

# Makers Bazaar

A system to revitalize the urban infrastructure  
of the Zaatri Refugee camp

Group 1

Abhishek Holla

Anastasia Florou

Daniel Simon

Leonardo Caldogni

Max Ketelaar

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# Introduction

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# Problems and Potentials

- lack of urban structure, informal growth of the camp
- unbalanced distribution of infrastructure
- inefficient education system
- camp as an enclosed community detached from the surroundings (segregation)
- poor architectural quality due to scarcity of resources

Problems

- skills and mercantile drive of the refugees
- less dense plots near some of secondary roads
- different densities of commercial and other activities
- presence of different vehicular connections and logistic hubs

Potentials

## Design goals

Provide a **system** that could help restructure the urban fabric.

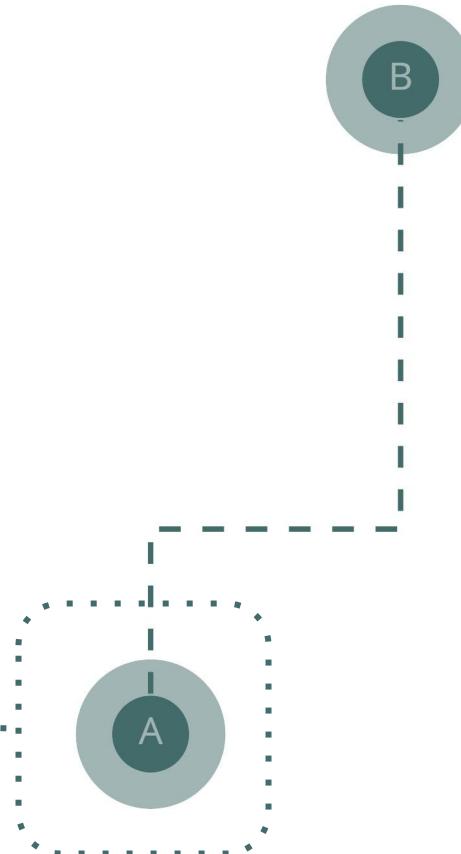
Contribute to the improvement of education and **development of new skills**.

Provide the **means** to improve the architectural quality of the camp.

# Design proposal: Makers Bazaar

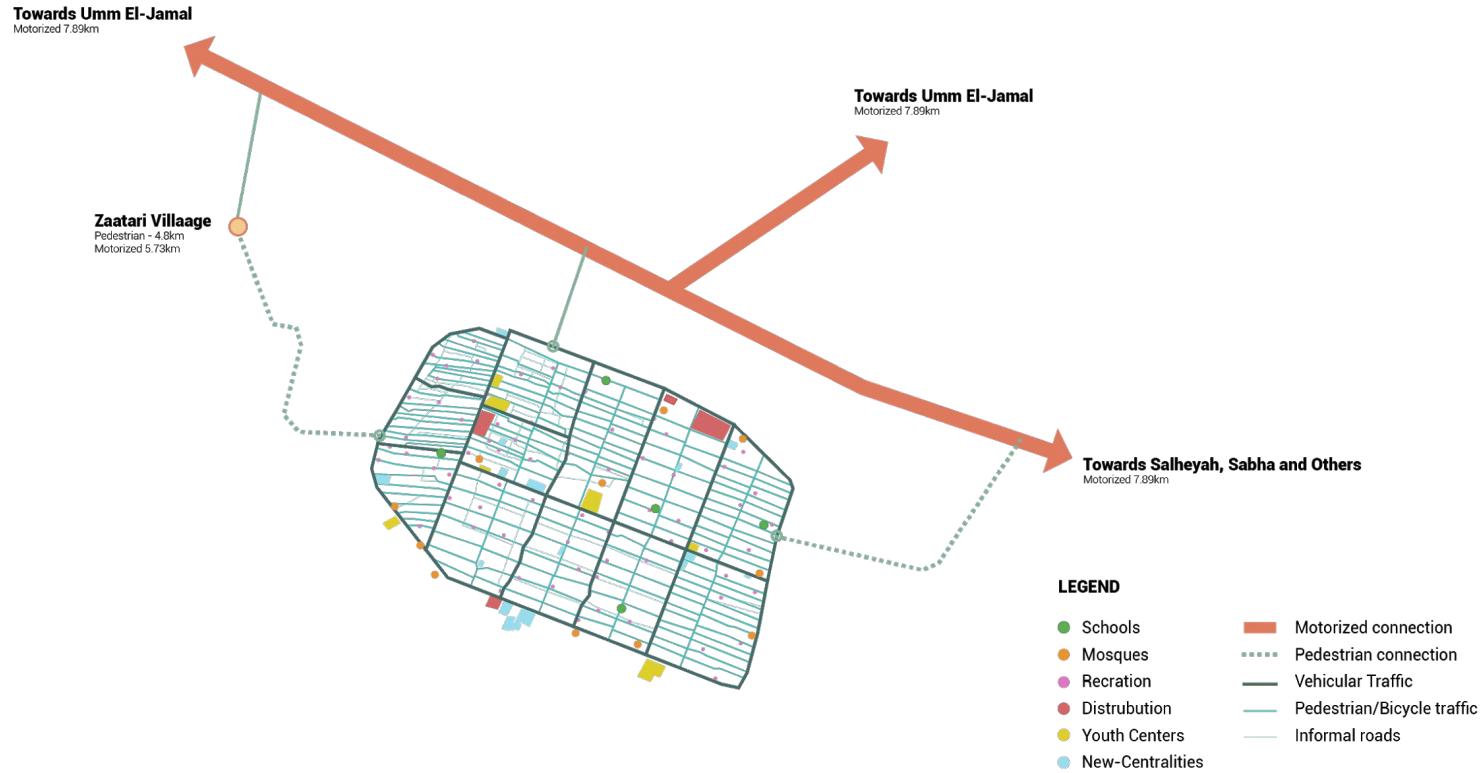
Individuate **new centralities** in the camp and build a **system**, using the typology of the Bazaar, that could gradually **connect** these elements like neurological network.

Design one of these centralities (node) and the related urban effect on the camp. We want to focus on the design of a **Bazaar that combines its commercial and social functions with a brick makers space**.

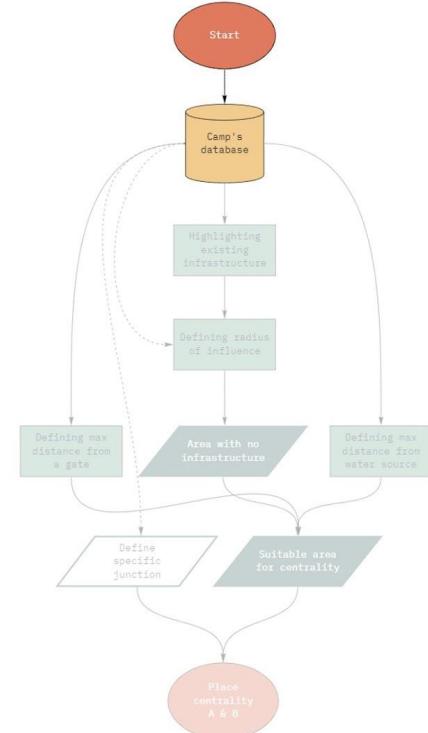


# Configuring

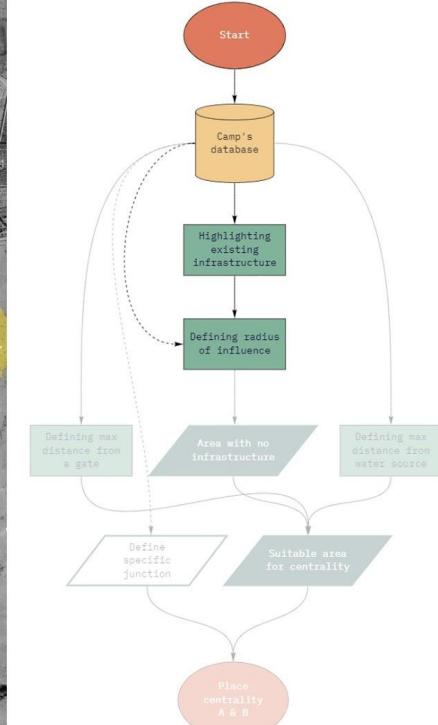
# Urban scale - Analysis



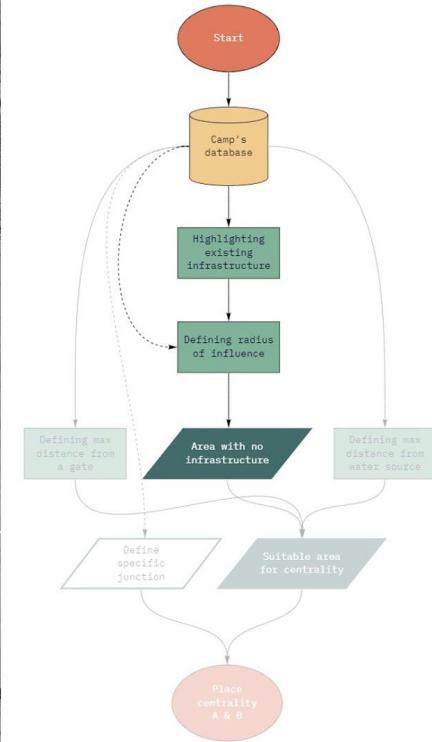
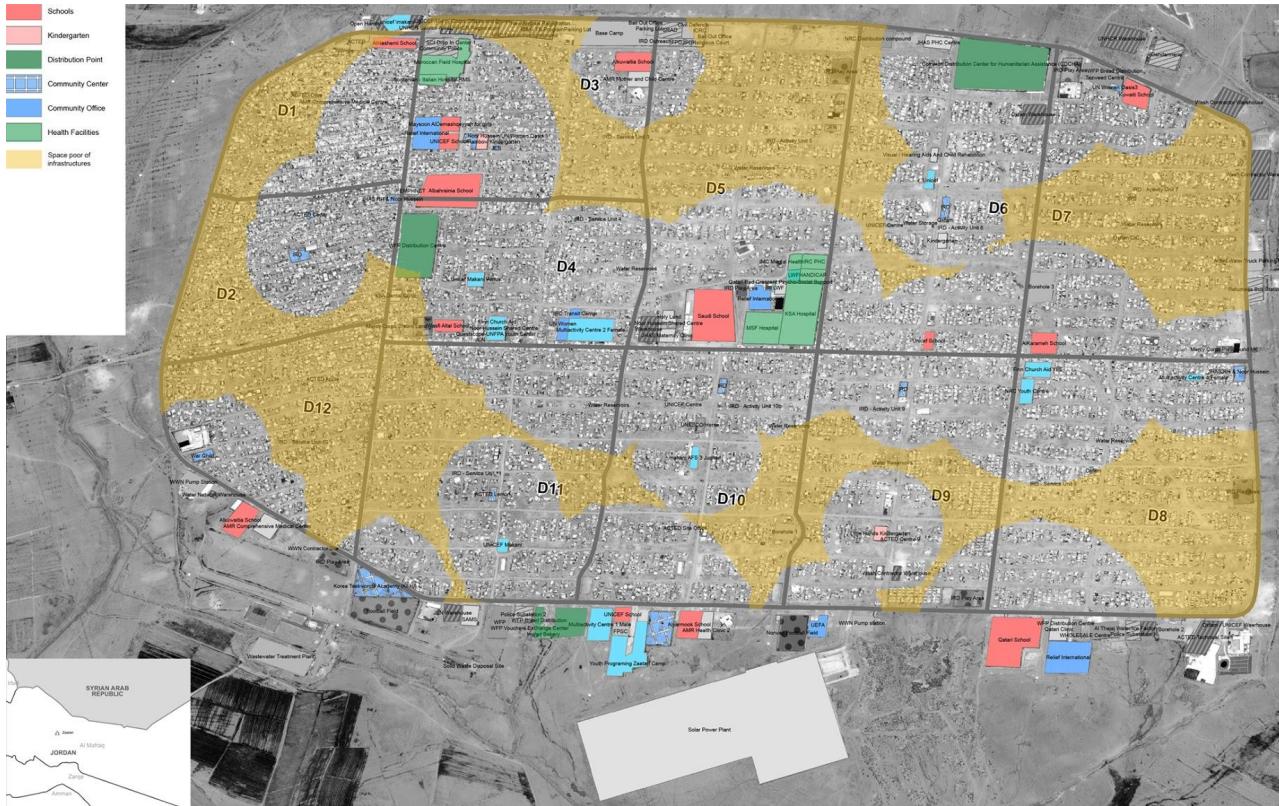
# Urban scale - Placing Centralities



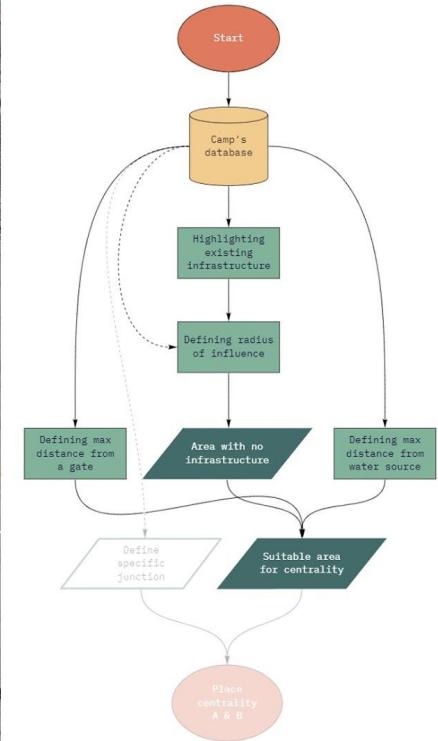
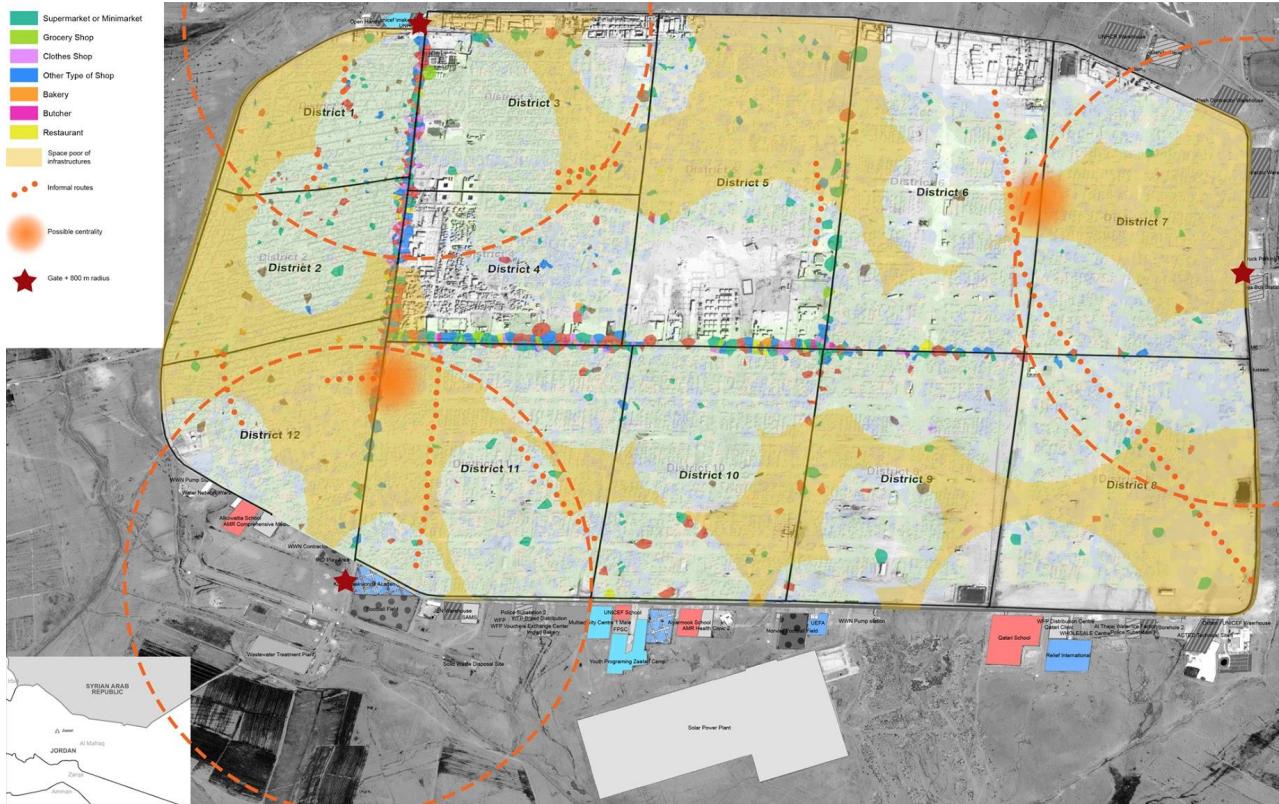
# Urban scale - Placing Centralities



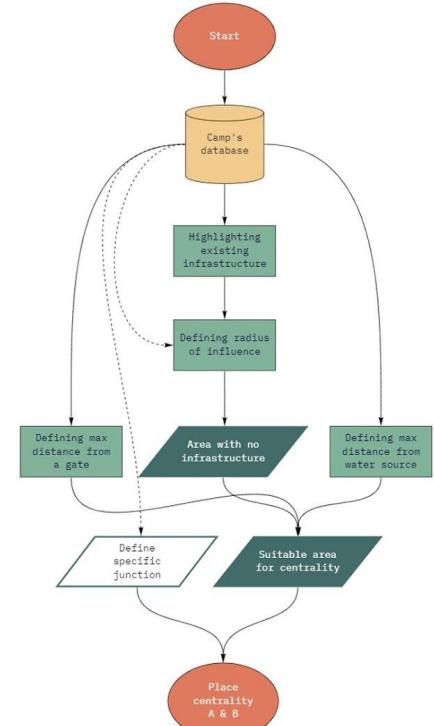
# Urban scale - Placing Centralities



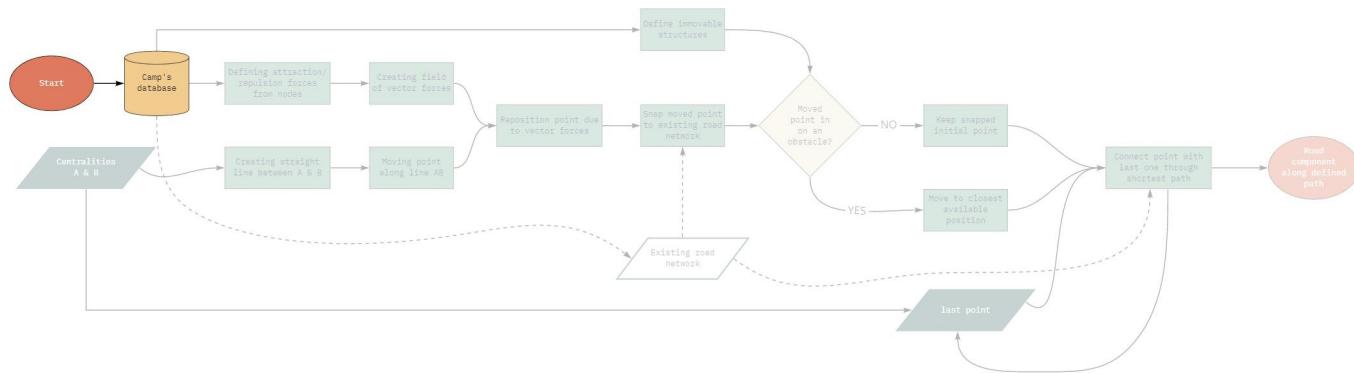
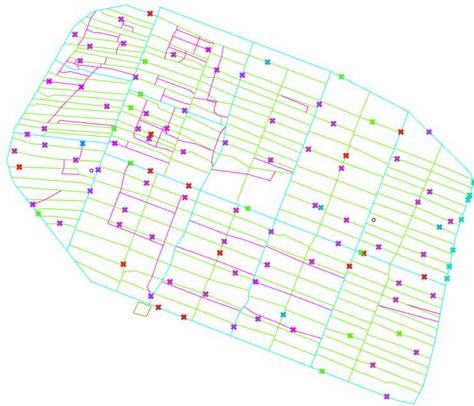
# Urban scale - Placing Centralities



