Parametric Skins

Melilla Central MarketRefurbishment
Ángel Verdasco Arquitectos

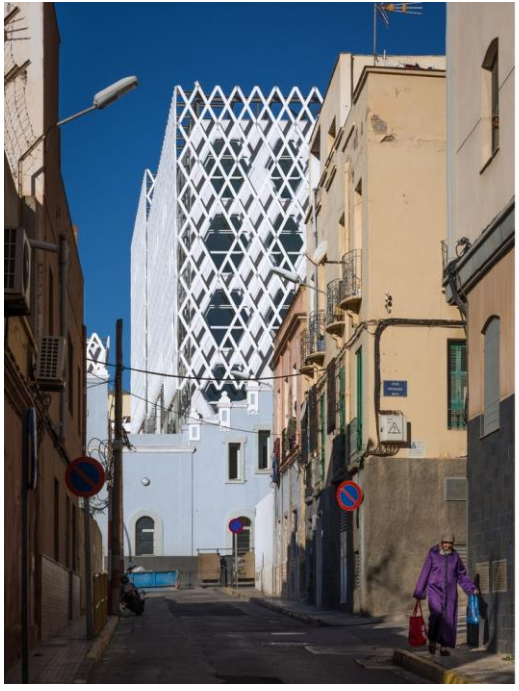
TUTORS: Rodrigo Aguirre
ASSISTANT: Ashkan Foroughi Dehnav

STUDENT: Rana Ibrahim

Institute for advanced architecture of Catalonia

Melilla is a small Spanish city bordering Morocco located in North Africa. The closing of the Central Market in 2003, after 90 years of operation, left a completely abandoned area in the city.

Architecture is displayed as a tool for multicultural environments and acceptation of an identity diversity: 1600 student activating the neighborhood again. We worked with both memory and identity. The city is regenerated by keeping the old market and enhancing meeting places through squares and lobbies. The Market is relocated in the collective imaginary in order to allow citizens to appropriate it.





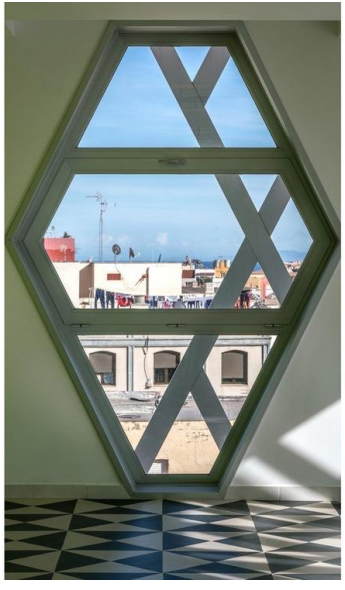
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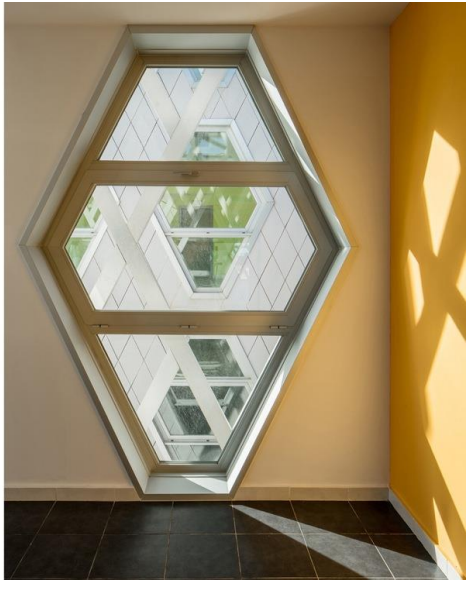
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Reprogramming the city: new programs grow vertically into a new structure due to the difficulties of charging big loads over an old market without any foundation. Over the solid preexistence, a new light intervention grows. Local materials are reinterpreted and adapted to local climate: ventilated facade (ceramic) and a lattice (aluminum and ceramic joints) with different density according to the orientation.





