Install steps:

1. First, Find your QGIS path, and put the install .zip file in the plugins folder.

(My qgis path is C:\Users\Hui\AppData\Roaming\QGIS\QGIS3\profiles\default\python\plugins)

2. Select the Plugins button, and select Manage and install plugin

🔇 *kth — QGIS			
Project <u>E</u> dit <u>V</u> iew <u>L</u> ayer <u>S</u> etti	ings <u>P</u> lugins Vect <u>o</u> r <u>R</u> aste	er <u>W</u> eb <u>M</u> esh Pro	<u>c</u> essing <u>H</u> elp
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3. Press Install from Zip a	and chose the path of ins	stall .zip file, and p	oress install
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$P \mathcal{N} \mathcal{N}_{\text{Installed}}$	 A-Maps AGT - Archaeological Geophysics Tool 	Installed Plugins	
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🔇 Plugins Install from ZIP			×
🌺 All			
Installed If you are provided with a zir	n nackage containing a plugin to install, please s	elect the file below and click the <i>To</i> s	stall alugin button
Please note for most users th	his function is not applicable, as the preferable v	vay is to install plugins from a repos	sitory.
ZIP file:			
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When it shows plugin installed successfully, we could start to use the tool.

🔇 Plugins Install f	rom ZIP	×
🌺 All	Plugin installed successfully	⊗
installed		
눩 Not installed	If you are provided with a zip package containing a plugin to install, please select the file below and click the Install plugin button.	
💒 Upgradeable	Please note for most users this function is not applicable, as the preferable way is to install plugins from a repository.	
📕 Invalid	71D files	
Install from ZIP	2.0 me.	
A Carriera	Install Plugin	

Part 1: Facade generation prototype

Step 1: load the building and lots shape files in QGIS



The shape files will be loaded into the main window, which are denoted as by_01 and ay_riks below.

Reminder: You could load any other shape files. Make sure to load both by shapefile and ay shapefile at the same time, in order to run the following features.



Step 2: select Web -> CIM -> CIM Explore

🔇 *kth	— QGIS	5															
Project	<u>E</u> dit	<u>V</u> iew	<u>L</u> ayer	<u>S</u> ettings	<u>P</u> lugins	Vect <u>o</u> r	<u>R</u> aster	<u>W</u> eb	<u>M</u> esh	Processing	<u>H</u> elp	1					
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	8 -		, ρ	$\int_{-}^{1} \int_{-}^{1}$	60 G	" <u>\</u>	0		6	3 🛛 😽 📘	🌶						

Step 3: select Developer and enter the Main window

🔇 User Login



The shapefiles are listed in the layer sub window. You could select the checkbox to show or hide the layer. You could also drag individual shape file to choose which layer is on top.





Step 4: Select Envelope view Window



Longitude:673414.812371134, latitude:6581710.5814433005

Step 5: Select the icon Select Features by Polygon

- 1. Select -> Select Features by polygon
- 2. Use mouse to draw a polygon on the building to select it

Reminder: You could use the Scholl on mouse to zoom in the lots and buildings on the Feature View.

Make sure to draw polygon inside the pink building shown below to select only one building each time. If you draw a large polygon across several buildings, you will select several builds at the same time. This will cause collapse when generating facades later.





Step 6. Generate Facade

- 1. Select Facade View icon, it will pop up a Set Facade Parameter window.
- 2. Select Set Width, it will pop up a Select Facade window

Envolope Windov	N								_		
Attribute Street Vie	w					-					
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Attributes			Fea	ature \	/iew (Facade v (Layers)	IEW				Traffic View (Roads and Railways)
🔇 Set Facade Parame	eters				×						
Num of floor	5										
1st floor height	4										
Other floor height	3										
Roof height	5										
Build Width											
Building Height											
Set Width Set Heigh	nt Draw										
	Flip										

- 3. Choose the building line you want generate facade, as is shown below the red line near the street on the selected building (colored in yellow).
- 4. After select the line, press the confirm Selection, and then the close

Reminder: follow the steps in order, otherwise the tool will collapse here.

