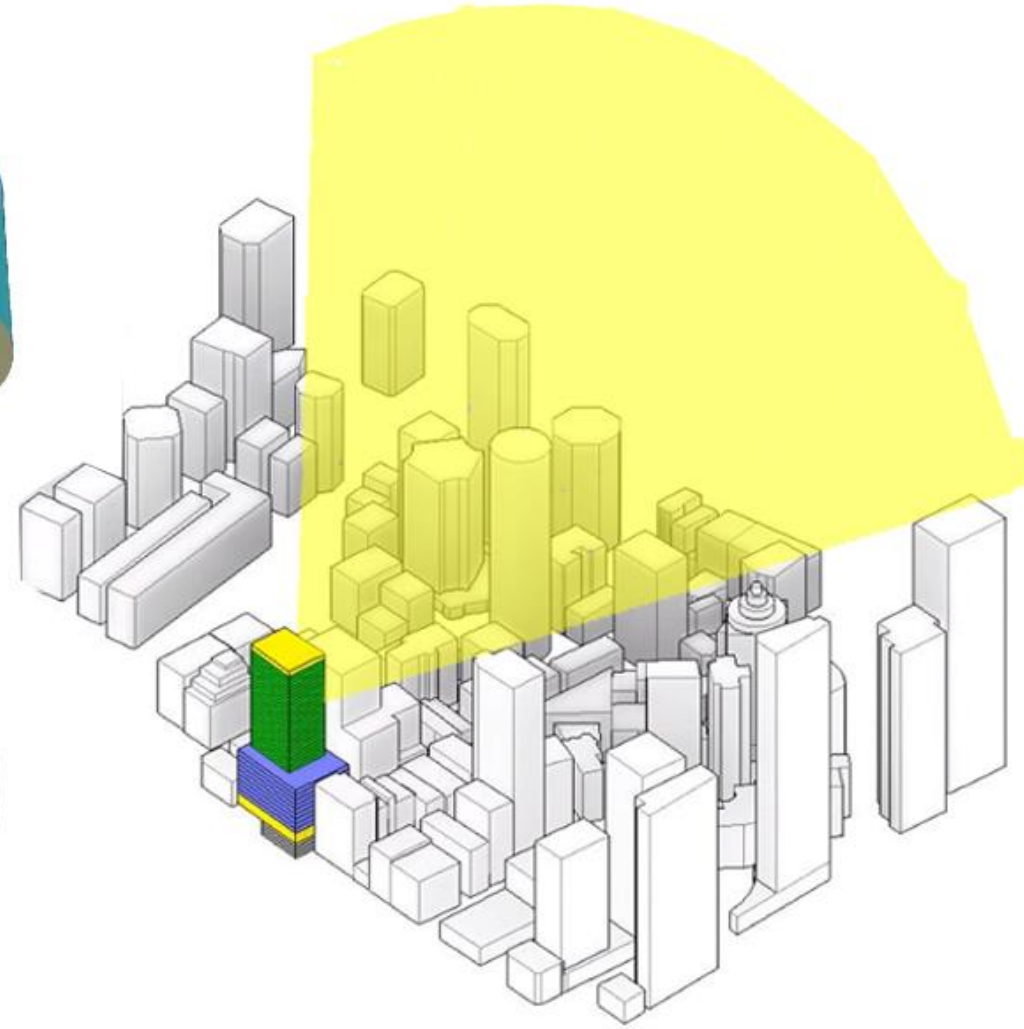

Dynamo Feasibility

Analysis Refinement

Revit

Site and Massing Study

1: Site/Controls

2: Building Massing

3: Design Options

4: Scheduling Areas

5: Shadow Diagrams

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Dynamo

Site Analysis

6: Shadow diagram setup

7: Surface Analysis Grids

8: View Analysis

9: Sun Hour Analysis

10: Analysis Refinement

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Power BI

Analysis and reporting

11: Power BI Report

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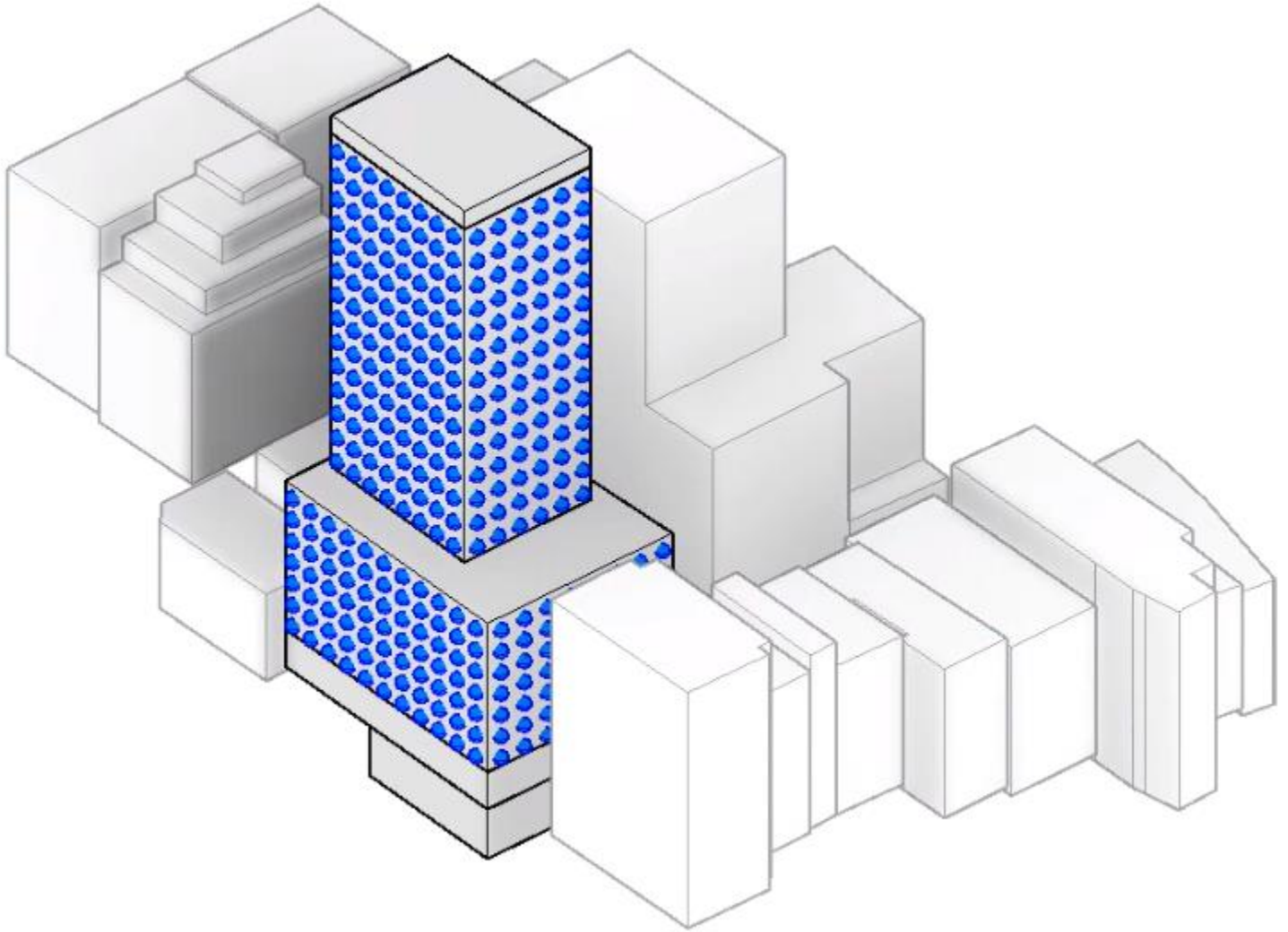