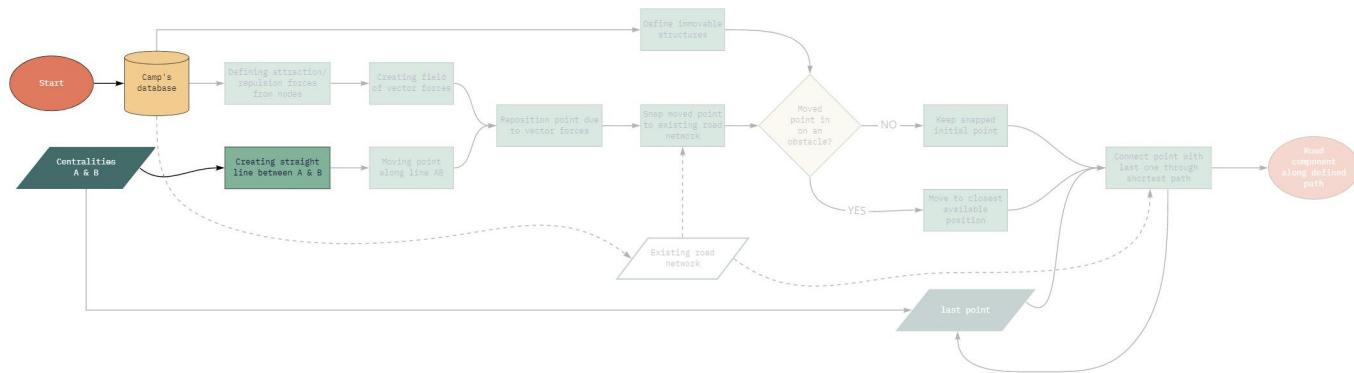
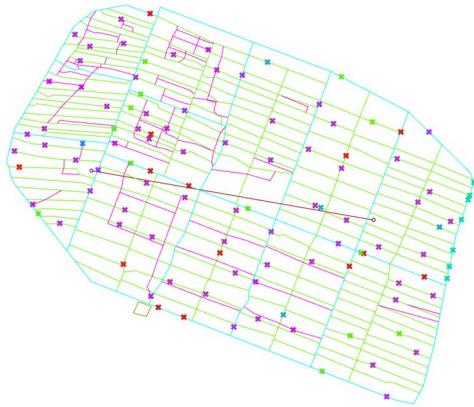
# Urban scale - Placing Centralities



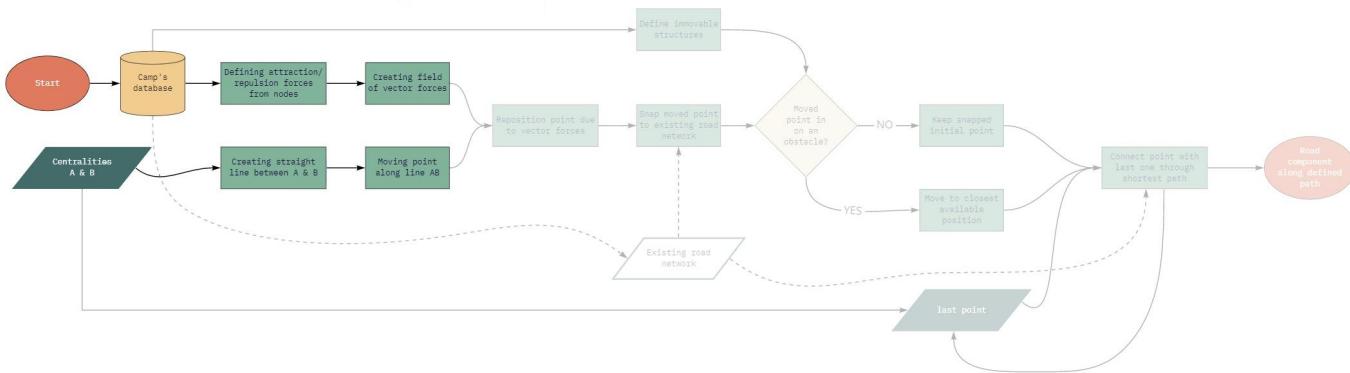
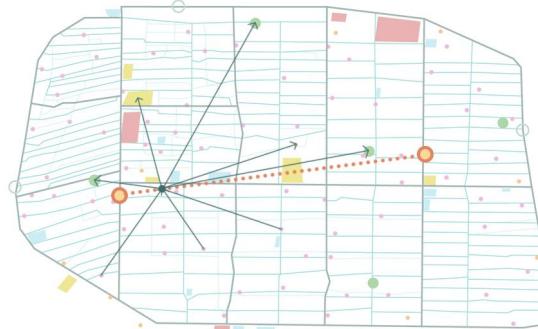
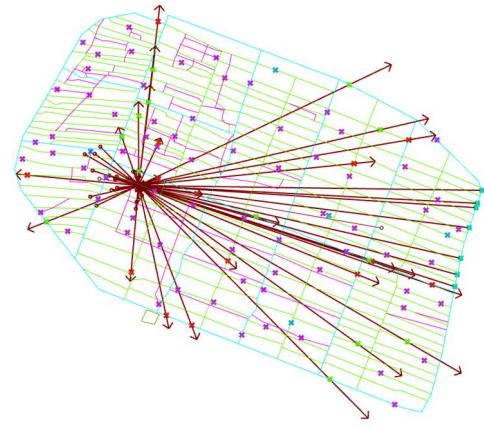
# Urban scale - Expansion Strategy



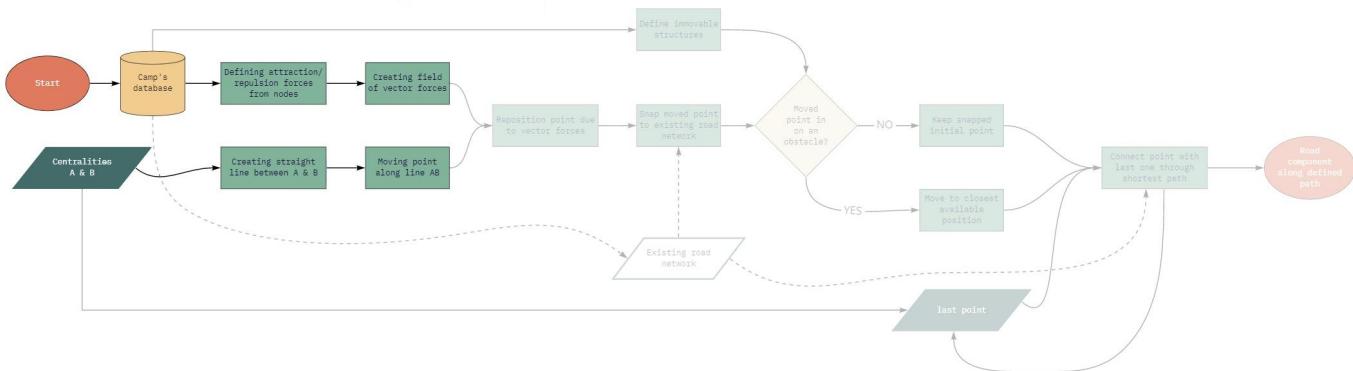
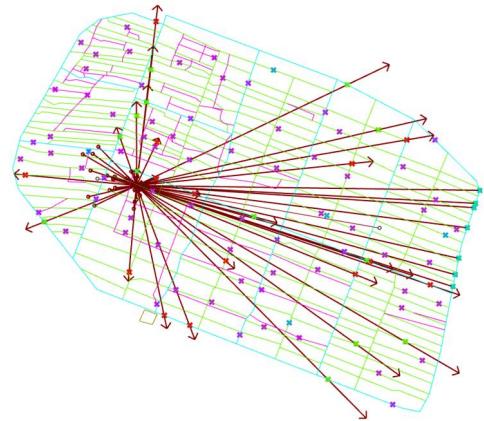
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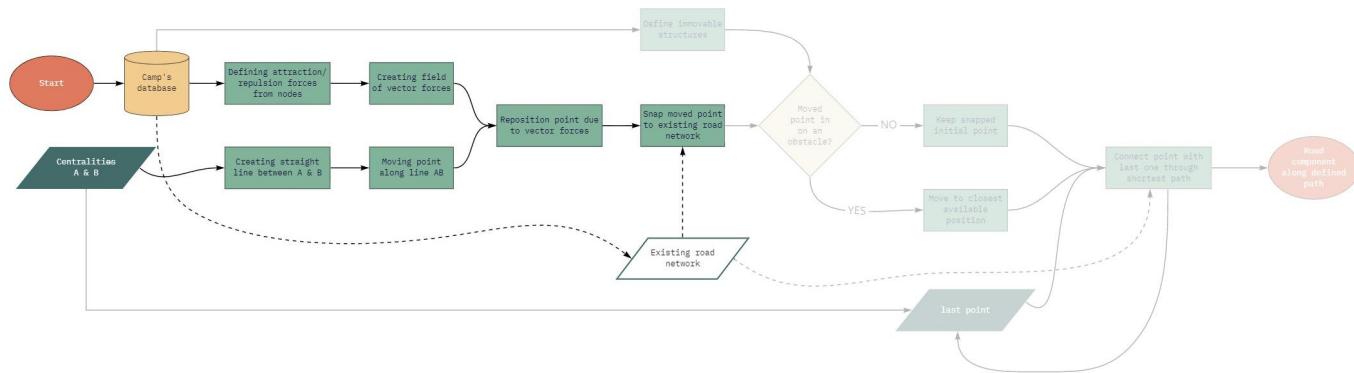
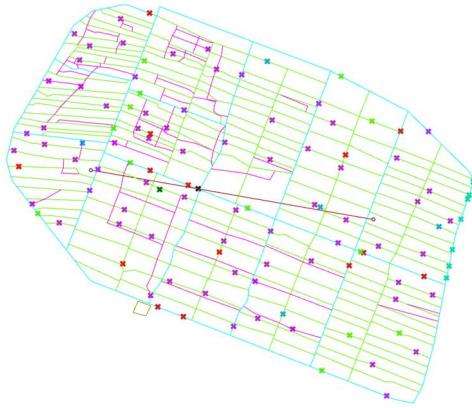
## Attraction forces

- Youth centers (1.0)
- Distribution centers (2.0)
- New proposed functions (1.5)

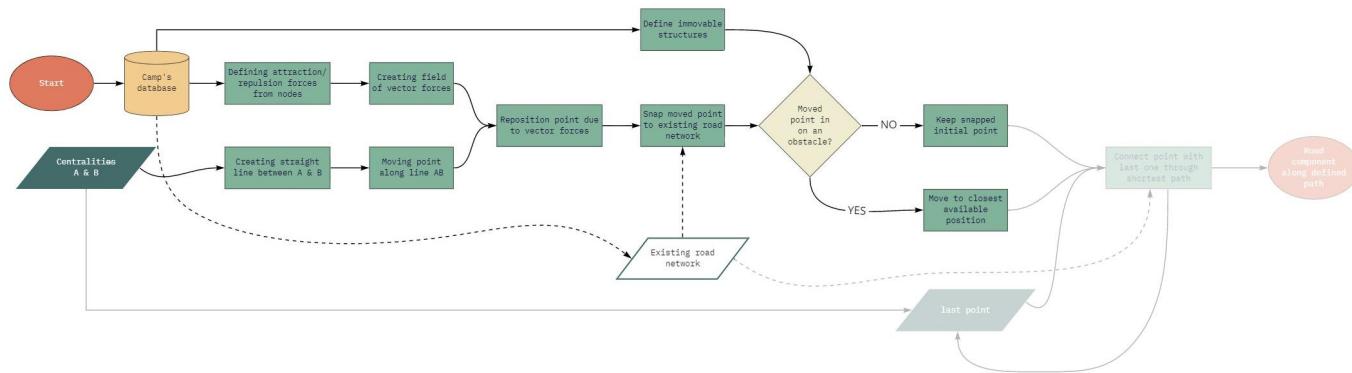
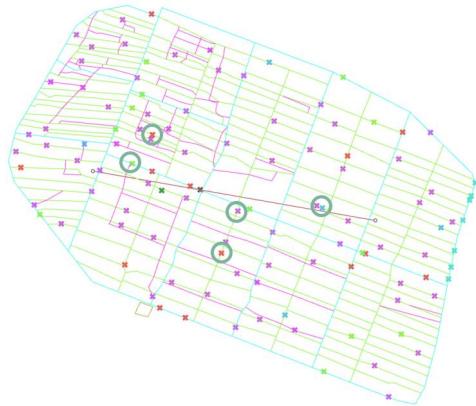
## Repulsion forces

- Schools (1.5)
- Mosques (1.0)
- Wellness center (2.0)

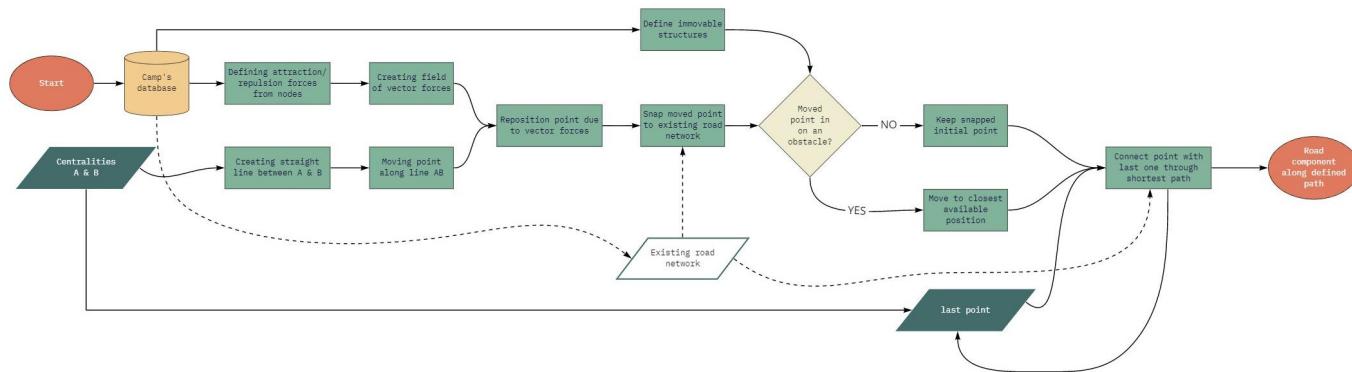
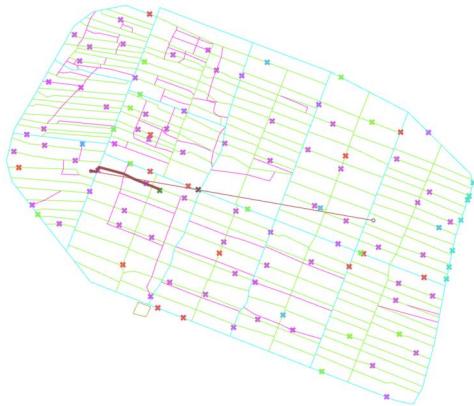
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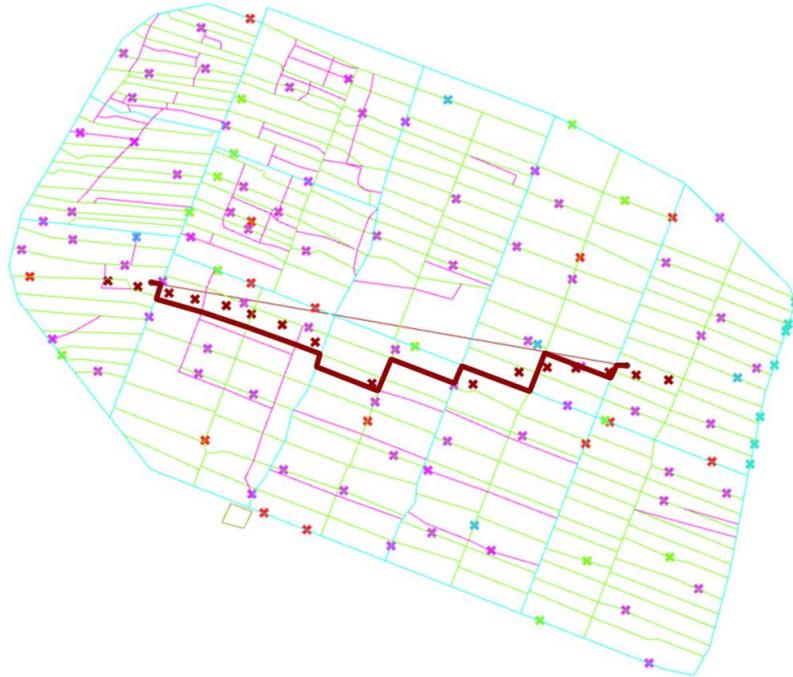
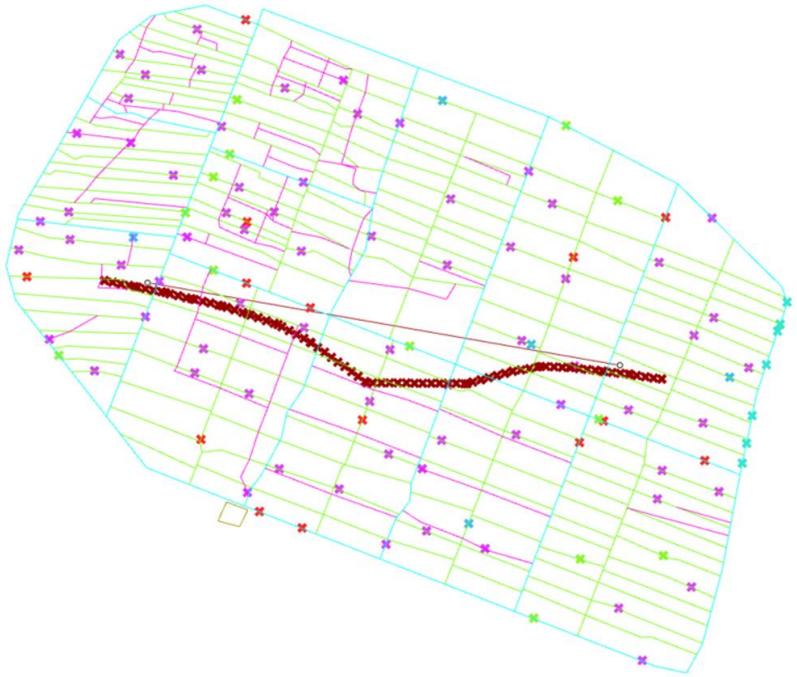
# Urban scale - Expansion Strategy