1 Art	Select Facade – 🗆
	Pleas select the factore (linesegment) on the carras.
	2. 3.

- 5. Return to the Set Facade Parameters window, change the parameters in the box, and choose Set Height
- 6. And then press draw, where the facade will be shown in the Envelope View window.

Reminder: if you want to Flip the facede direction, you could use the Flip button. Repeat the above steps to generate more facades along the streets.

This version of CIM tool only enable the screen cut to save the generated facade images currently.

♀ Set Facade Parameters ×	♀ Set Facade Parameters ×
Num of floor51st floor height4Other floor height3	Num of floor51st floor height4Other floor height3
Roof height 5 Build Width 27.85267	Roof height 5 Build Width 27.78767
Building Height Set Width Set Height Draw	Building Height 21.0 Set Width Set Height Draw
Flip	Flip



Part 2: Transportation prototype

Step 1: Select Transportation analysis

1. Open Envelope window



The traffic roads and railways are shown in the following Traffic View



2. Select the traffic analysis icon and press the button



Step 2. Set parameters on the Traffic Panel

The parameters setting is shown in the green rectangle below, where the users could type in the specific parameters according to different cases.

Form2-> Indicators

Factor2-> Factors

Calculate : User could use the Calculate button after type in all the parameters required and then the CIM tool could calculate the result/

Integration leve	ls	Energy use kWh/pers	
Walking: Cycling:	100	Transport energy use: Private car Fossil fuels: Average consumption of fuel (//100)km) 95
Public transportat Private car:	ion: 100	Fossil fuels % Average load (persons/vehicle) Swedish average: 6060 Percentage fossil fuels Average journey (km)	95 0.95 17.9
Sum: Sum of squares:	Sum value Sum of squares	Swedish gasoline (kg CO2/l) Carbon emissions Swedish gasoline (kW/l)	2.75 8.94
Modal shares Walking: Cycling: Public transportat Private car:	25% 25% ion: 25% 25%	Biological carbon: Biological carbon: Biological carbon % Swedish average: 1710 Average consumption of fuel (//100 Average load (persons/vehicle))km) 40 10
		Mobility classes Percentage tossil tuels Flåneurs: Swedish gasoline (kg CO2/l) Oveling Advecated Swedish gasoline (kg CO2/l)	0.8 15 2.75
Modal shares (s Walking: Cycling: Public transportat Private car:	quares) 25% 25% 25% 25%	Cycling Advocates: Swedish gasoline (kW/l) Bus enthusiasts or trainspotters: Swedish gasoline (kW/l) Green Travelers: show Energy use Dedicated motorists: show Carbon emissions	9.77

The Yellow rectangle denotes the calculated result by the Indicator input.

The Blue rectangle denotes the calculated traffic analysis results given the Yellow rectangle as input.

	Energy use kWh	/pers	Temeles	
Valking: 70	Transport energy use: 184	9.9588235294118	Private car	
voling:	Fossil fuels: 155	0.5667647058824	Average consumption of fuel (1/100)	km) 95
hyblic transportation: 20	Fossil fuels % 1.19	930855643486717	Average load (persons/vehicle)	95
	Swedish average: 606	0.0	Percentage fossil fuels	0.95
rivate car: 100			Average journey (km)	17.9
um: 340			Swedish gasoline (kg CO2/l)	2.75
Sum of squares: 29400			Swedish gasoline (kW/I)	8.94
Public trai s 0.23529411764705882 Private ca • 0.29411764705882354	Swedish average:	1710.0	Average consumption of fuel (I/100) Average load (persons/vehicle)	km) 40 10
	Mobility classes		Percentage tossil tuels	0.8
	Flâneurs:	81.6	Swedish gasoline (kg CO2/l)	2 75
Aodal shares (squares)	Cycling Advocates:	89.2	Swedish gasoline (kW/l)	9.77
	Bus enthusiasts or trainsp	otters 71.2000000000002	5 ()	
valking: 0.100000000000000000000000000000000000	Green Travelers:	80.2		
Public tran; 0.21768707482993196	Rational Agents:	81.6	show Energy use	
	Dedicated motorists:	85.0		