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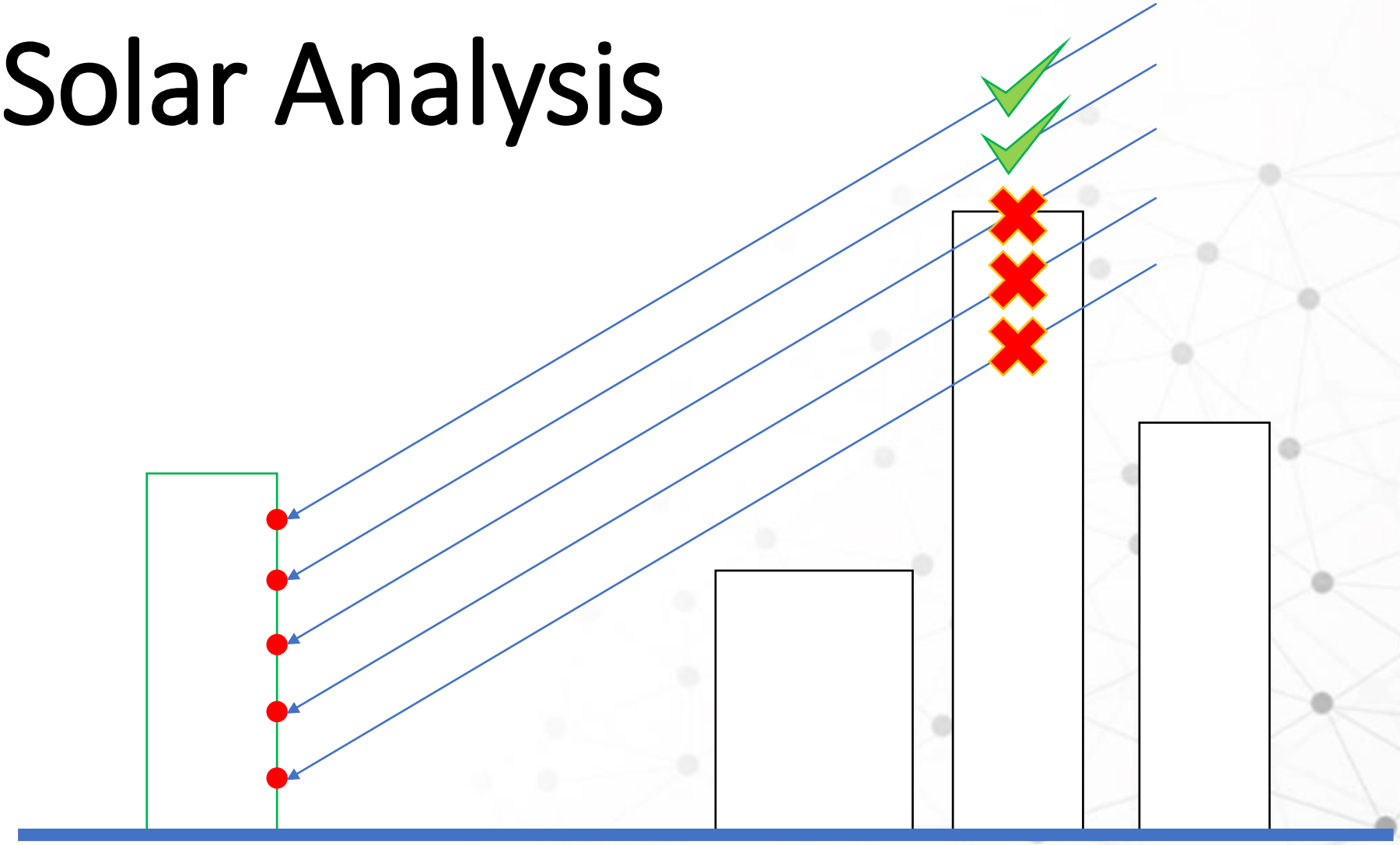
Solar Analysis