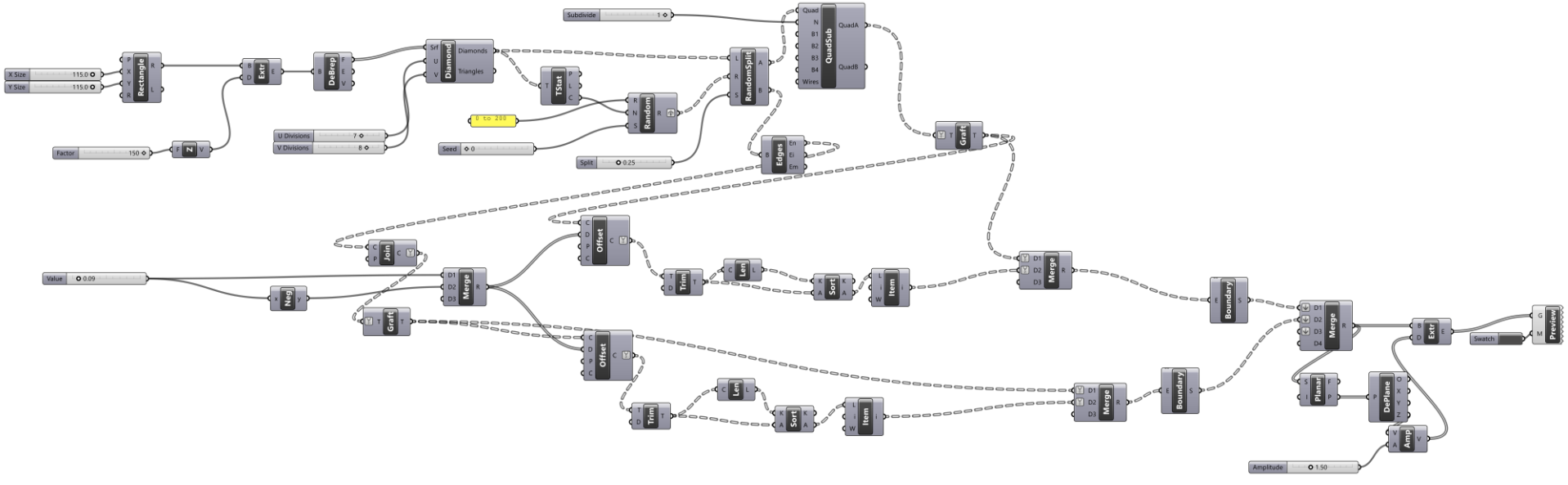


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Script



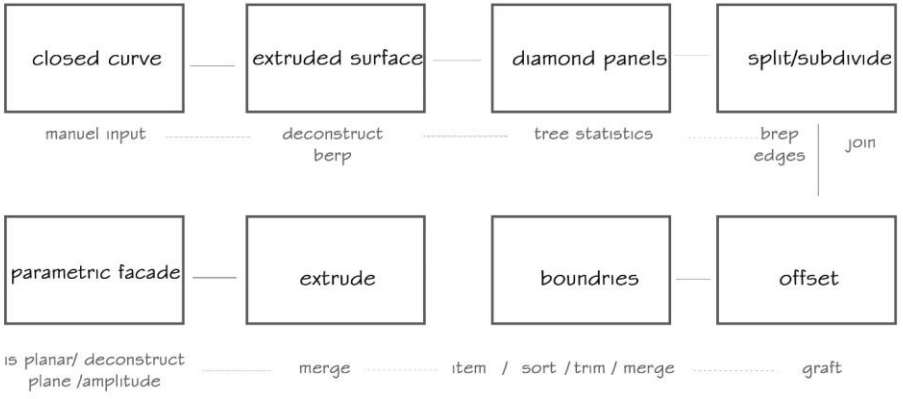
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Pseudo code



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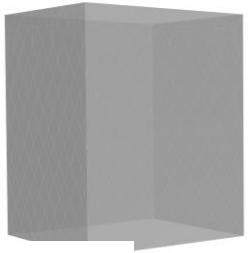
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code development

1, closed polyline



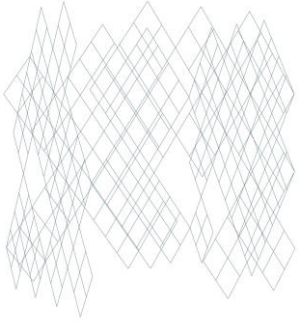
2. Extruded polyline



3. Deconstruct berp / diamond pattern

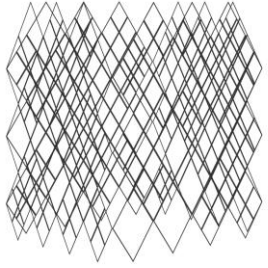


4. Tree static / random split



5. Subdivide Quad / graft

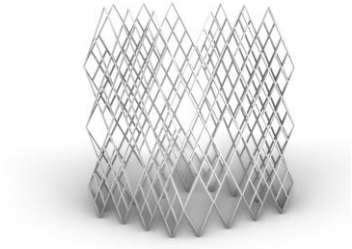
6. Extract the edges curve of a berp /join / graft