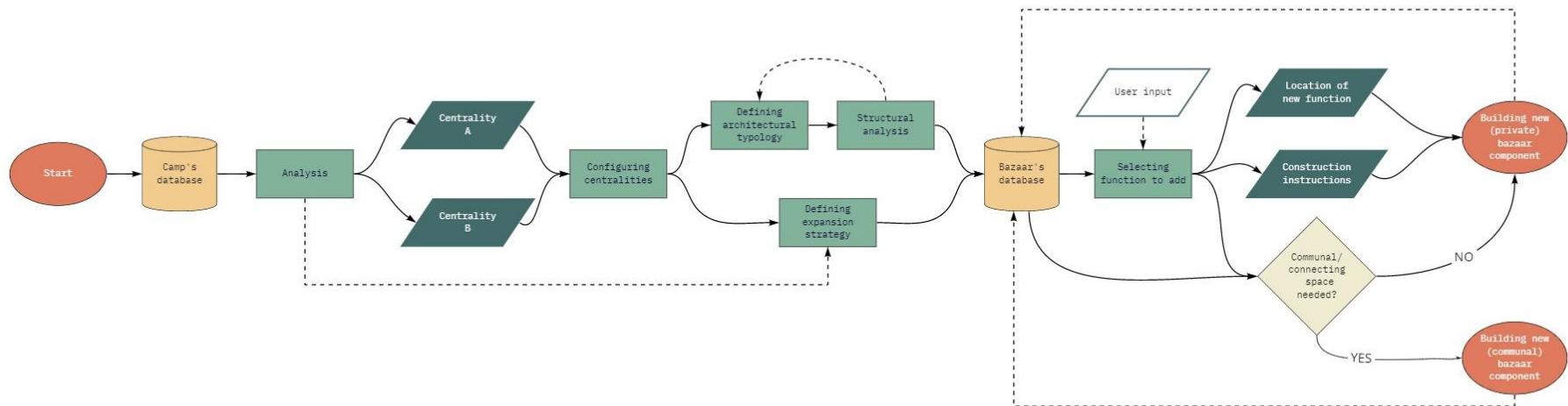
# Urban scale - Expansion Strategy



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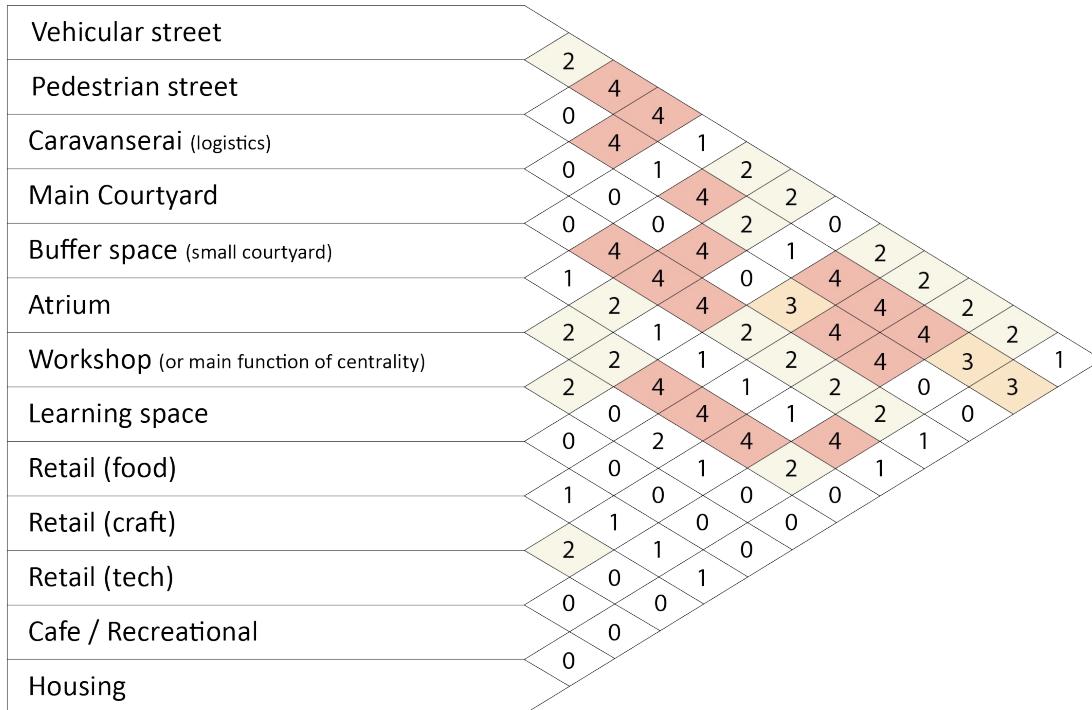
# Overall flowchart



# Program - Table of functions

		Area (m2)	Noise (generation)	Definition of space	Open/semi-closed/closed (to sky)	ceiling height	Day light intensity	Accessibility	Open hours	Main Function
Commercial	Food retail	10-14m2	yes	Fixed	closed	2.7m	low	public	During the day	Yes
	Craft	20m2	yes	Fixed	closed	2.7m	low	public	During the day	Yes
	Tech	10m2	yes	Fixed	closed	2.7m	low	public	During the day	Yes
	'Café / Restaurant	10-40m2	yes	Fixed	closed	2.7m	low	public	During the day	Yes
Logistics	Caravanserai	400m2	yes	Modular	semi-closed	(if roof 5)	high	Private	Always	Yes
	Access to Road	x	yes	x	open	x	high	Public	During the day	No
	Storage (workshop)	60m2	no	Fixed	closed	2.7m	zero	Private	Never	No
	Storage (shop)	7m2	no	Fixed	closed	2.7m	zero	Private	Never	No
Others	Atrium	200m2	yes	Modular	semi-closed	6-10m	medium	Public	During the day	Yes
	Learning space	150m2	no	Modular	closed	3.2m	high	Semi-public	During the day	Yes
	Workshop	200m2	yes	Fixed	semi-closed	4m	high	Semi-public	During the day	Yes
	Housing	30m2	no	Modular	closed	2.7m	medium	Private	x	No
Connectors	Buffer space	50m2	yes	Modular	open	x	high	Public	During the day	No
	Courtyard	100m2	no	Modular	open	x	high	Semi-public	During the day	No
	Passageway	x	yes	x	closed	6-8m	low	Public	During the day	Yes

# Program - REL Chart



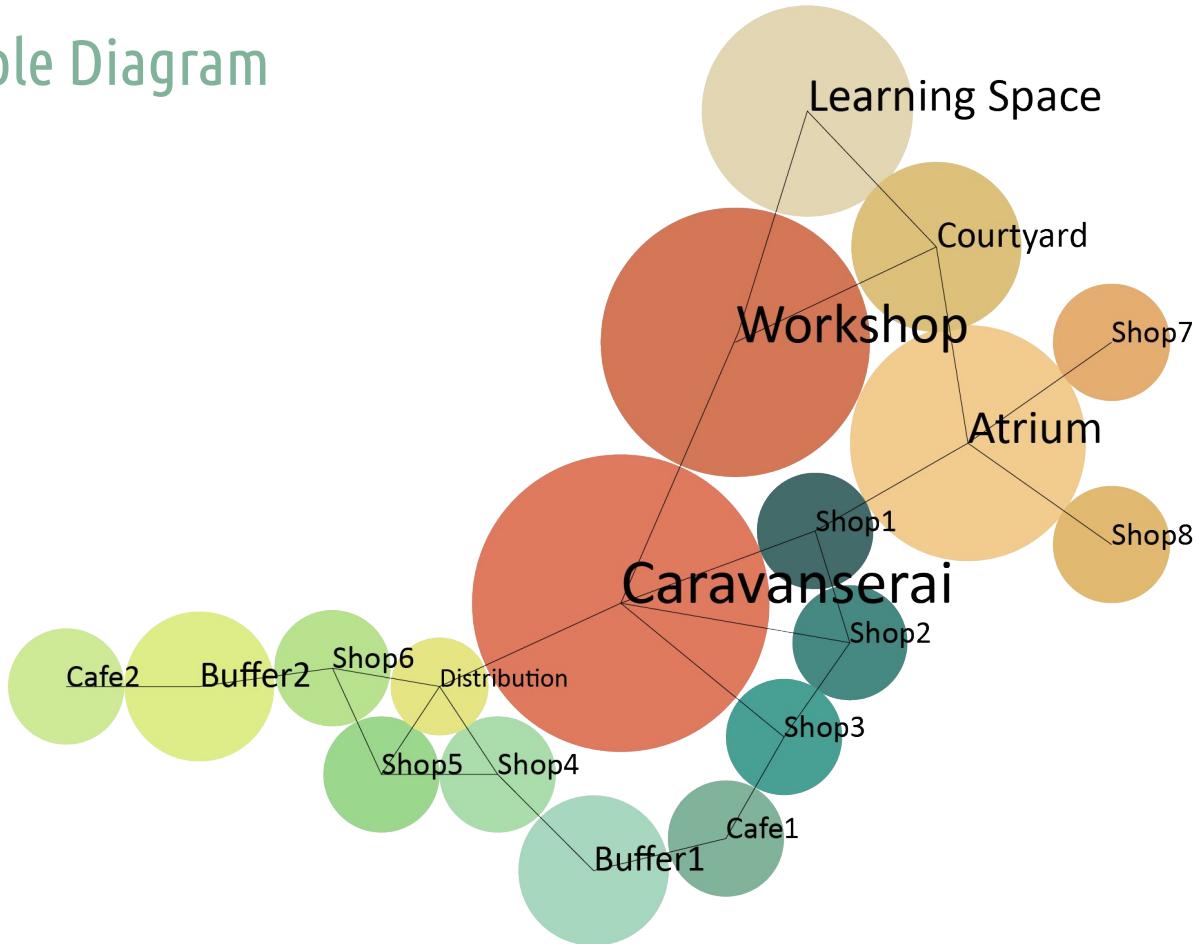
## Strong Connections

Caravanserai - Workshop  
 Caravanserai - Vehicular road  
 Atrium - Pedestrian road  
 Atrium - Main Courtyard  
 Atrium - Shops

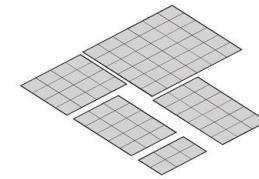
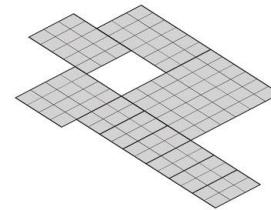
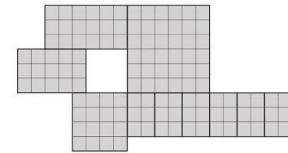
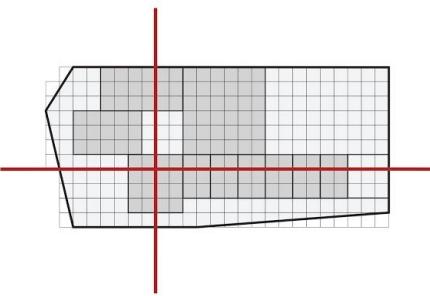
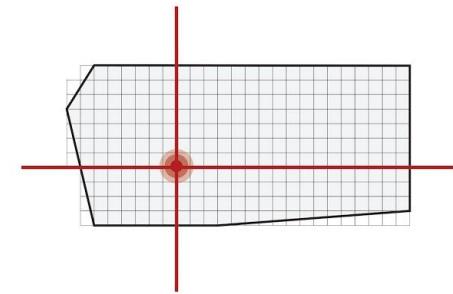
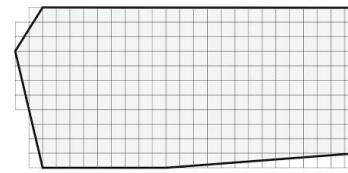
## Rules

Main axis of caravanserai free  
 Every corner a buffer space  
 Every buffer space a cafe  
 Workshop and Learning space linked by courtyard  
 Every 6 shops a courtyard  
 Every 30 shops a caravanserai

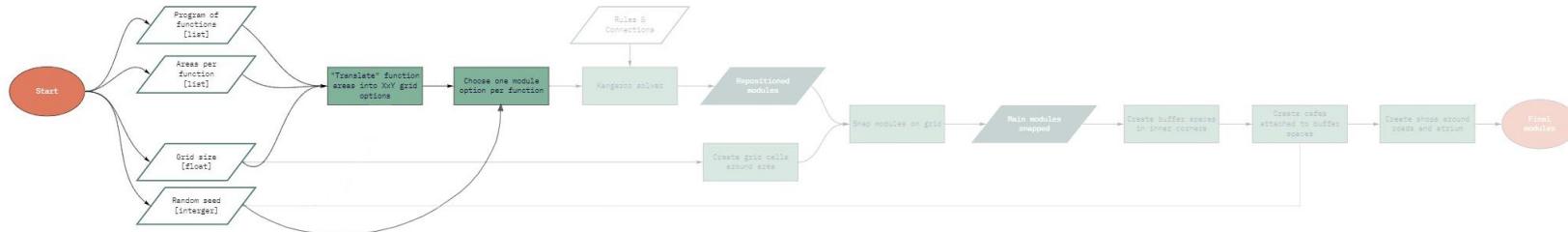
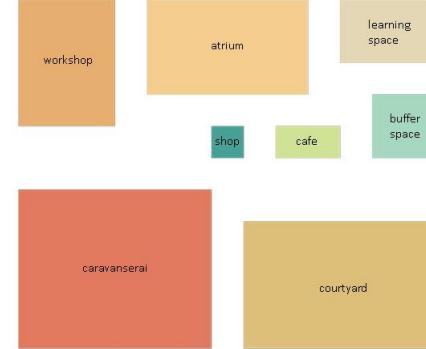
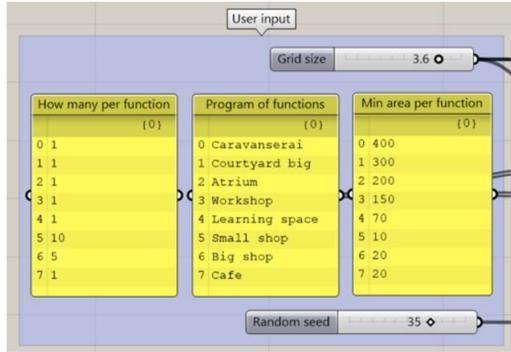
# Program - Bubble Diagram



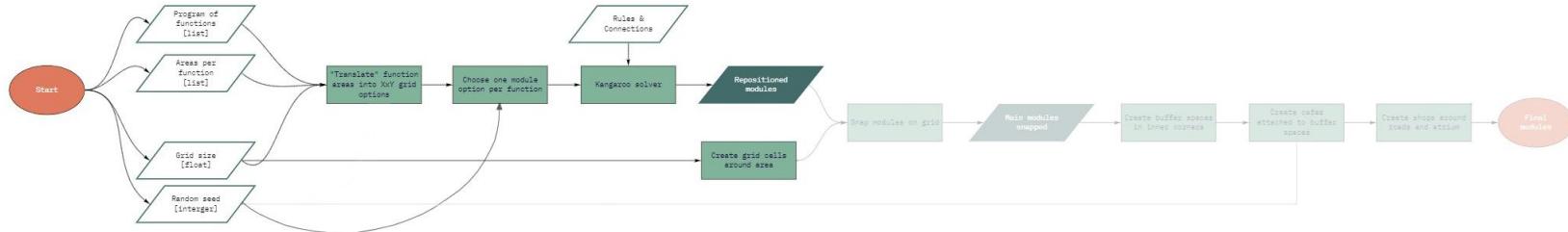
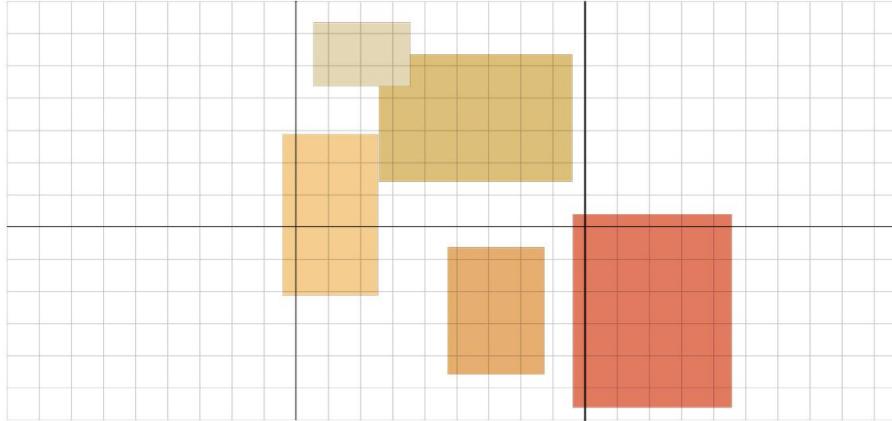
## Layout - Concept



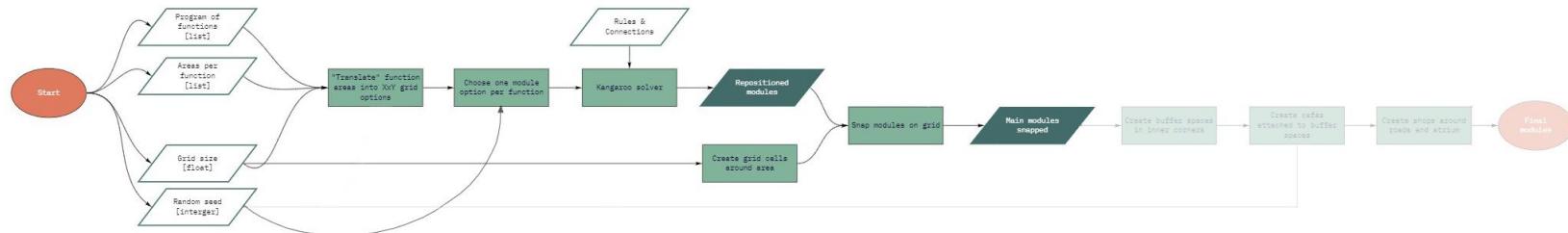
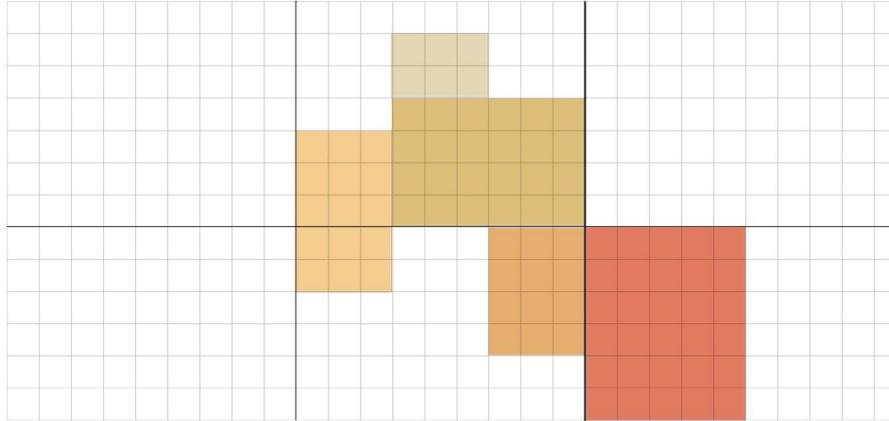
# Layout - Layout tool