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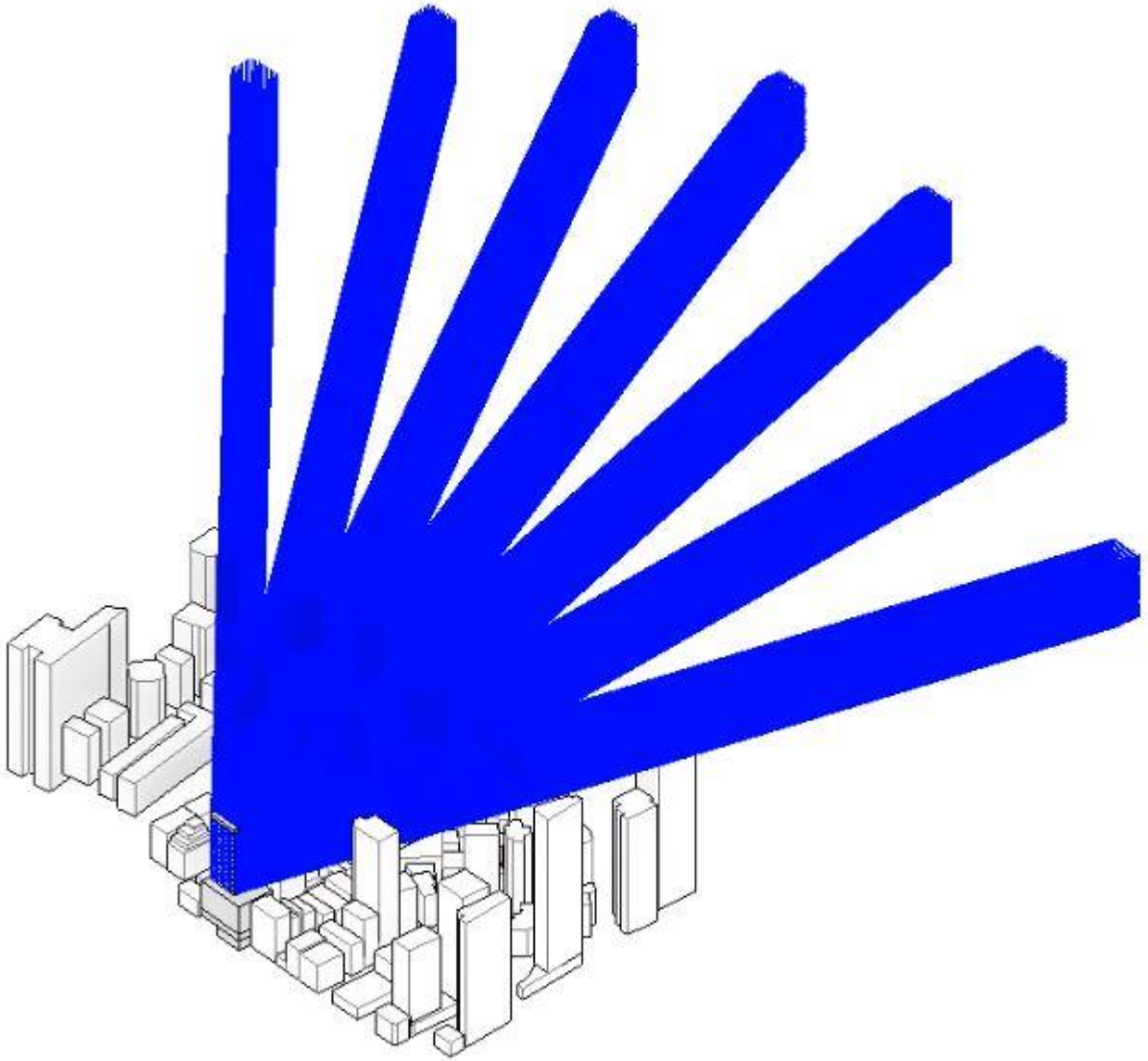