Step 3. Modify the value in Indicators

1. Press the button Form2, and CIM will pop up a new indicator type in window.

Integration levels		Energy use kWh/pers	
Walking: Cycling: Public transportation: Private car: Sum:	100 100 100 100 Sum value	Transport energy use: Private car Fossil fuels: Average consumption of fuel (//100 Fossil fuels % Average load (persons/vehicle) Swedish average: 6060 Percentage fossil fuels Average journey (km)	0km) 95 95 0.95 17.9
Sum of squares:	Sum of squares	Swedish gasoline (kg CO2/l) Carbon emissions	2.75 8.94
Modal shares Walking: Cycling: Public transportation: Private car:	25% 25% 25% 25%	Transport carbon emissions: Biological carbon: Biological carbon: Swedish average: 1710 Average consumption of fuel (l/100 Average load (persons/vehicle) Percentage fossil fuels	0km) 40 10 0.8
Modal shares (squa Walking: Cycling: Public transportation:	ares) 25% 25% : 25%	Flåneurs: Swedish gasoline (kg CO2/l) Cycling Advocates: Swedish gasoline (kg CO2/l) Bus enthusiasts or trainspotters: Swedish gasoline (kW/l) Green Travelers: show Energy use Dedicated motorists: Show Energy use	15 2.75 9.77

2. The Users could change the individual values in the Blue rectangle areas.

 Walkable street layout Traffic calm street Biking oriented street 	100 100	
3. Traffic calm street 4. Biking oriented street	100	
4. Biking oriented street	100	
	100	
5. Transit oriented street	100	
6. Parking friendly	100	
7.Traffic jams	100	
8. Publicly accessible building	100	
9. Feeling of encolsure	100	
10. Bikable topography	100	
11. Density	100	
12. Mix of functions	100	
13. Access to everyday activities	100	
14. Access to event-type activities	100	
15. Access to a local transit stop	100	
16. Access to a regional transit stop	100	
17. Access to an regional expressway	y 100	
18. Bikable location (regionally)	100	

3. Press the set value, the new changed value is shown in Red rectangle areas and is received by CIM and used for further calculation.

1. Sidewalk design and continuity	100	100	
2. Walkable street layout	200	200	
3. Traffic calm street	100	100	1
4. Biking oriented street	300	300	
5. Transit oriented street	100	100	
6. Parking friendly	100	100	
7.Traffic jams	100	100	
8. Publicly accessible building	200	200	
9. Feeling of encolsure	100	100	
10. Bikable topography	100	100	
11. Density	200	200	
12. Mix of functions	100	100	
13. Access to everyday activities	100	100	
14. Access to event-type activities	300	300	
15. Access to a local transit stop	100	100	
16. Access to a regional transit stop	100	100	
17. Access to an regional expressway	100	100	
18. Bikable location (regionally)	100	100	

Step 4. Modify the value in Factors

Integration levels		Energy use kWh/pers	
Walking:	100	Transport energy use: Private car	
Cycling	100	Fossil fuels: Average consumption of fuel (1/100)	km) 95
	100	Fossil fuels % Average load (persons/vehicle)	95
Public transportation	1: 100	Swedish average: 6060 Percentage fossil fuels	0.95
Private car:	100	Average journey (km)	17.9
Sum:	Sum value	Swedish gasoline (kg CO2/l)	2.75
Sum of squares:	Sum of squares	Swedish gasoline (kW/l)	8.94
Modal shares Walking:	25%	Transport carbon emissions: Biological carbon: Biological carbon:	
Cycling:	25%	Swedish average: 1710	
Public transportation	1: 25%	Average consumption of fuel (1/100)	km) 40
Private car:	25%	Average load (persons/vehicle)	10
		Mobility classes	0.8
		Flâneurs: Swedish gasoline (km CO2/l)	2.75
Modal shares (sa	() ()	Cycling Advocates: Swedish gasoline (kW/l)	9.77
Moual shares (squ	ares)	Bus enthusiasts or trainspotters:	0.77
waiking: Cycling:	25%	Green Travelers:	
Cycling. Public transportation	25%	Rational Agents: show Energy use	
Private car:	25%	Dedicated motorists:	

1.press the Factors button, CIM will pop up a new Fator type in window.