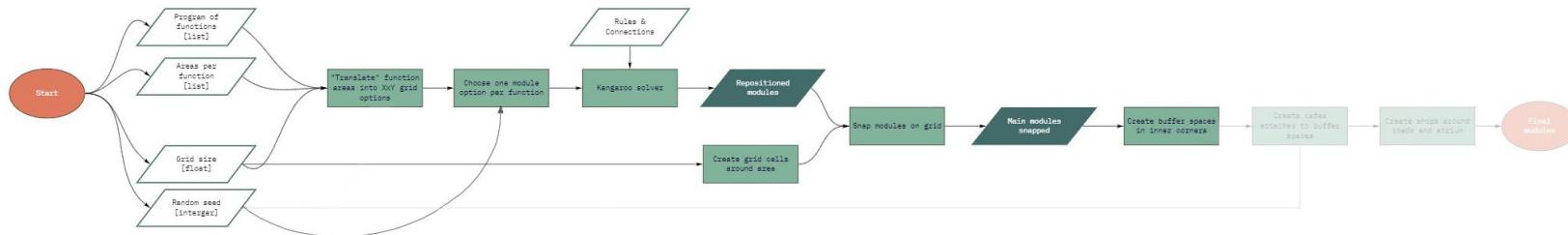
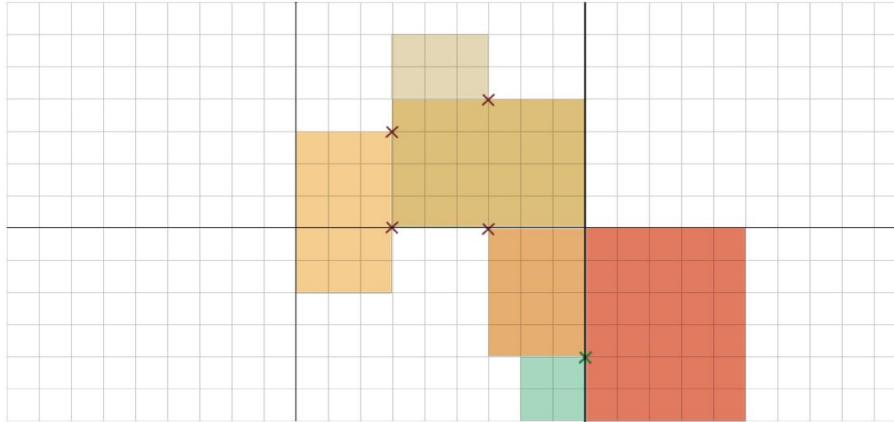
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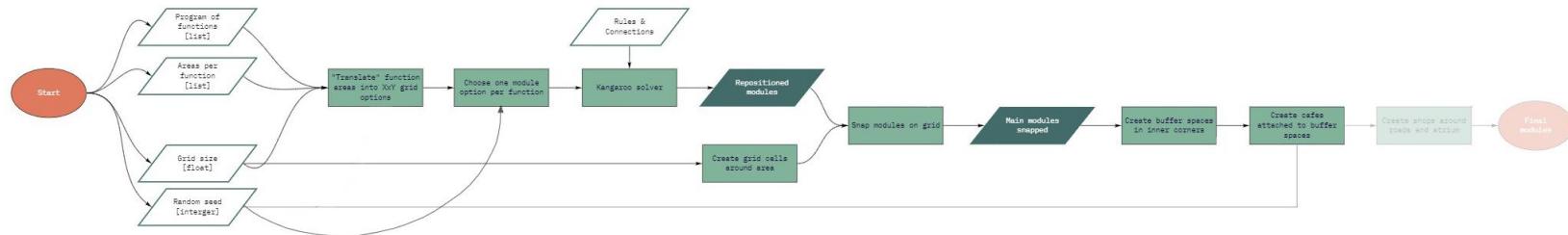
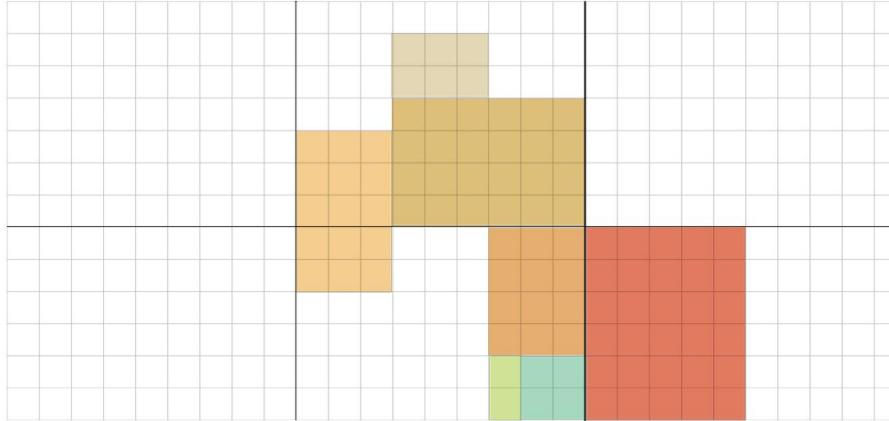
# Layout - Layout tool



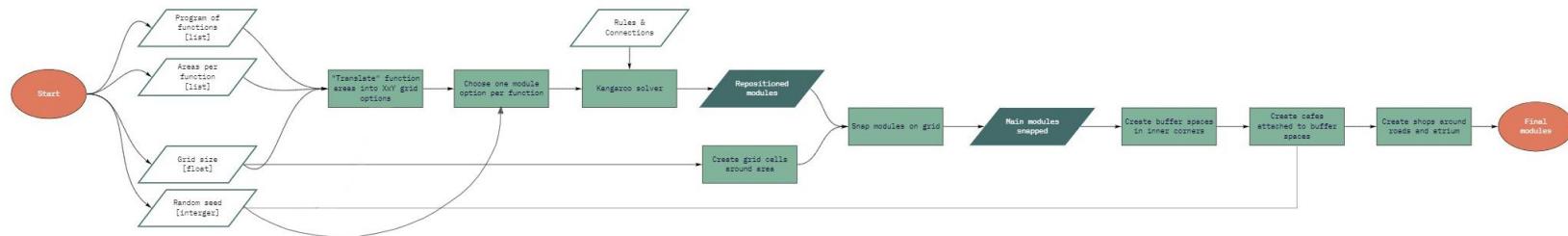
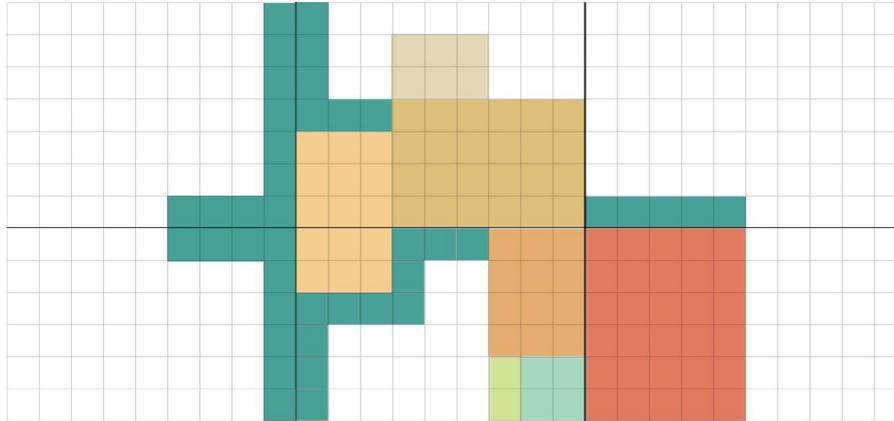
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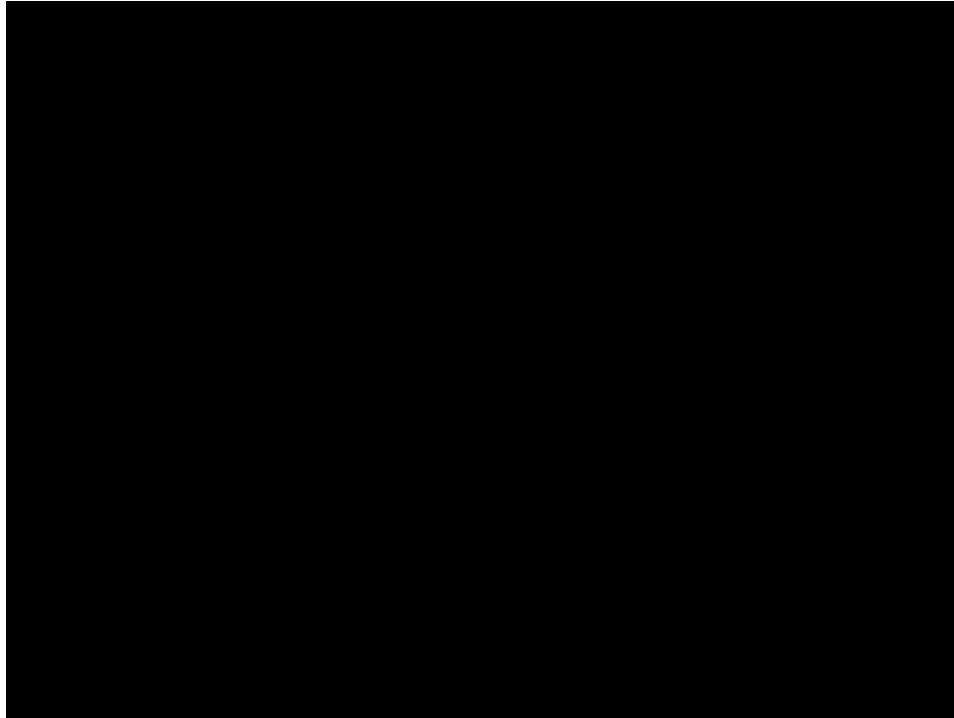
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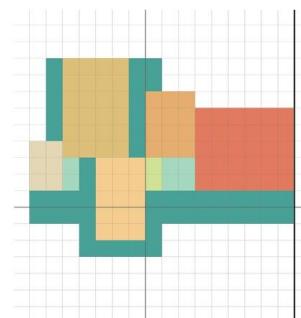
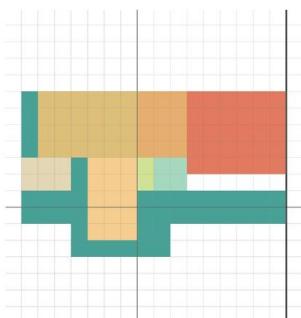
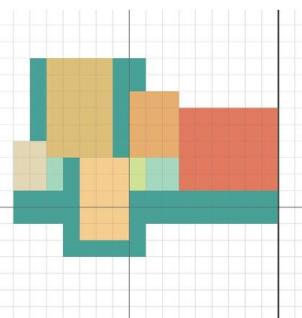
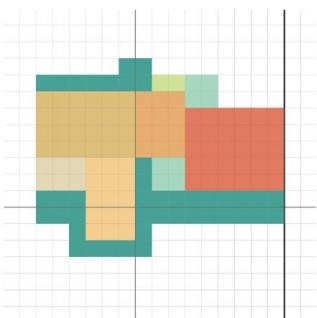
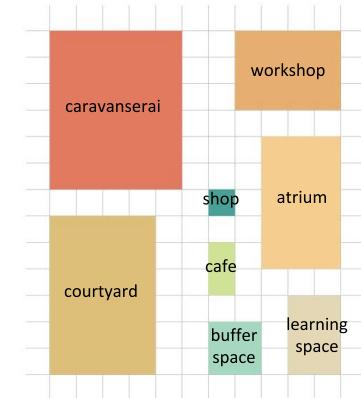
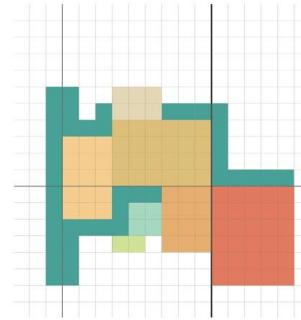
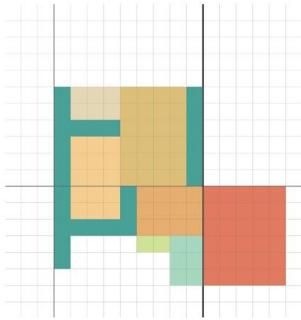
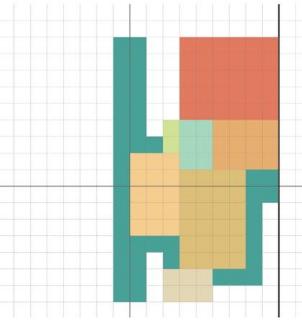
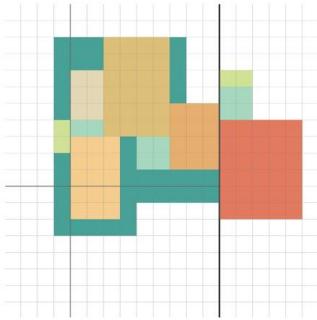
# Layout - Layout tool



## Layout - Layout tool

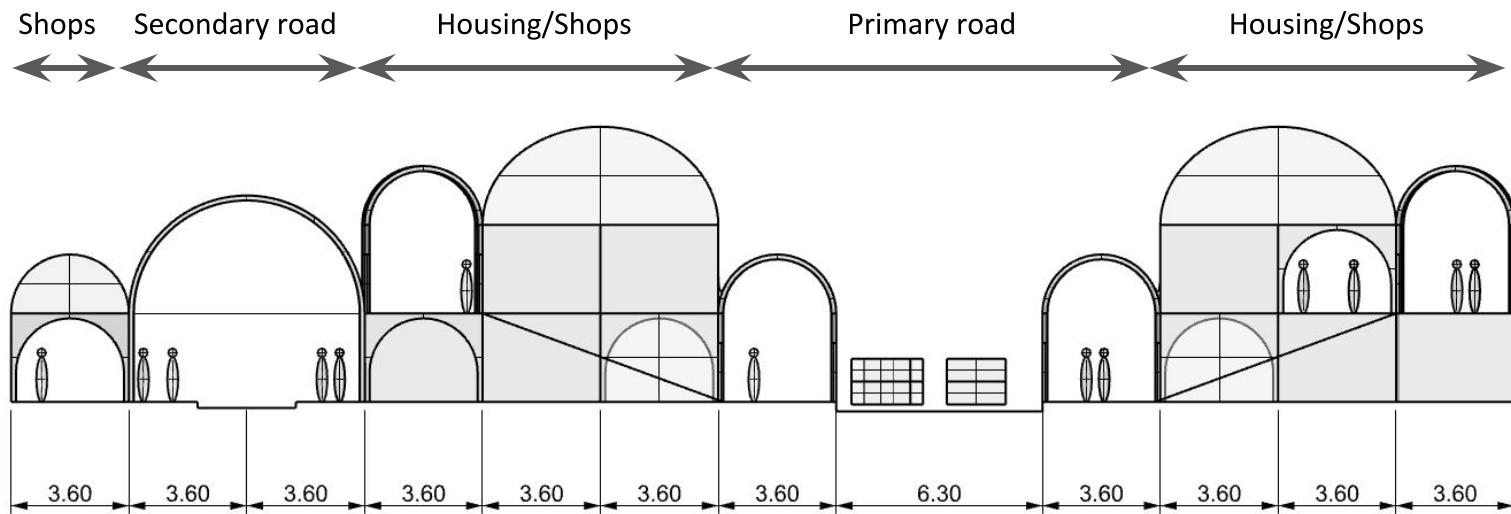


# Layout - Layout alternatives



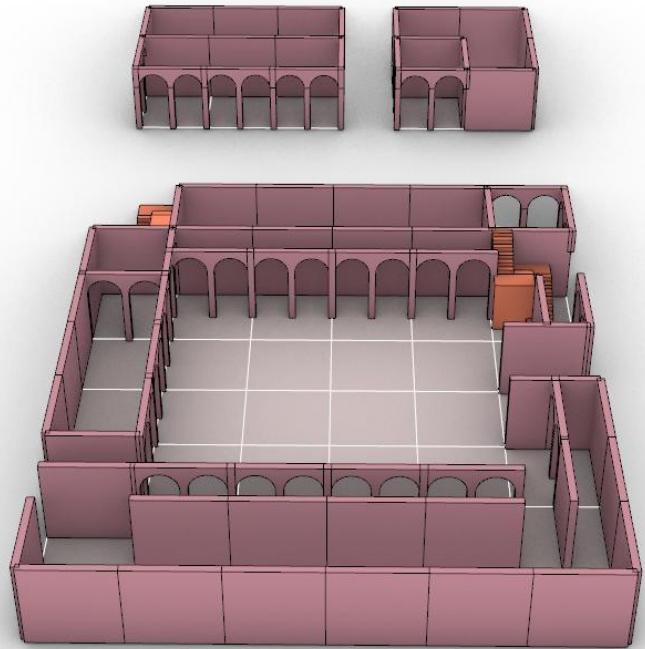
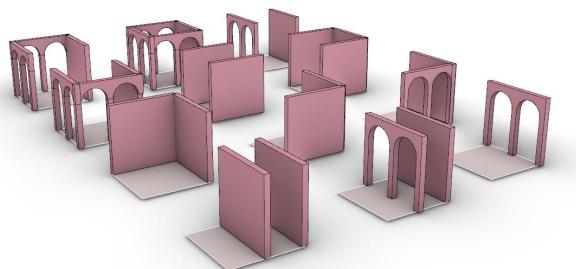
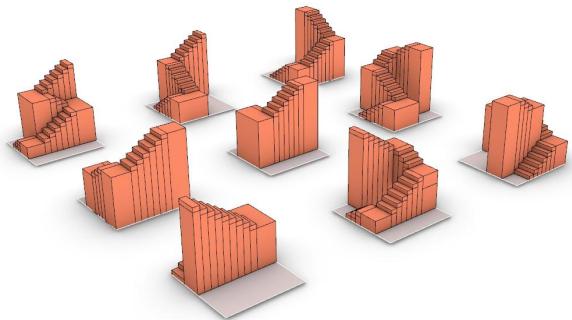
# Shaping