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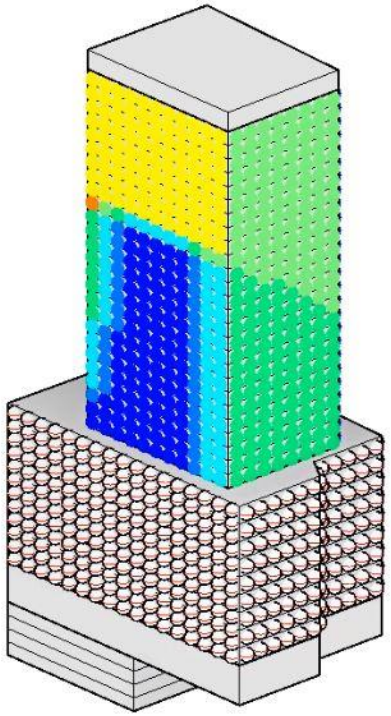

Name	Visibility	Projection/Surfac	
		Lines	Patterns
Detecors_Sun0	☑		
Detecors_Sun1	☑		
Detecors_Sun2	☑		
Detecors_Sun3	☑		
Detecors_Sun4	☑		
Detecors_Sun5	☑		
Detecors_Sun6	☑		
Detecors_Sun7	☑		

<SH By face>

A	B	C	D
ABG_Data_SunHou	ABG_Data_Count2	ABG_Data_Area2	%
East Tower			
0	3	38 m²	0.30%
1	2	26 m²	0.20%
2	23	294 m²	2.33%
3	180	2302 m²	18.22%
	208	2660 m²	21.05%
North Tower			
0	93	1115 m²	9.41%
1	30	360 m²	3.04%
2	50	600 m²	5.06%
3	10	120 m²	1.01%
4	3	36 m²	0.30%
5	1	12 m²	0.10%
7	99	1187 m²	10.02%
	286	3429 m²	28.95%
South Tower			
0	286	3390 m²	28.95%
	286	3390 m²	28.95%
West Tower			
3	105	1259 m²	10.63%
4	103	1235 m²	10.43%
	208	2494 m²	21.05%
988	988	11973 m²	100.00%