7. /offset /trim/ list then create boundries



7. Is planar /deconstruct the planar and extrude on amplitude vectors



7. /offset /trim/ list then extrude boundries

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Iaac

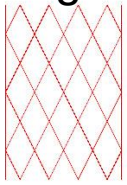
Component development diagram



construct closed poly surface



instal diamond panels and grid



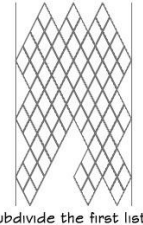
modify them with tree statics

starting from the pseudo - code the translation and defenition of the final design has reached
here is the main outline :
1- construct a closed poly (rectangle) then extrude it to surface and deconstruct the berp .
2-generate diamond pannels and modidy yhem with tree statistics and split the pannels randomly
3- subdivide the pannels to 2 lists one with one with subdivide quad and the other with extract berp edges and join then graft both lists .
4-offset the pannels with two dirction (negative and positive) then trim and sort the lists into iteme
5-merge the resulted list with the main subdiviions and create boundries .
6- merge the boundries and create is planar then deconstruct it to extrude all the boundries in the same direction without intersections .
7- then extrude the boundries using amplitude .



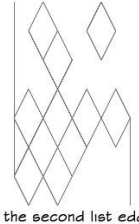
split them randomly

1



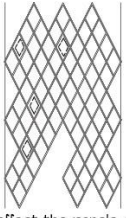
then subdivide the first list of panels randomly with subdivide Quad

2

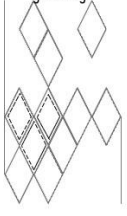


extract the second list edges using Berp edges (then join them)

3

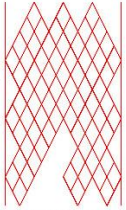


then offset the panels on both sides negative+positive after grafting



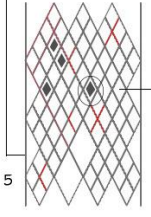
then offset the panels on both sides negative+positive after grafting

4

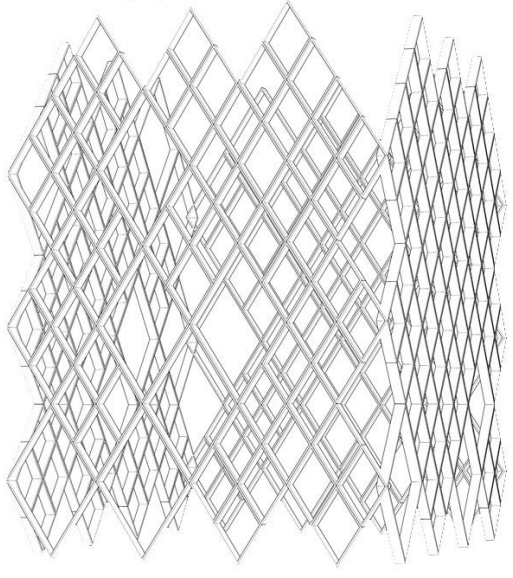


after trimming and sorting grid we create bondries for the pannels

5



extrude the boundries using planar and planar deconstruction and amplitude in z direction



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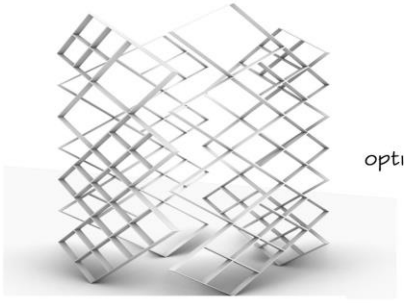
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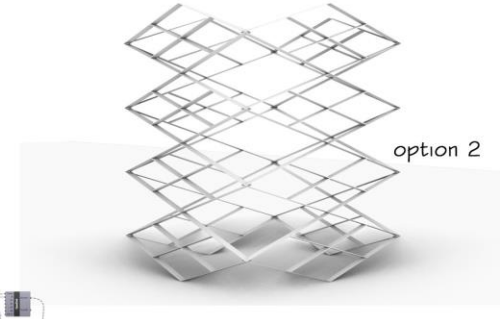
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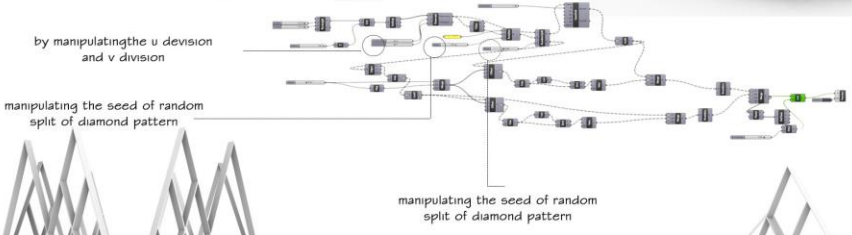
Configurations of the parametrized model