# Building system - Typical streetscape

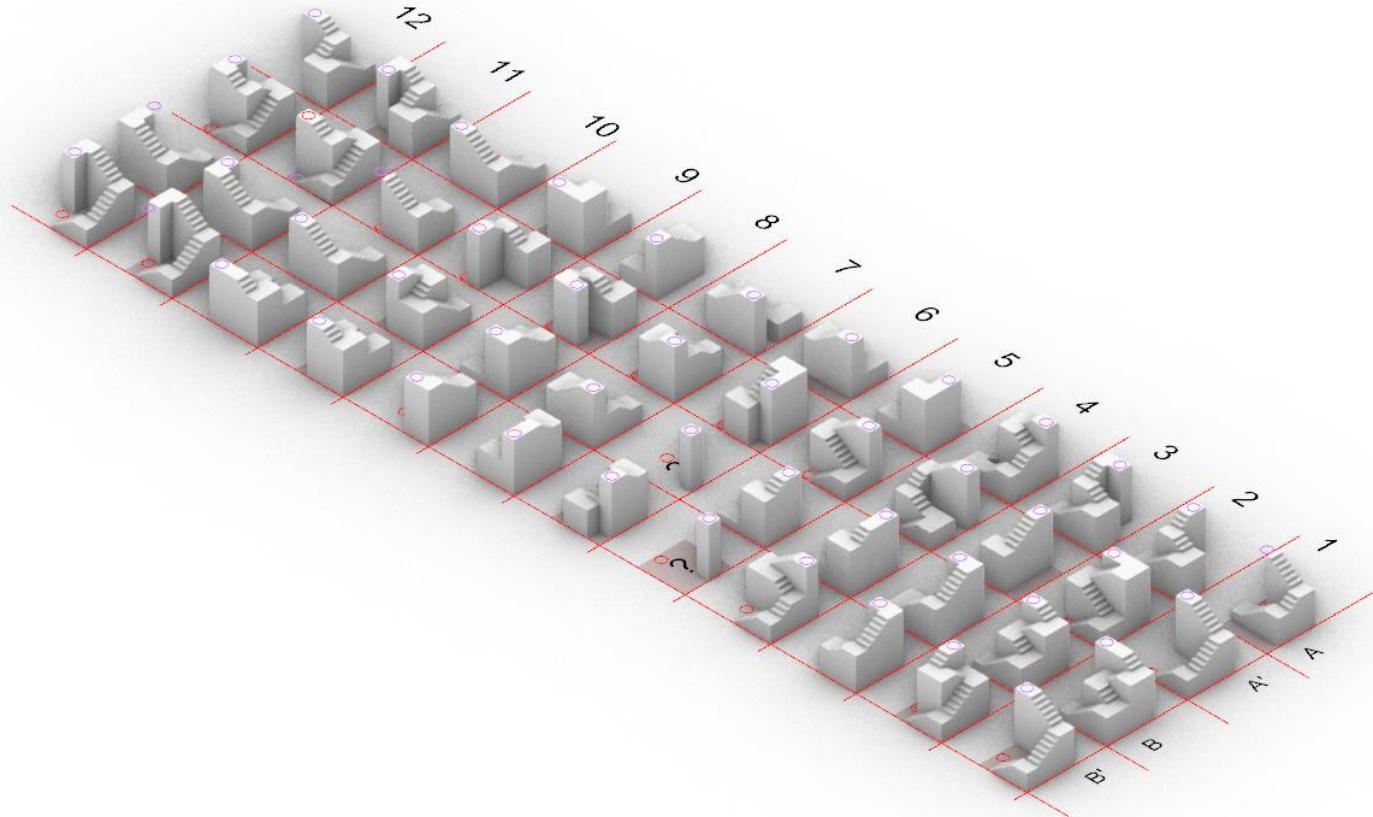


Grid-based modular system for standard spaces

# Building system - Building elements

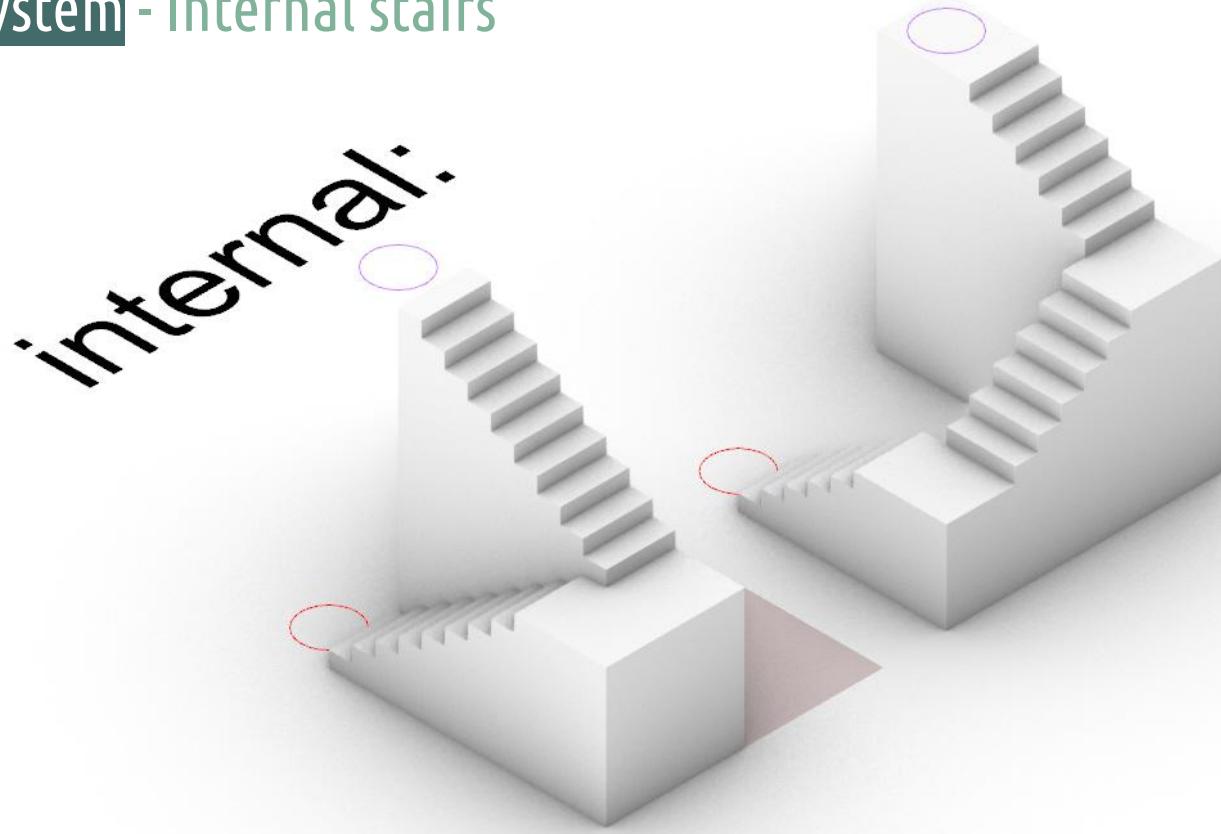


## Building system - Stair modules

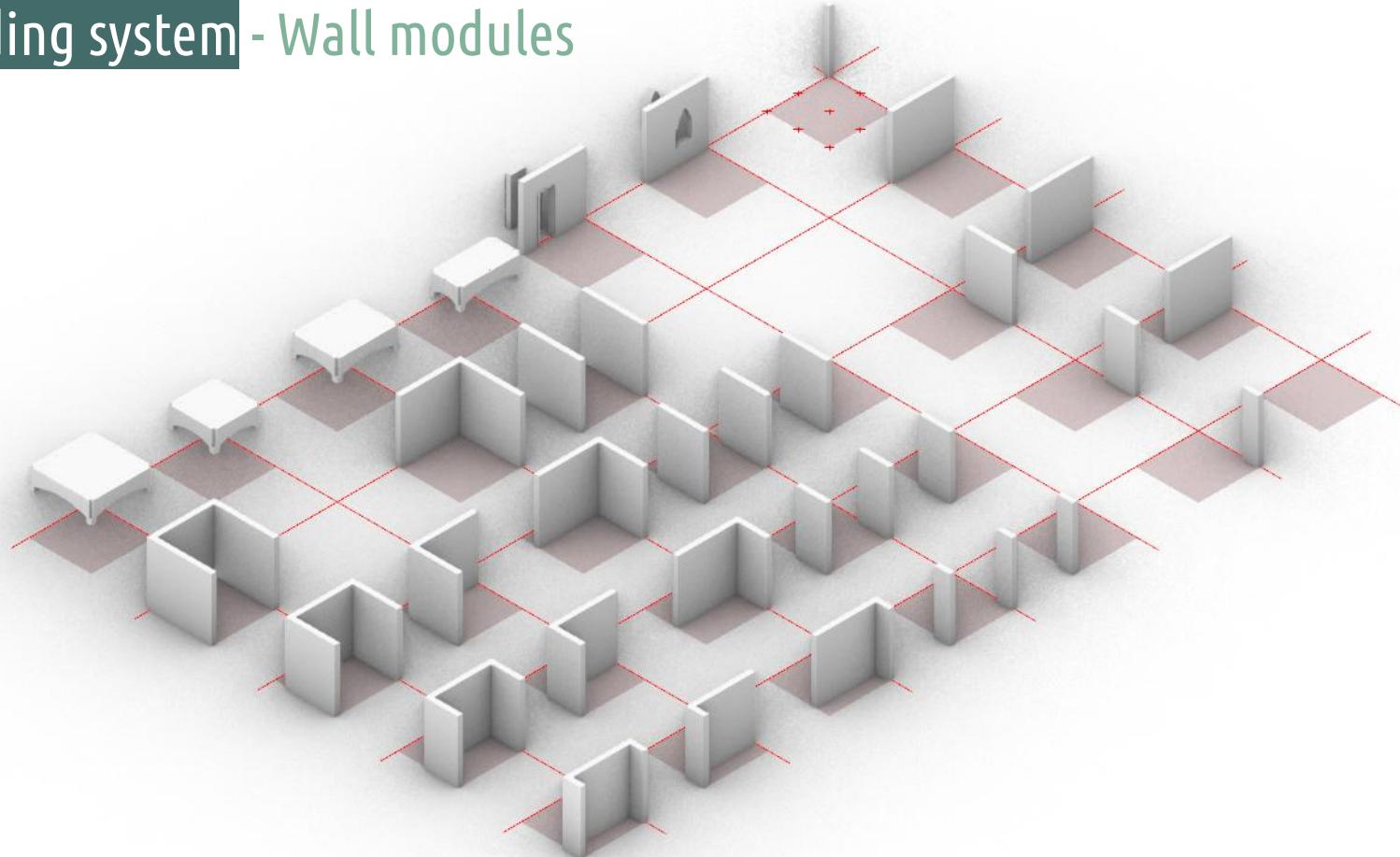


4	5	6	7
3			
2			
1	12	11	10
A	B	B'	A'

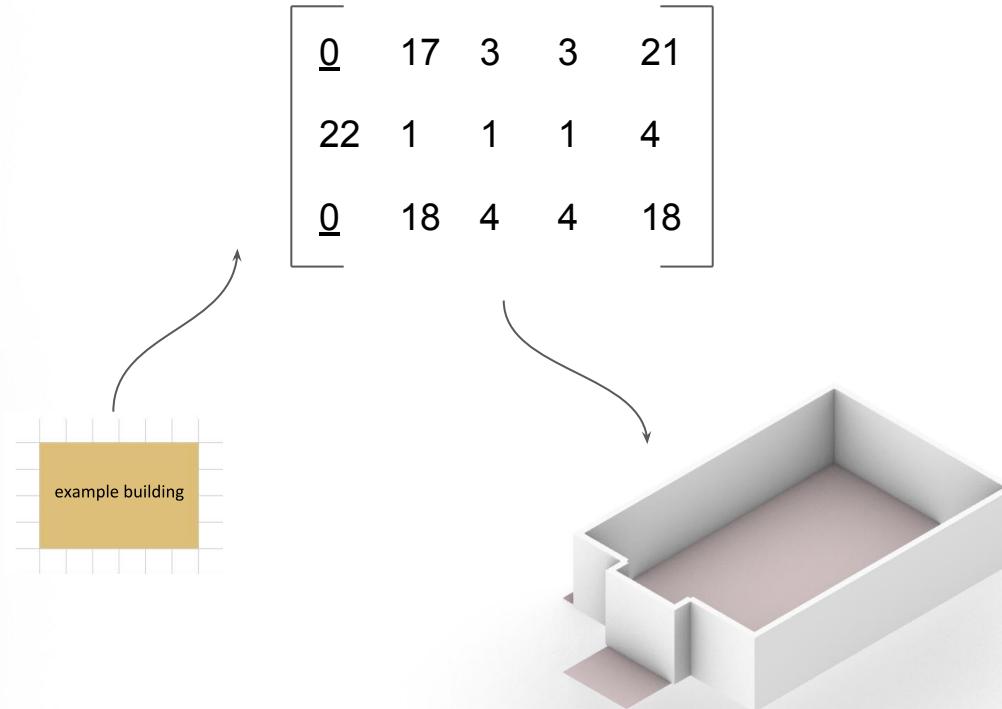
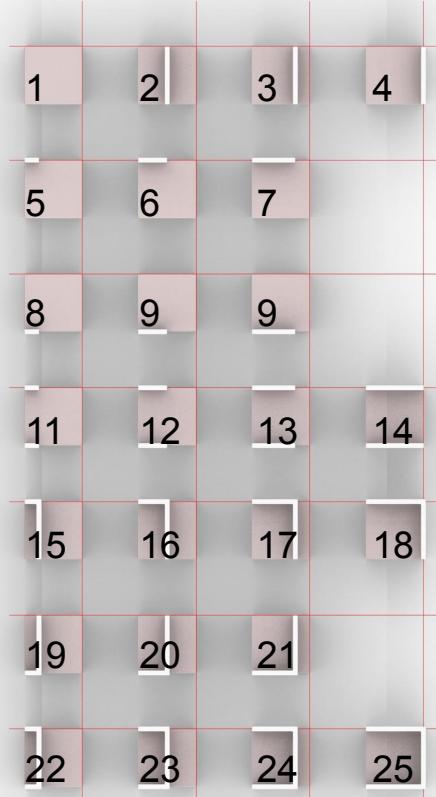
## Building system - Internal stairs



## Building system - Wall modules

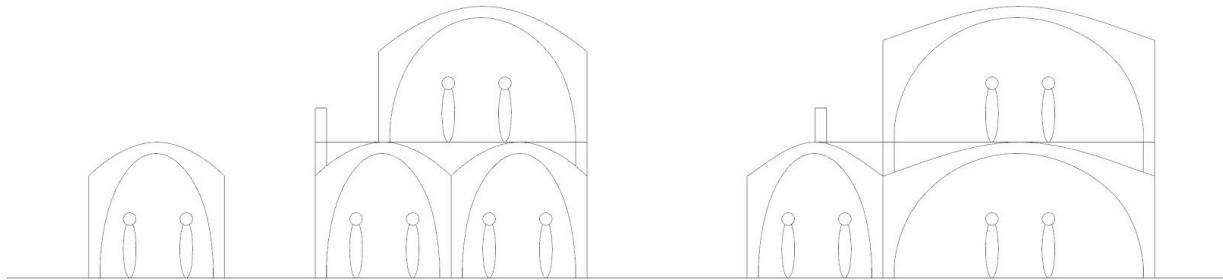


# Building system - Module system



# Building system - Configurations

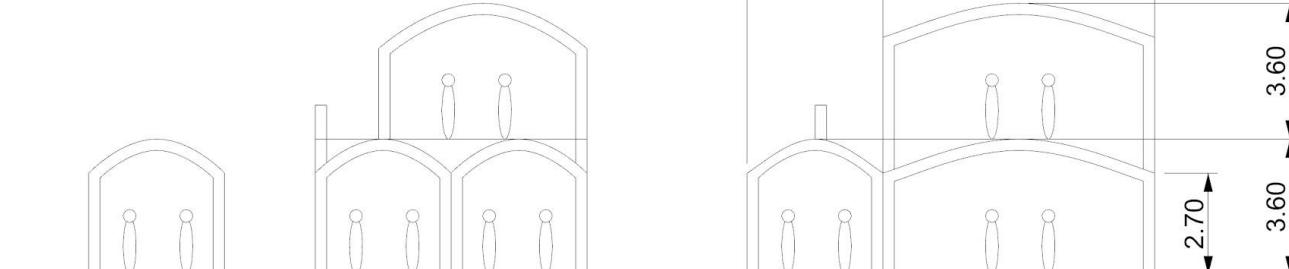
Self Supported stacking



Linear elements

Spatial elements

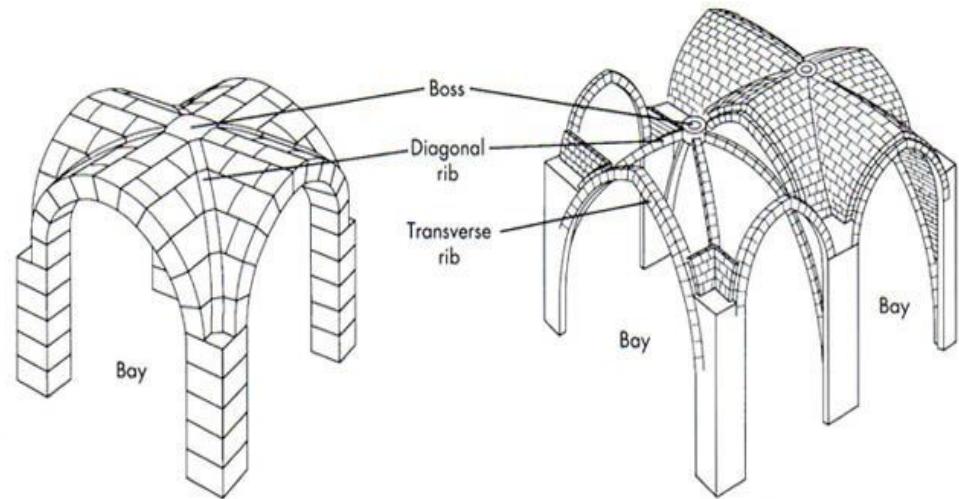
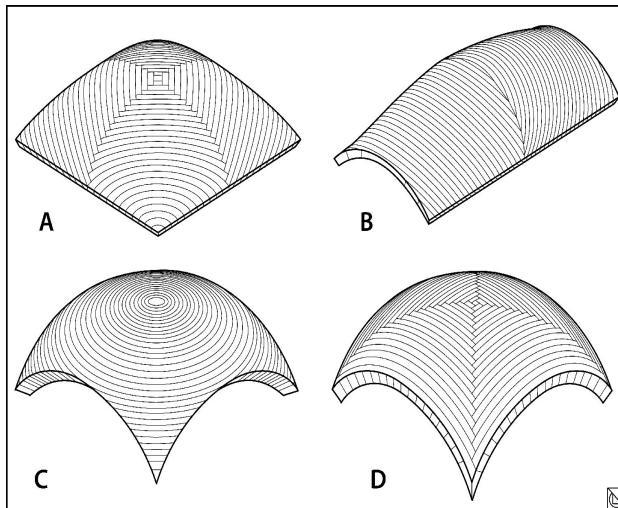
Wall supported stacking