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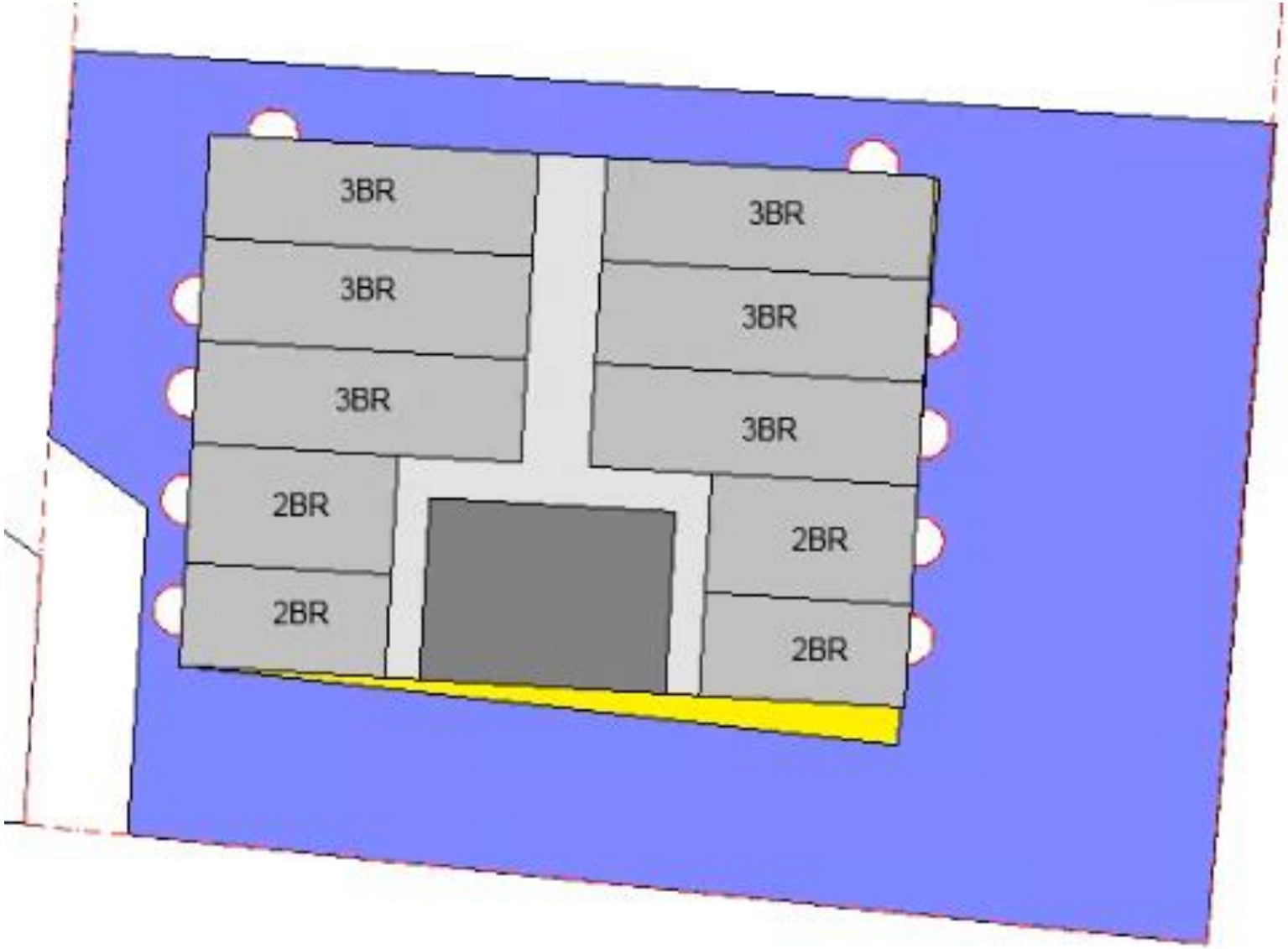
3BR
3BR
3BR
3BR
3BR
3BR
2BR
2BR
2BR
2BR

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Sun Hours – Huh?

Sydney requirement under *SEPP65*

Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas. (Objective 4A-1, p.79).

(Also a maximum of 15% receive 0 hours)