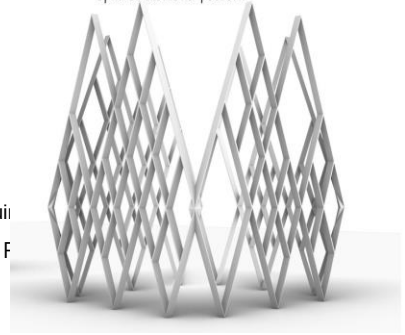


option 1

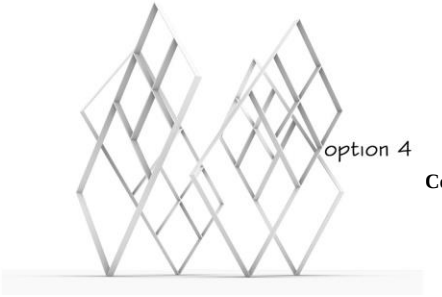


option 2





option 3



option 4

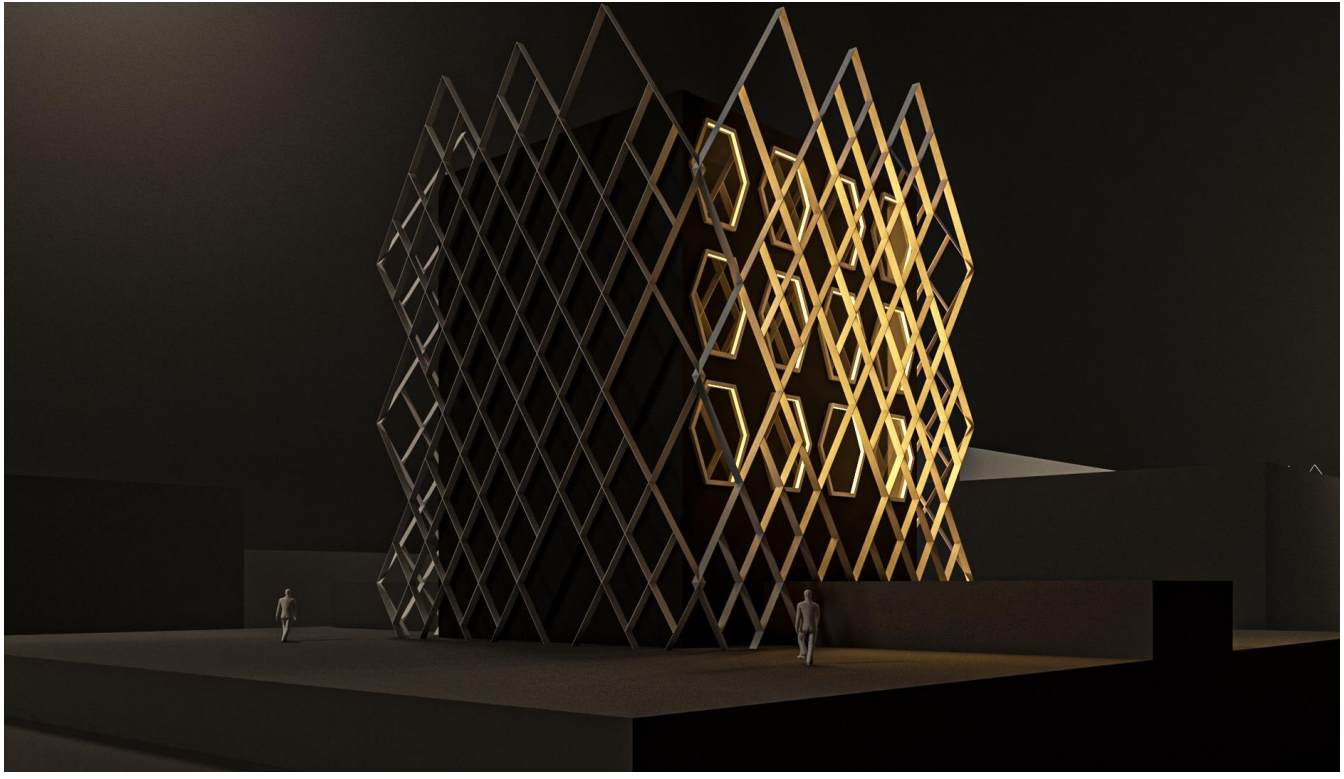
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Final result



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notes

- References :

- https://docs.google.com/presentation/d/1bZzhRu_HiBBNR0qiOnUo-y7uFQMqugIQcbvpjdPq-UM/edit#slide=id.ga3e2efcff5_2_120
- https://www.archdaily.com/909810/melilla-central-market-refurbishment-angel-verdasco-arquitectos/5c45308a284dd1f771000007-melilla-central-market-refurbishment-angel-verdasco-arquitectos-photo
- https://www.archdaily.com/909810/melilla-central-market-refurbishment-angel-verdasco-arquitectos/5c4530cb284dd1497d00000a-melilla-central-market-refurbishment-angel-verdasco-arquitectos-photo