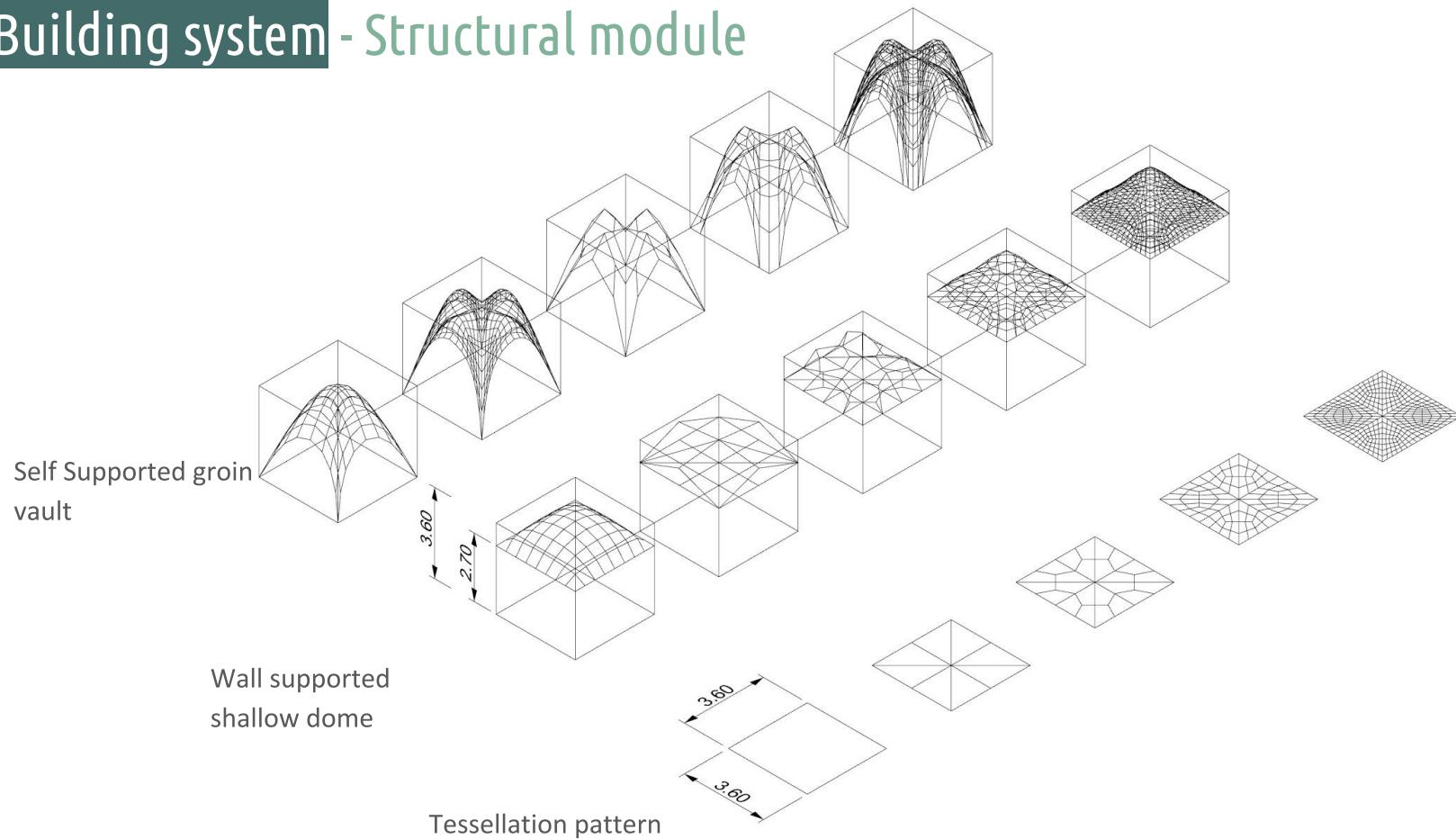
Linear elements

Spatial elements

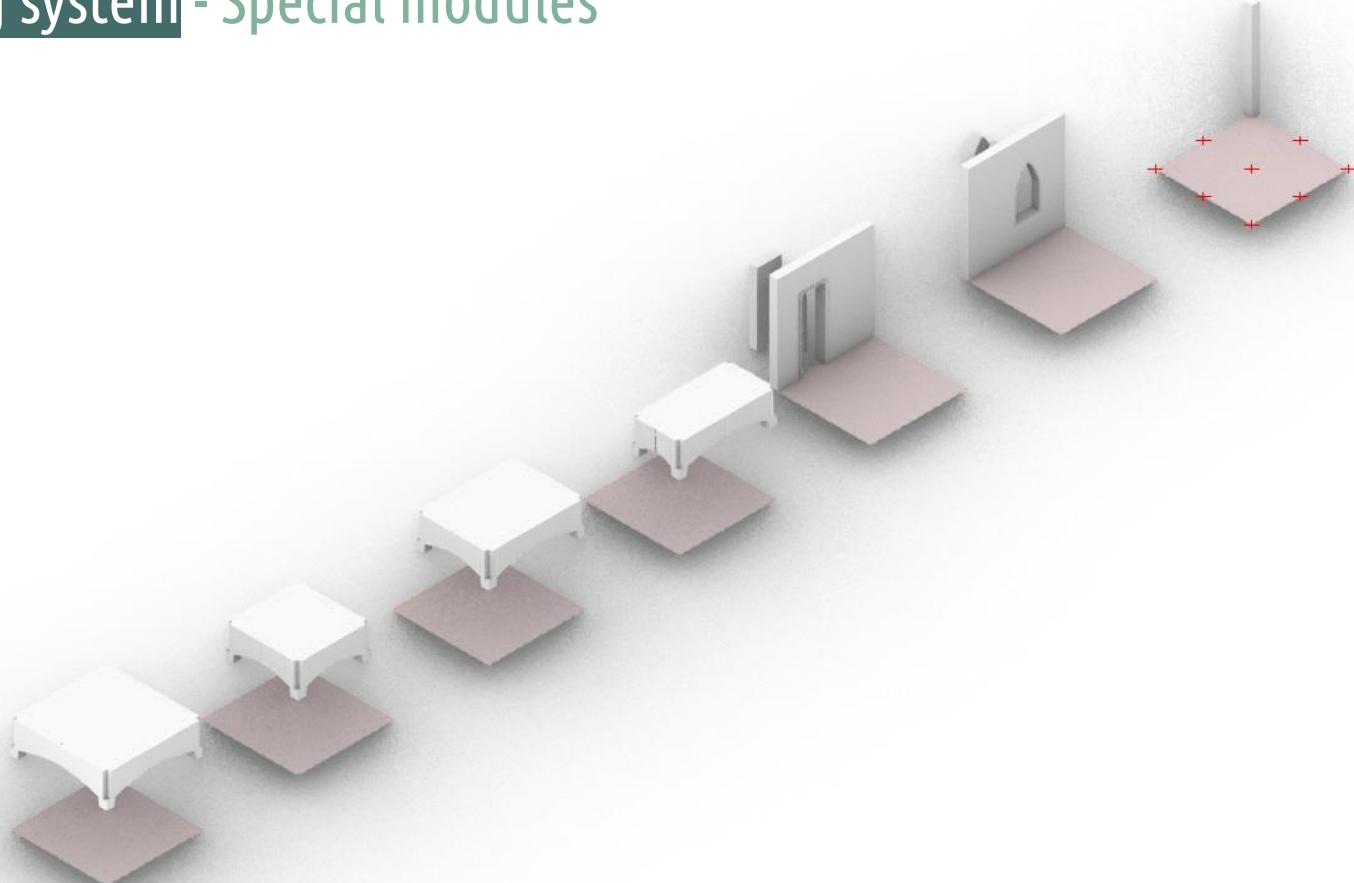
# Building system - Structural concept



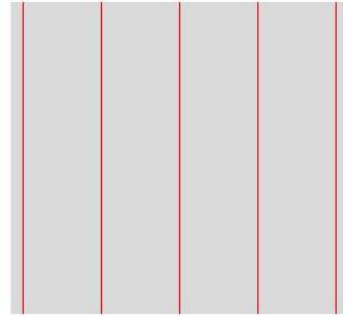
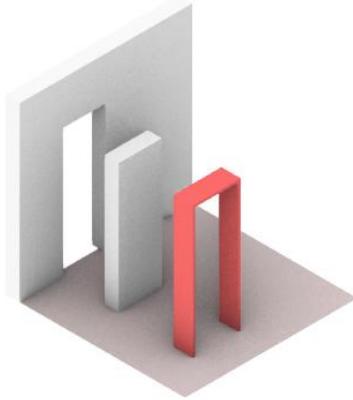
# Building system - Structural module



## Building system - Special modules



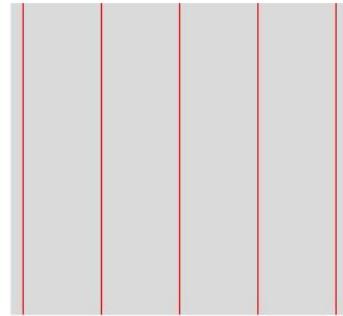
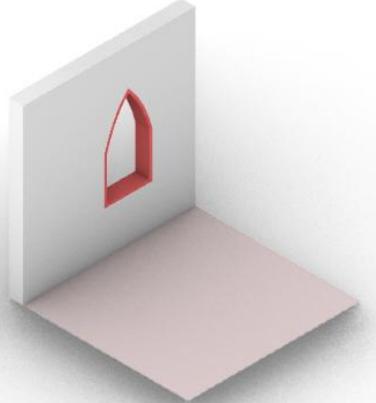
## Building system - Wall openings



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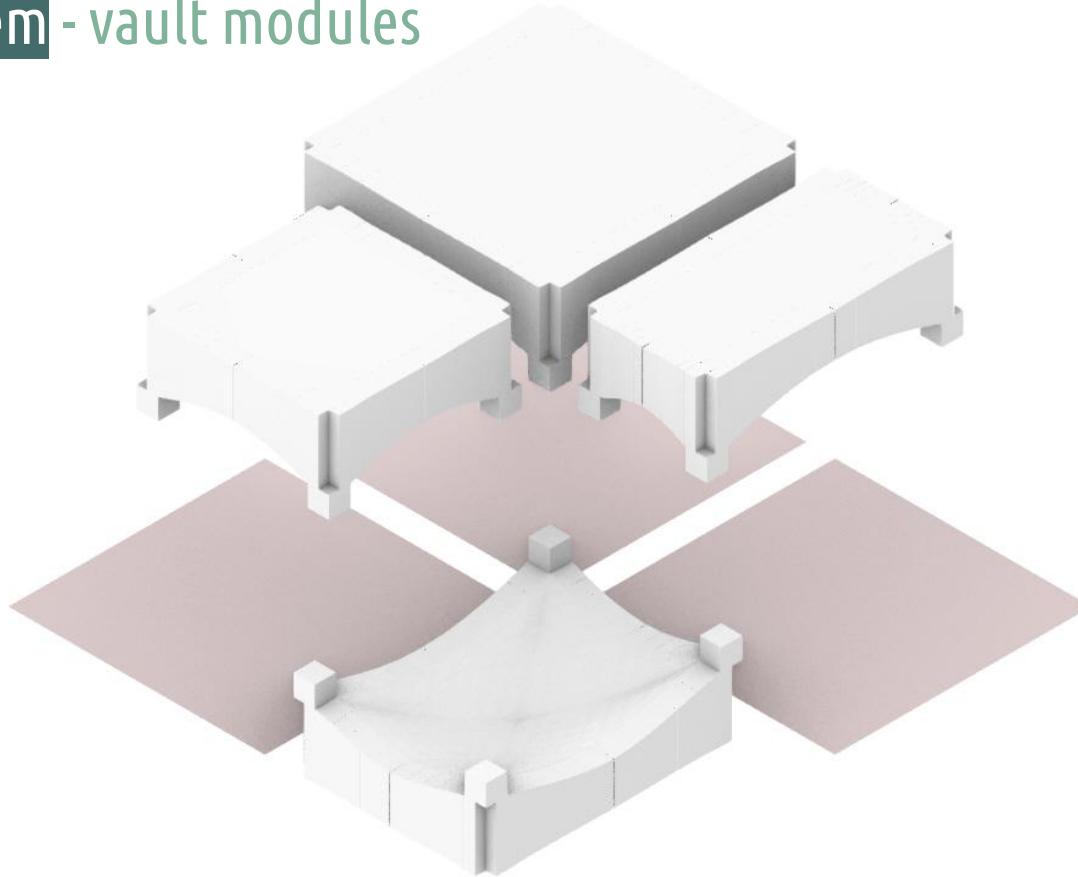
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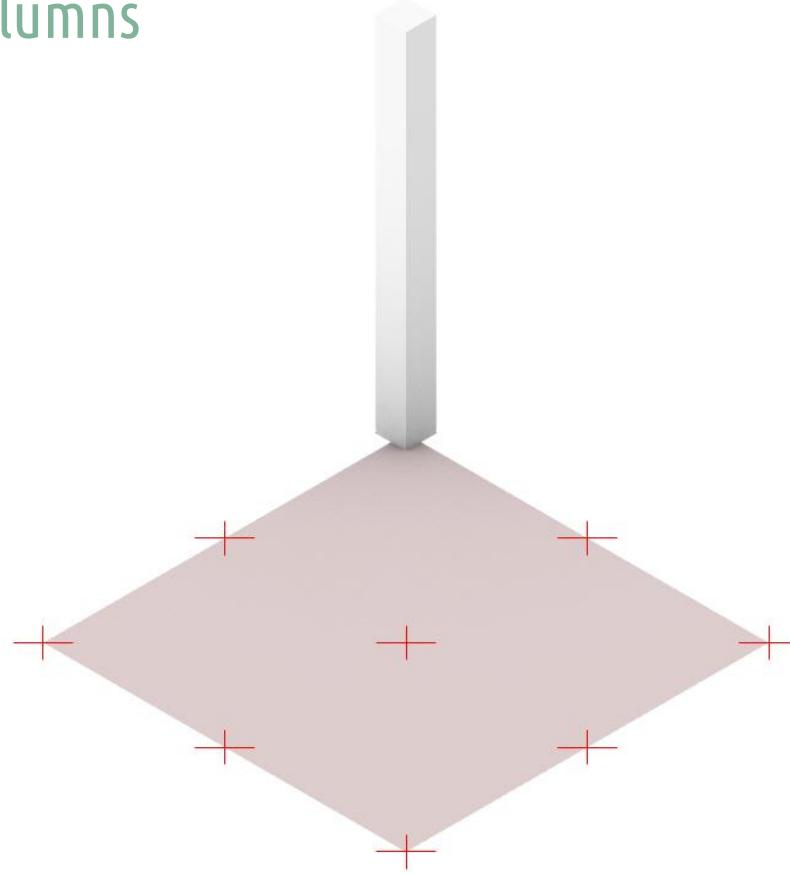
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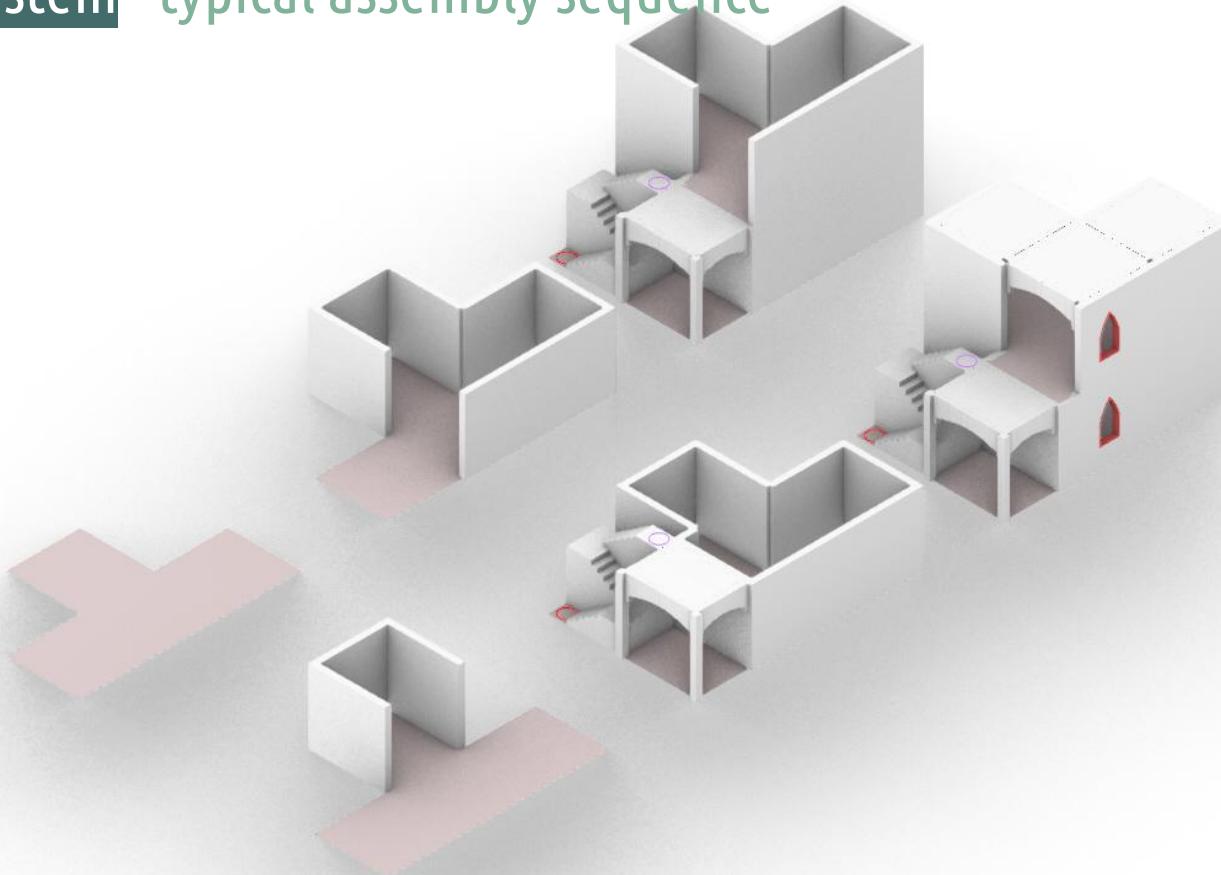
## Building system - vault modules



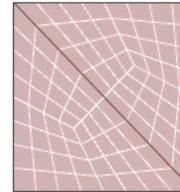
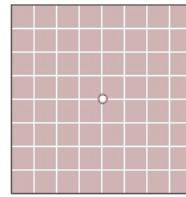
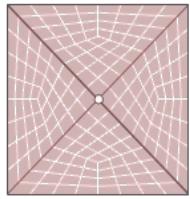
## Building system - columns



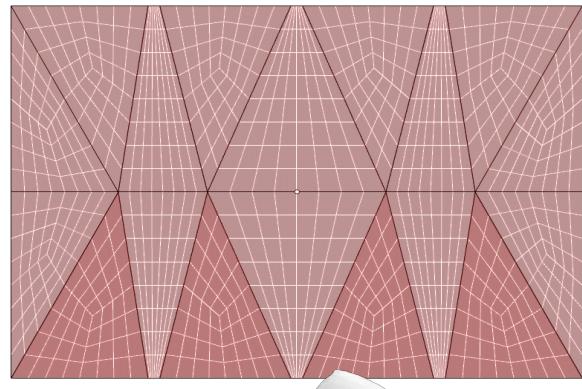
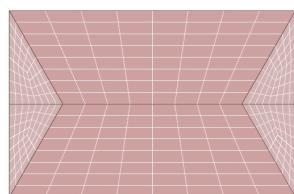
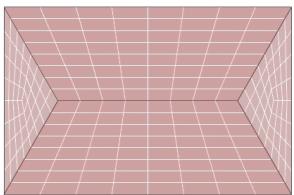
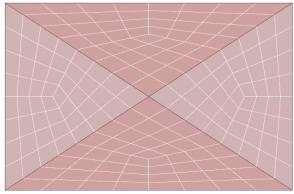
## Building system - typical assembly sequence



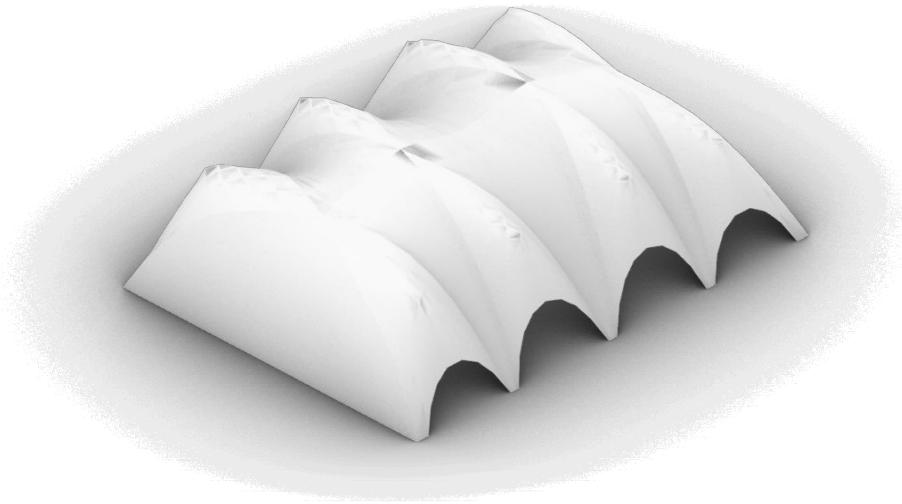
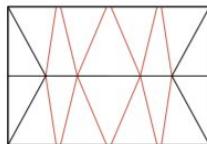
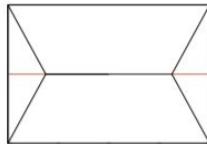
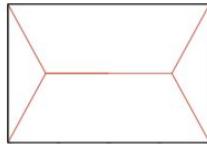
## Building system - Cell roof iterations