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Important to note

SEPP65 requires **15 minutes** of continuous exposure at minimum

We will refine the script to measure 15 minute continuity

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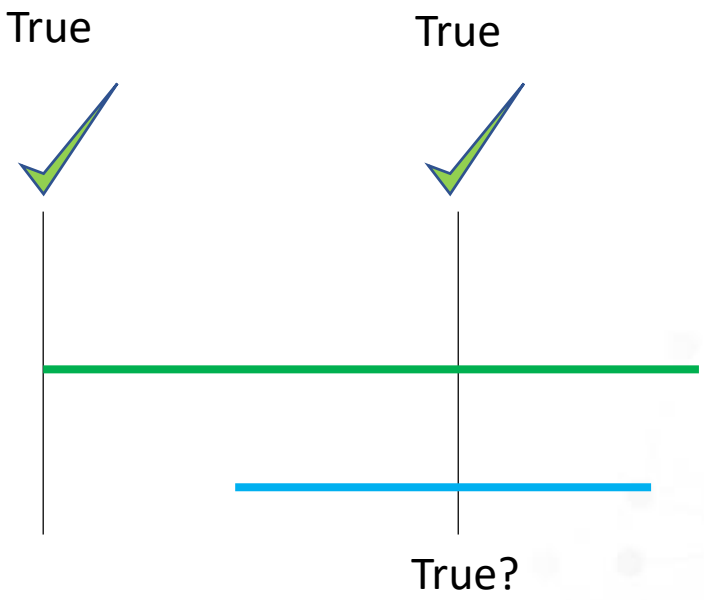
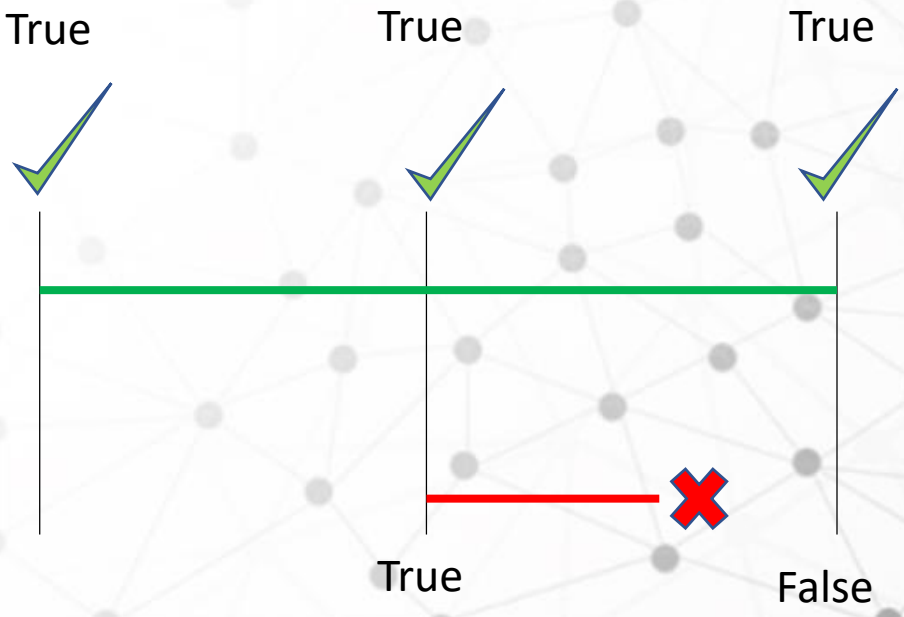
Interval detection

2 True = 15 minutes



3 True = 30 minutes



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Interval detection

N consecutive Trues

= N-1 * 15 minutes of sunlight

SUM/4 = Sunlight hours

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Grasshopper/Rhino

Is best for detailed analysis

Great guide here;

https://parametricmonkey.com/2015/09/07/sepp65-solar-analysis/

Weather files

https://energyplus.net/weather

Weather Search

Search Results for: sydney

Your search matched 4 results.

- Sydney 717070 (CWEC)
- NSW Sydney 947670 (IWEC)
- NSW Sydney 947680 (RMY)
- NSW Mascot-Sydney Airport 947670 (RMY)

Search again

Weather Data Download

Click on a file to download.

- ddy
- epw
- stat
- Download All

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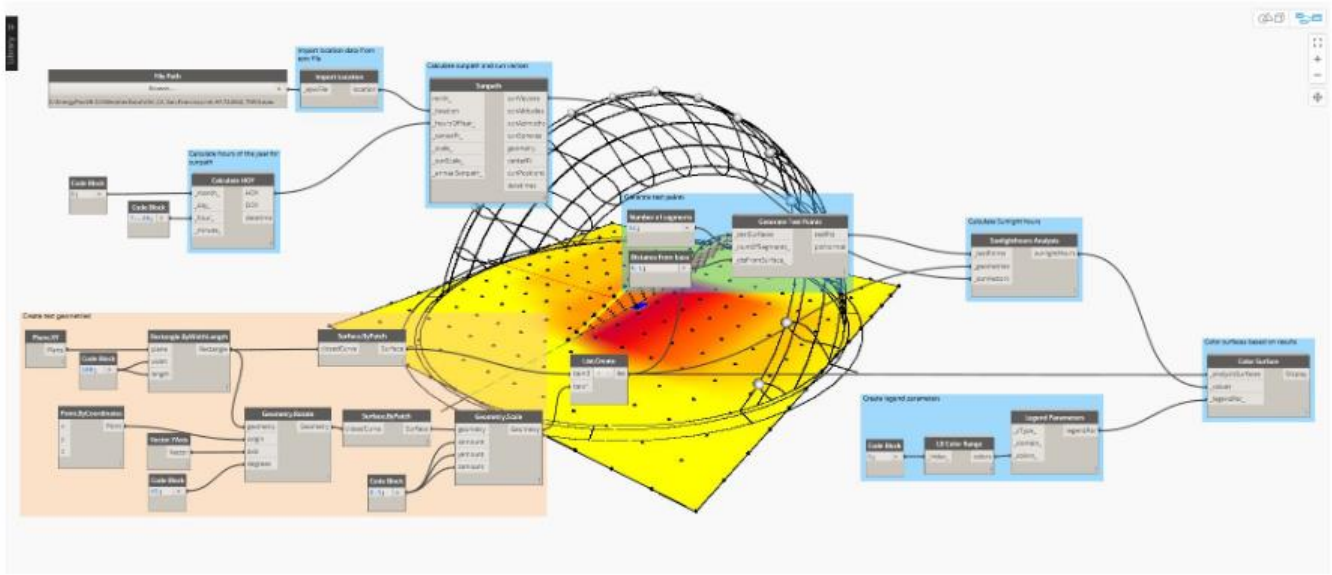
Ladybug (0.2.1)