2. Set the new parameters in the blue rectangle areas

stainable mobility indicators/urban form and accessibilit	y factors Set	
Urban form		
Is there a sidewalk?		
Is the street layout a grid with intersections?	1	
How wide is the city block?	100	
What is the speed limit in km/h?	30	
Are there parked bikes within eyesight?	1	
Are there parked bikes within eyesight?		
Is there a hike sharing in the huilding?		
Are there hike lanes on the street?		
Are there bus line/bus lane/busway/tramway on the street?	1	
Is there a bus top/tram stop on the street?	1	
Are there train station or metro exit within evesight?	1	
Is there parking in the building?	1	
Is there a carpool in the building?	1	
Is there a congestion on streets?	1	
How many floor does the building have?	2	
How wide is the street in meters?	10	
How far is the building entrance from the street in meters?	0	
Does the building has commercial ground floor?	0	
Is the building public?	1	
Is the building on a hill?	0	
Is the surrounding terraign hilly?		

Set Traffic Parameters

Sustainable mobility indicators/urban form and accessibility factors

Accessibility	
How far is the closest grocery or supermarket in meters?	100
How far is the closest retail shop or services in meters?	100
How far is the closest coffee shop, bar or restaurant in meters	100
How far is the closest square or other public space in meters	100
low far is the closest religious or cultural buildings in meters	100
How far is the closest sports or recreational facilities in meters	100
How far is theclosest parks in meters	100
How far is the local transit stop in meters?	100
low often do the buses or trams go in minutes during rush hour?	3
How far is the regional transit stop in meters?	100
How often do the buses or trains go in minutes during rush hour?	3
low far is the building from the city center in kilometers?	5

Х

3. Press the Set button, the new updated value will shown in the Red rectangle areas.

stainable mobility indicators/urban form and accessibili	cy factors	
Urban form		
Is there a sidewalk?		٦
Is the street layout a grid with intersections?	1 1	
How wide is the city block?	100 100	
What is the speed limit in km/h?	30 30	
Are there parked bikes within eyesight?	1	
Are there parked bikes within eyesight?		
Is there a hike sharing in the building?		
Are there hike lanes on the street?	1 1	
Are there bus line/bus lane/busway/tramway on the street?	1 1	
Is there a hus ton/tram ston on the street?	1 1	
Are there train station or metro exit within evesight?	1 1	
Is there parking in the building?	1 1	
Is there a carpool in the building?	1 1	
Is there a congestion on streets?	1 1	
How many floor does the building have?	2 2	
How wide is the street in meters?	10 10	
How far is the building entrance from the street in meters?	0 0	
Does the building has commercial ground floor?	0 0	
Is the building public?	1 1	
Is the building on a hill?	0 0	
Is the surrounding terraign hilly?	1 1	
ic Parameters		
stainable mobility indicators/urban form and accessibilit	y factors	
Accessibility		
How far is the closest process or supermarket in meters?	100 100	
How far is the closest retail shop or services in meters?	100 100	
How far is the closest coffee shop, bar or restaurant in meters	100 100	
How far is the closest square or other public space in meters	100 100	
The second stand of the second stands and the second stand stands and the second stands	100 100	
How far is the closest religious or cultural buildings in meters	100	
How far is the closest square of other public space in meters How far is the closest religious or cultural buildings in meters How far is the closest sports or recreational facilities in meters	100	-
How far is the closest square of other public space in meters How far is the closest religious or cultural buildings in meters How far is the closest sports or recreational facilities in meters How far is theclosest parks in meters	100 100 100	
How far is the closest square of other public space in meters How far is the closest religious or cultural buildings in meters How far is the closest sports or recreational facilities in meters How far is theclosest parks in meters How far is the local transit stop in meters?	100 100 100 100 100 100	
How far is the closest square of other public space in meters How far is the closest religious or cultural buildings in meters How far is the closest sports or recreational facilities in meters How far is the local transit stop in meters? How often do the buses or trams go in minutes during rush hour?	100 100 100 100 100 3	