## Building system - Multiple cells roof iterations

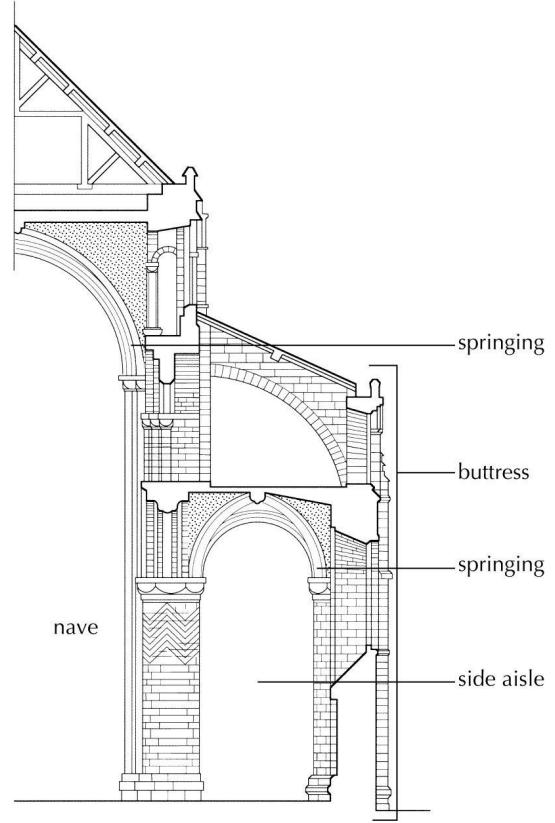
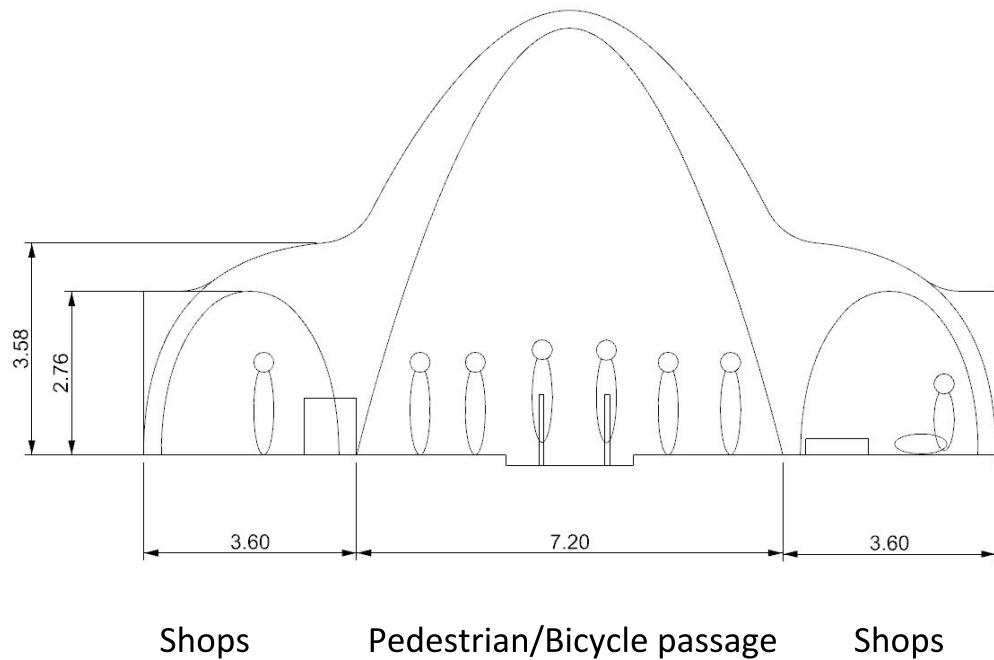


# Building system - Multiple cells roofing system

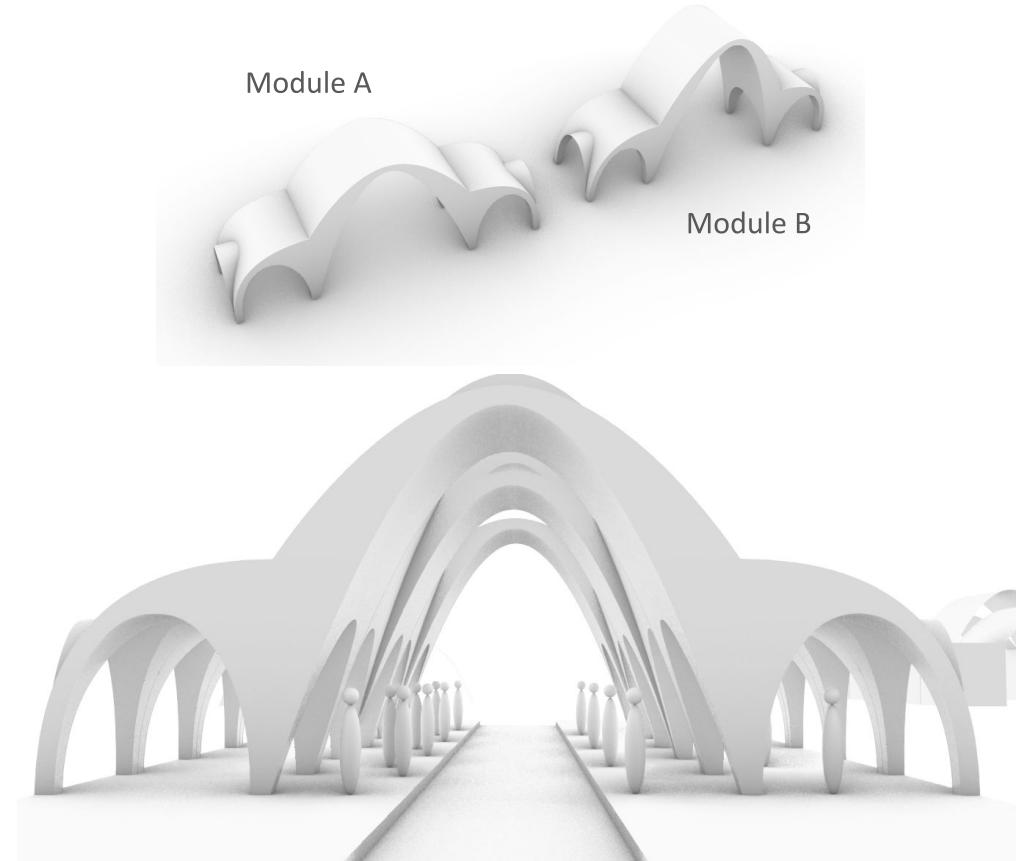
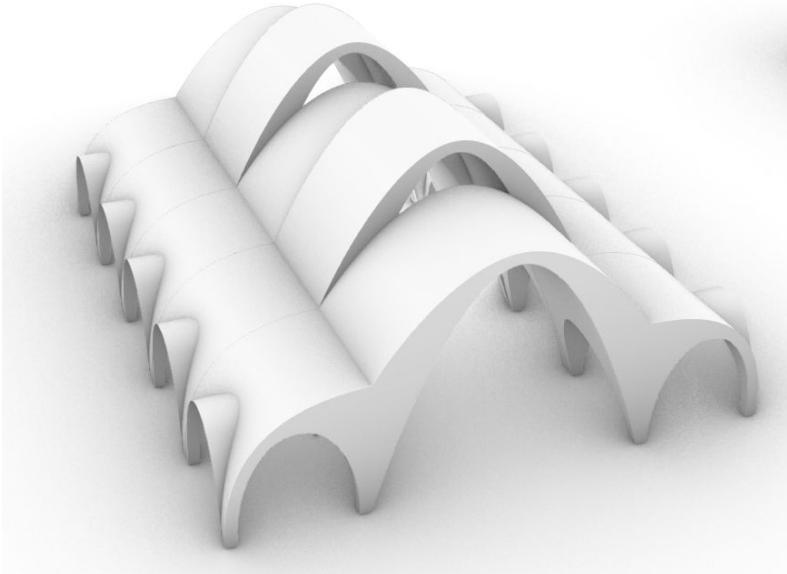


## Building Typologies: atrium and bazaar

# Building system - Bazaar Concept



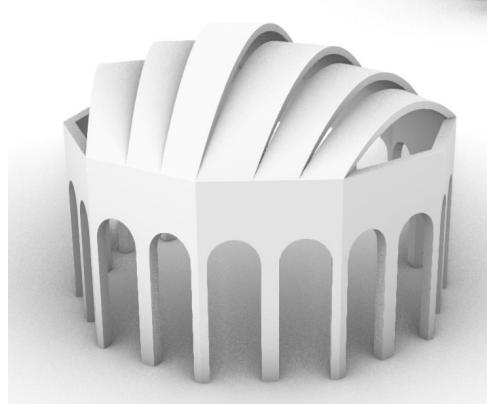
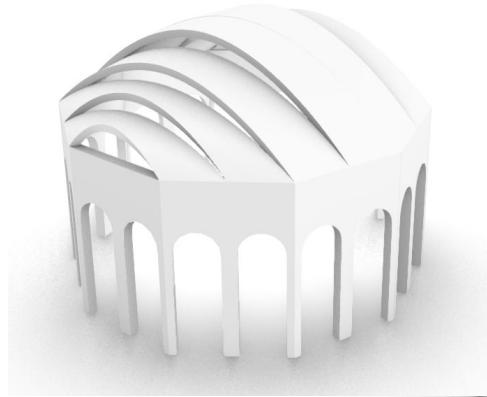
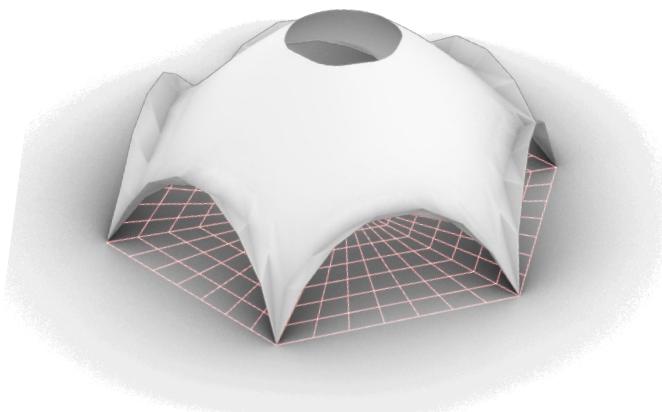
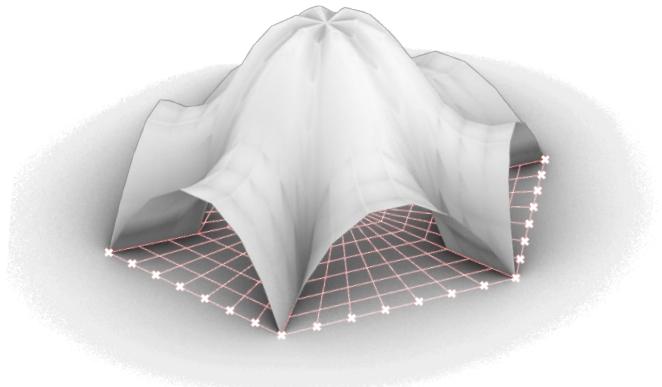
# Building system - Bazaar Concept



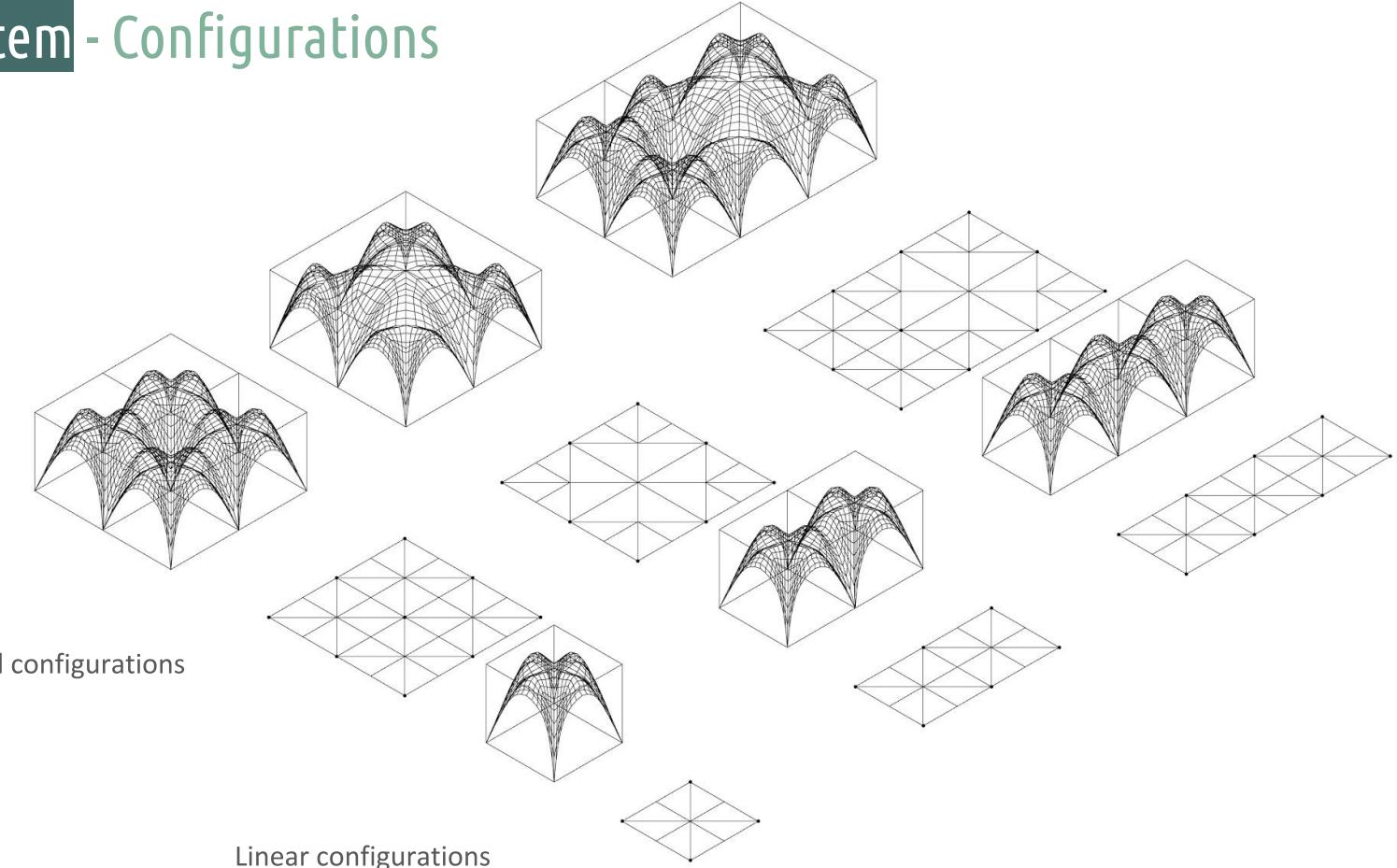
Module A

Module B

# Building system - Atrium Concept

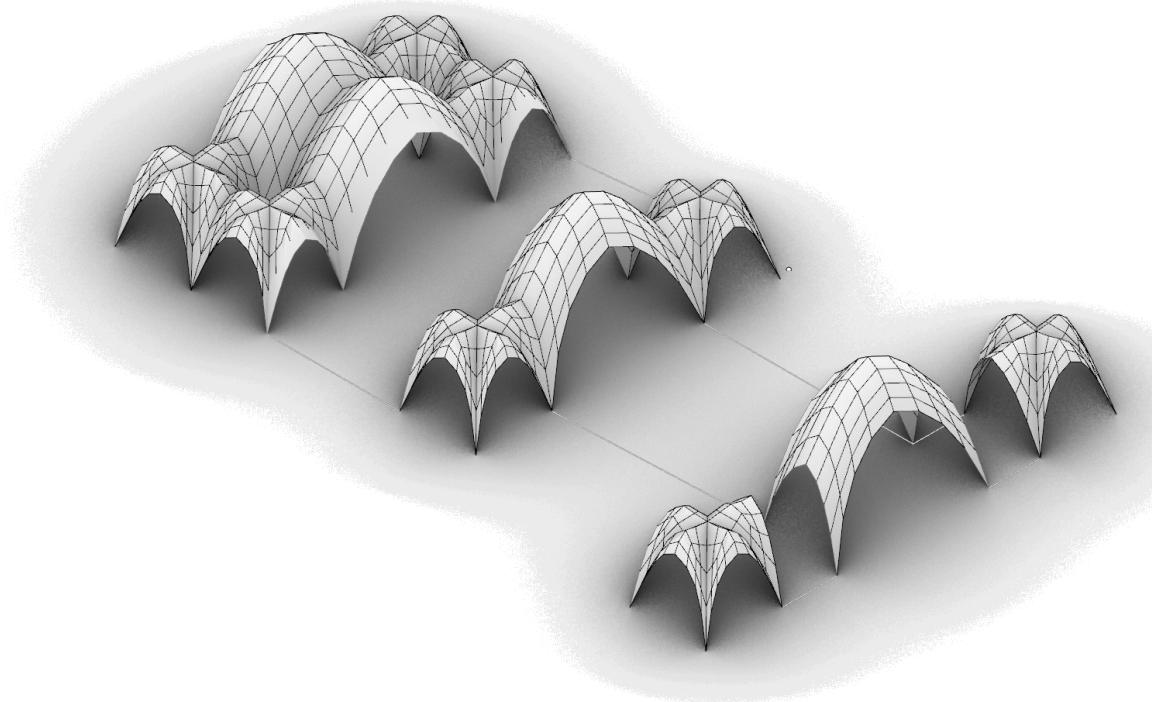
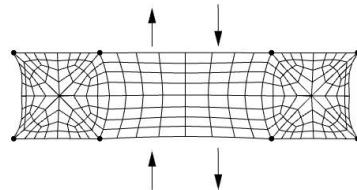
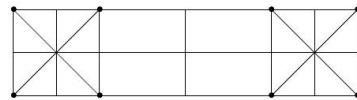
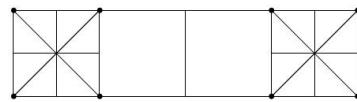
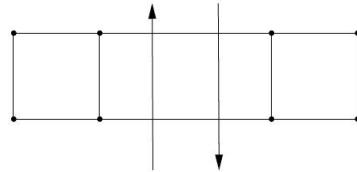