Download from package manager

ladybug-dynamo

Ladybug-dynamo is the ladybug plugin for Dynamo to import and visualize weather data from and EnergyPlus Weather file (EPW).



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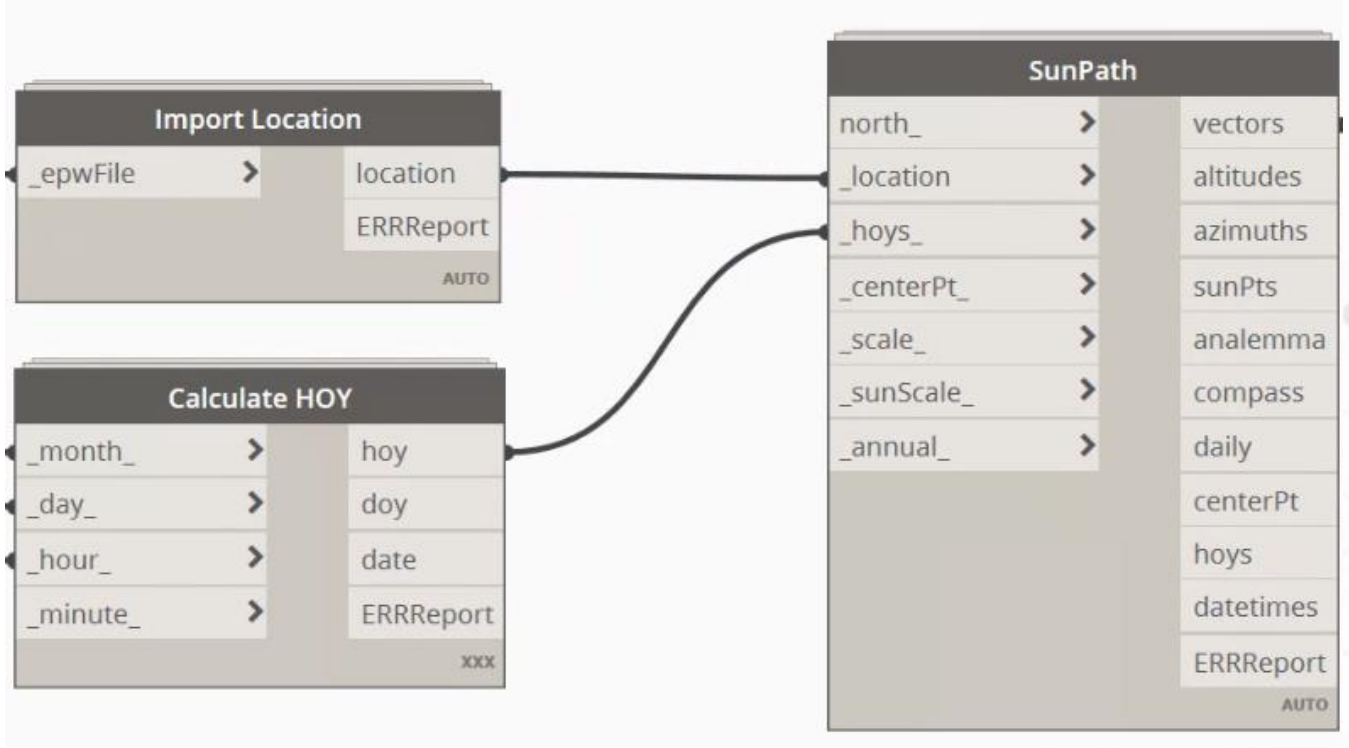
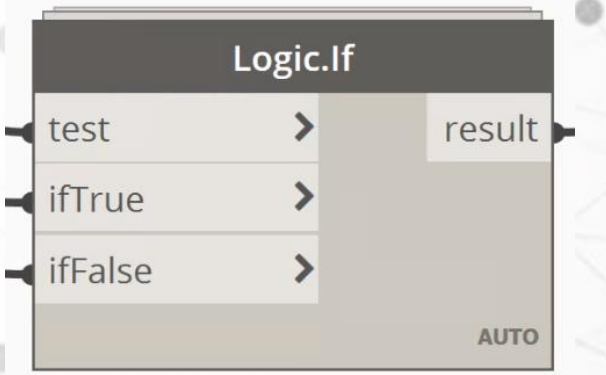
Custom Nodes

Ladybug



Zebra



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Versioning

Need Dynamo 2.X!