Step 5. Calculate and Analysis the Urban mobility Certificates

1. Press the calculate button

Integration levels		Energy use kWh/pers			
Walking: 100		Transport energy use: Private car			
Cycling:	100	Fossil fuels: Average consumption of fuel (I/100k	. m) 95		
Public transportation	100	Fossil fuels % Average load (persons/vehicle)	95		
Public transportation	100	Swedish average: 6060 Percentage fossil fuels	0.95		
Private car:	100	Average journey (km)	17.9		
Sum:	Sum value	Swedish gasoline (kg CO2/I)	2.75		
Sum of squares:	Sum of squares	Carbon emissions Swedish gasoline (kW/l)	8.94		
Modal shares		Piological carbon			
Walking:	25%	Biological carbon %			
Cycling:	25%	Swedish average: 1710			
Public transportation: 25%		Average consumption of fuel (I/100k	m) 40		
Private car:	25%	Average load (persons/vehicle)	10		
		Mobility classes	0.8		
		Average journey (km)	15		
		Cucling Advocatory	2.75		
Modal shares (squa	ires)	Swedish gasoline (KW/I)	9.77		
Walking:	25%	Green Travelers			
Cycling:	25%	Pational Agents: show Energy use			
Public transportation:	25%	Dedicated motorists			
Private car:	25%	show Carbon emissions			

2. All the new calculated data will show in the Blue rectangle areas.

👼 Set Traffic Parameters

Integration levels		Energy use	kWh/per	s	venicies	
Walking: Cycling: Public transportation: Private car: Sum: Sum: Sum of squares:	146.6000000000002 193.200000000000 109.3200000000001 123.3000000000001 449 50801	Transport energy use Transport energy us Fossil fuels: Fossil fuels % Swedish average:	e: 1727.251 1435.262 1.203439 6060.0	5 16703786193 21380846326 18862688532	Private car Average consumption of fuel (//100 Average load (persons/vehicle) Percentage fossil fuels Average journey (km) Swedish gasoline (kg CO2/l) Swedish gasoline (kW/l)	95 95 0.95 17.9 2.75 8.94
Modal shares Walking: 0.2761692 Cycling: 0.2672605 Public traus 0.2338530 Private car: 0.2227171	6503340755 79064588 0668151449 4922049	Transport carbon er Biological carbon: Biological carbon % Swedish average: Mobility classes	nissions: 4 4 5 1 1	95.4899777282851 95.4899777282851 .0 710.0	Public bus Average consumption of fuel (I/10(Average load (persons/vehicle) Percentage fossil fuels)km) 40 10 0.8
Modal shares (sq ia Walking: Cycling: Public transportation: Private car:	res) 0.3026712072596996 0.2834589870278144 0.2170232869431704 0.1968465187693155	Flâneurs: Cycling Advocates: Bus enthusiasts or t Green Travelers: Rational Agents: Dedicated motorists	arainspotter	107.32 119.47000000000001 s: 123.07000000000001 116.17000000000002 107.32 112.25	Swedish gasoline (kg CO2/l) Swedish gasoline (kg CO2/l) Swedish gasoline (kW/l) show Energy use	2.75 9.77
Form Fact	ors Calculate	Form2	2. Factors2	3. Calculate2	show Mobility classes	

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Estimated modal split (proportional)

💩 Set Traffic Parameters



Estimated modal split (sum of squares)



Energy use (kWh/person/year)



Carbon emissions (kg CO2/person/year)





How would mobility classes perceive the environement?

Level of integration (LoI)/Integrationsnivå