# Building system - Configurations

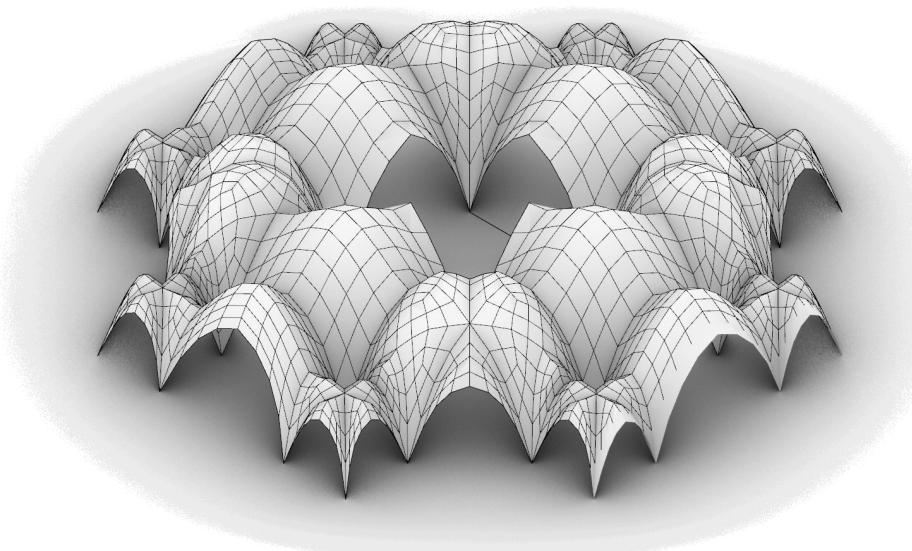
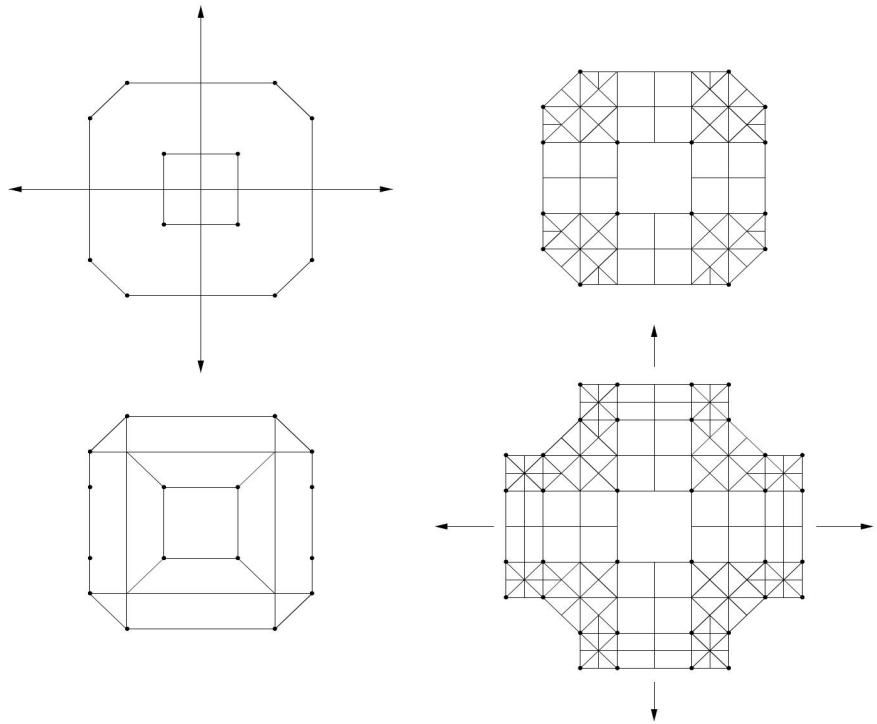


# Building system - Bazaar Module Tessellation

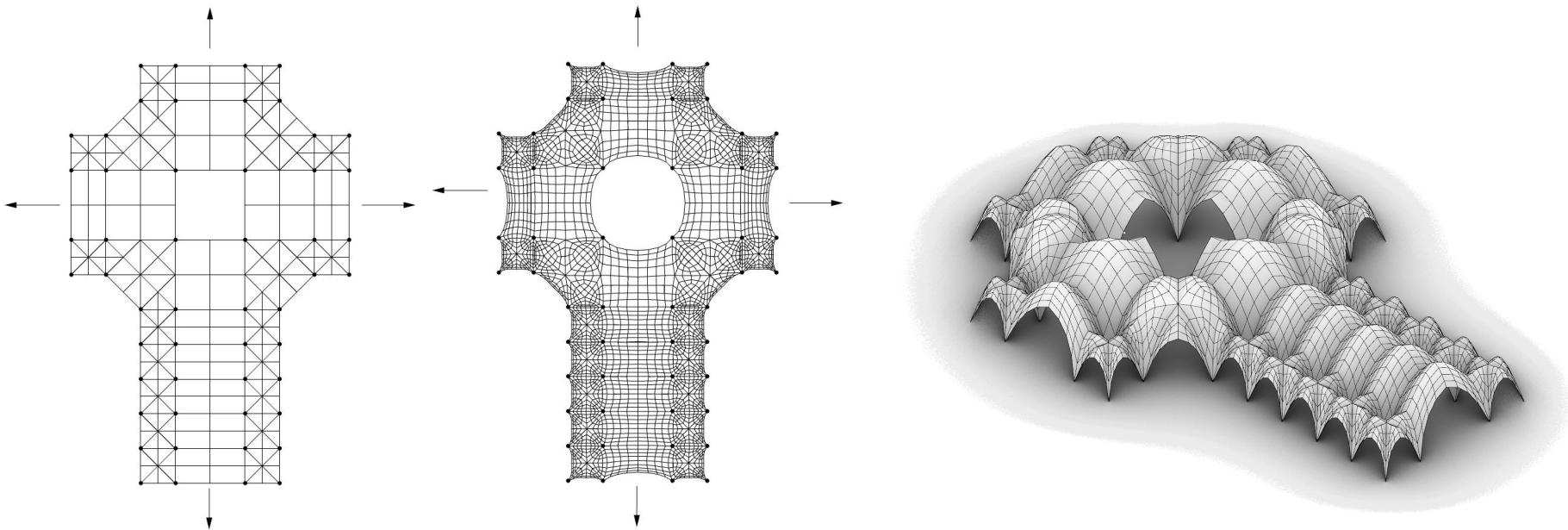
→ 3.60 < 7.20 > 3.60 ←



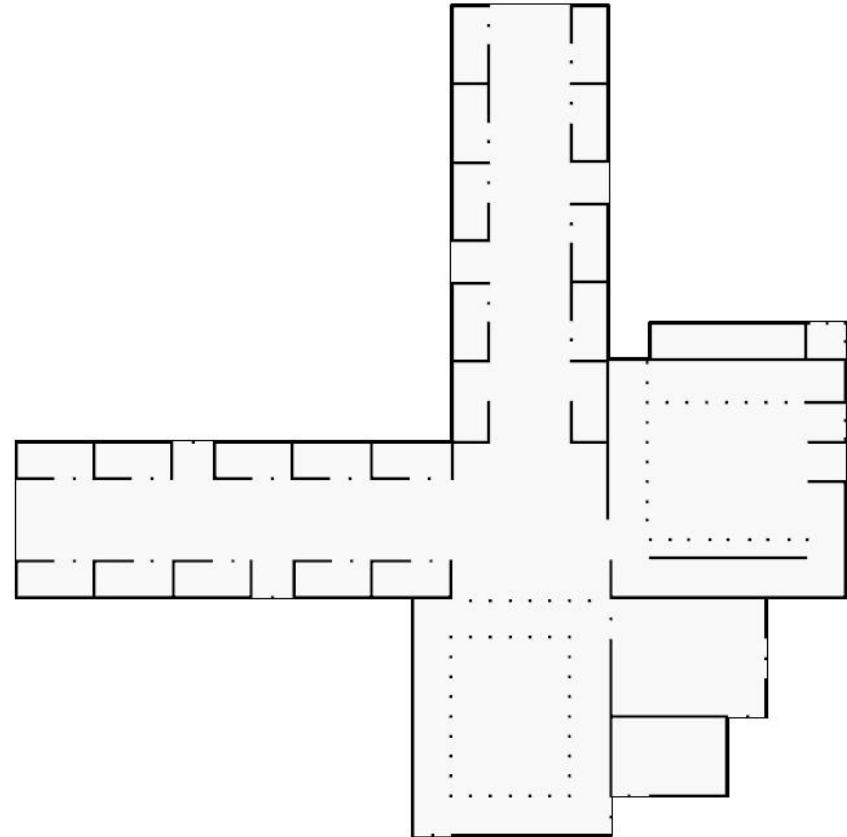
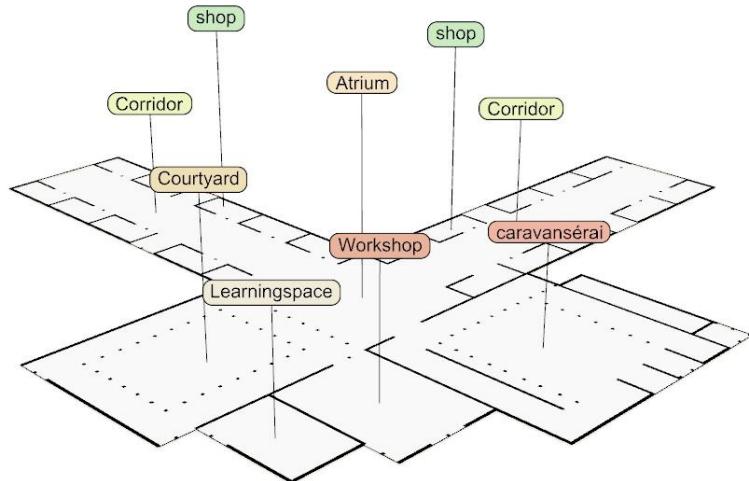
# Building system - Atrium Module Tessellation



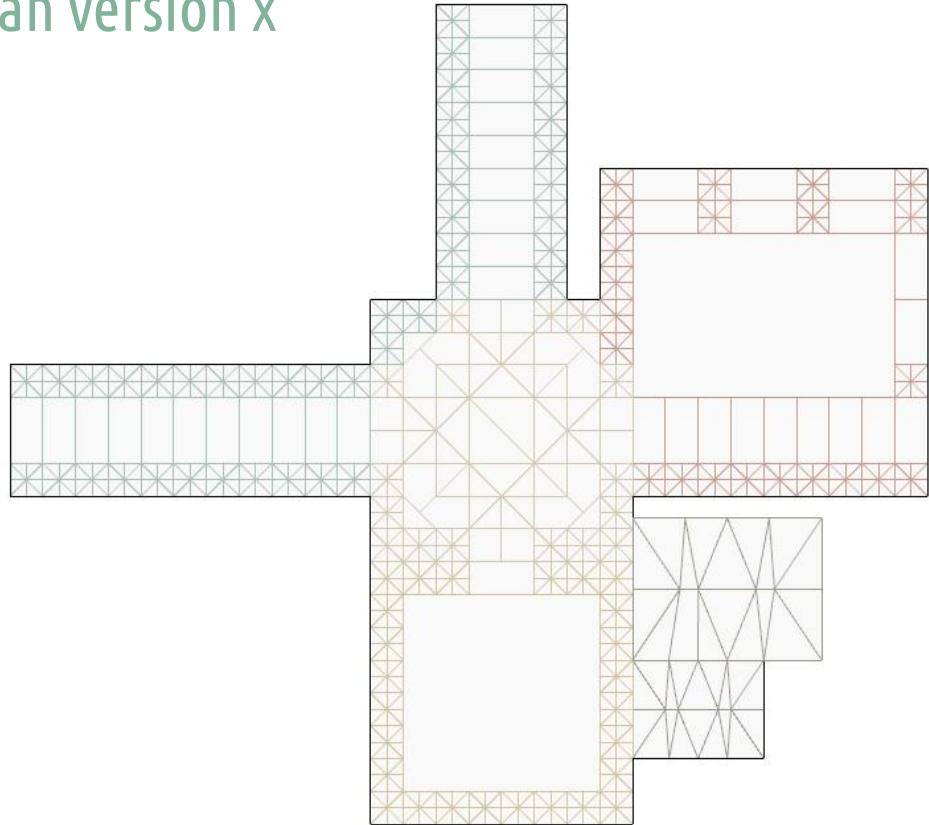
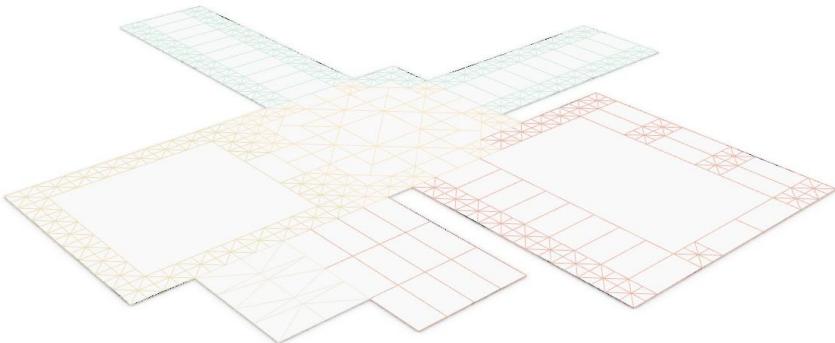
# Building system - Atrium connected with Bazaar



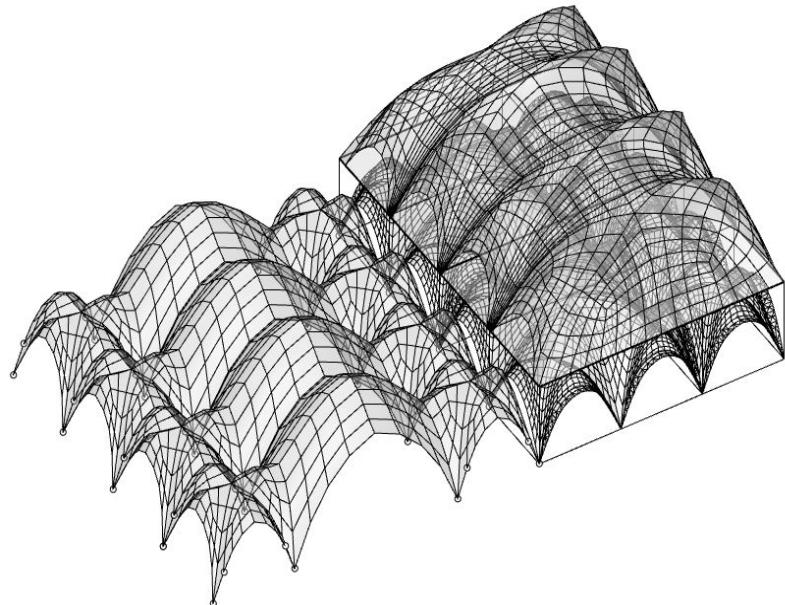
# Building system - Floor plan version x



# Building system - Tessellated floor plan version x



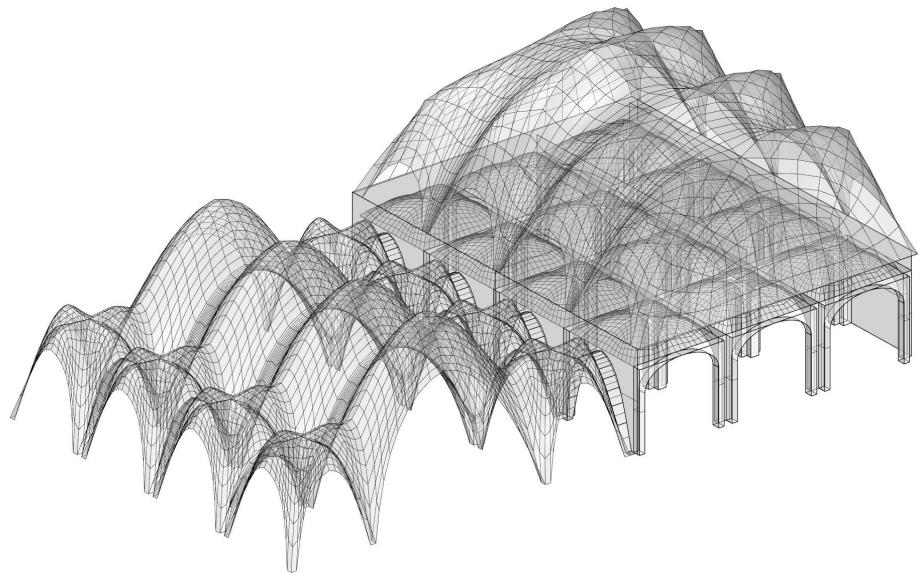
# What's next?



Self supported

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Self Supported systems

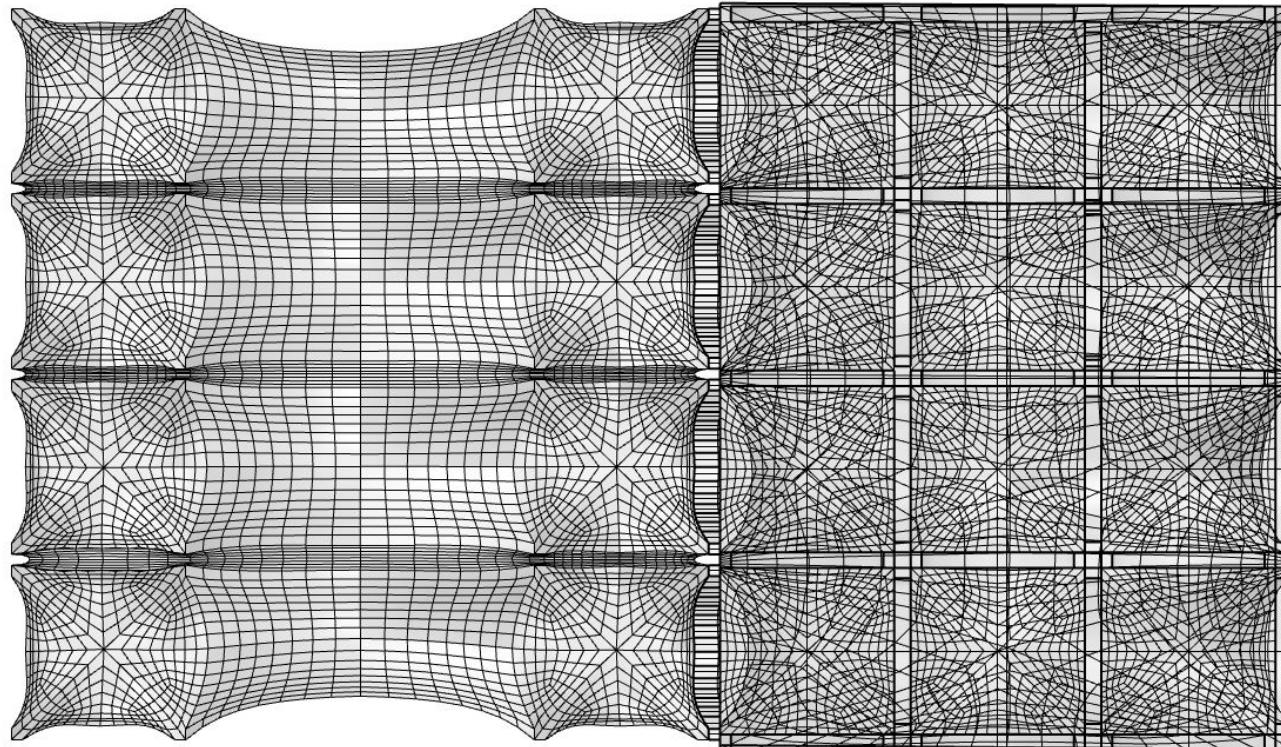


Self Supported configurations

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Wall supported shallow dome

What's next?



# What's next?

- Improving the connections between our two shaping approaches.
- Finalising Urban Expansion and Layout tool (and try to connect them).
- Write module-laying tool and integrate with tessellation logic.
- Structural analysis of each single module.
- Refining tessellation to have maximum control over the shapes.

Later stages:

- Construction procedure.
- Building an instruction manual for our system.
- **Test the final efficiency of our system.**

Thank you