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Without further ado…

Let’s get started…

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Next: Part 11

Power BI

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Prepare some XCL data

Mass floor schedule

Apartment counts/$

Sun hours by floor

Building section

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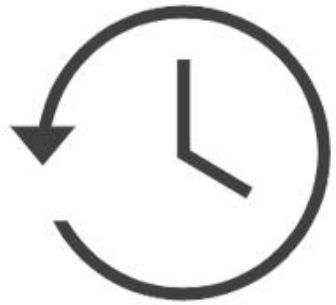

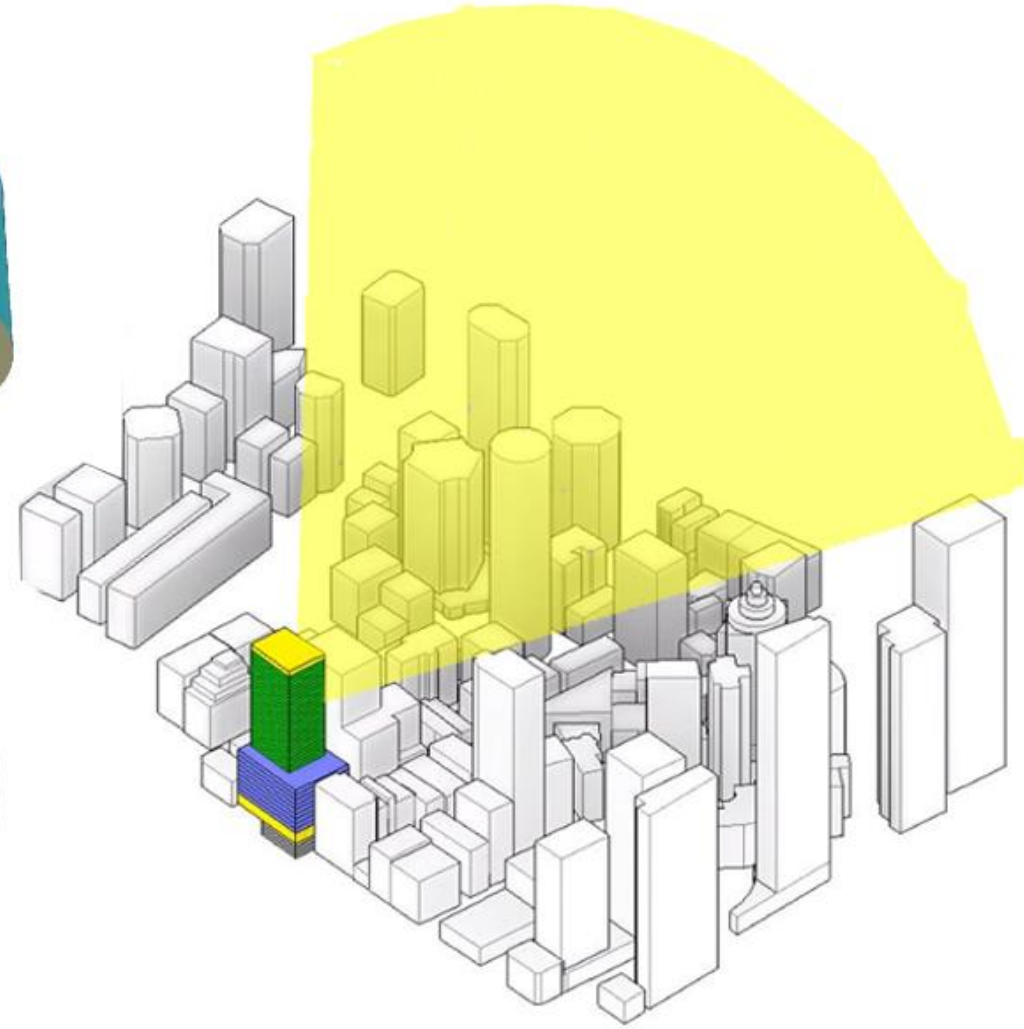

Dynamo Feasibility

Analysis Refinement