Co[nn]Action

Improve the liveability in the Zaatari Camp by creating accessible & inclusive infrastructure

EARTHY 4.0 MIDTERM

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DESIGN PROBLEMS

SITE ANALYSIS

01_INFRASTRUCTURE

The infrastructure is inadequate in terms of accessibility, safety, and connectivity.

02_CULTURE

Cultural aspects within the camp does not meet the requirements in sense of identity, sense of belonging & ownership

03_ACTIVITY

The range of activities and diverse spaces in the camp is insufficient to meet the demand of being occupied.

DESIGN VISION

GOALS & INTERVENTIONS

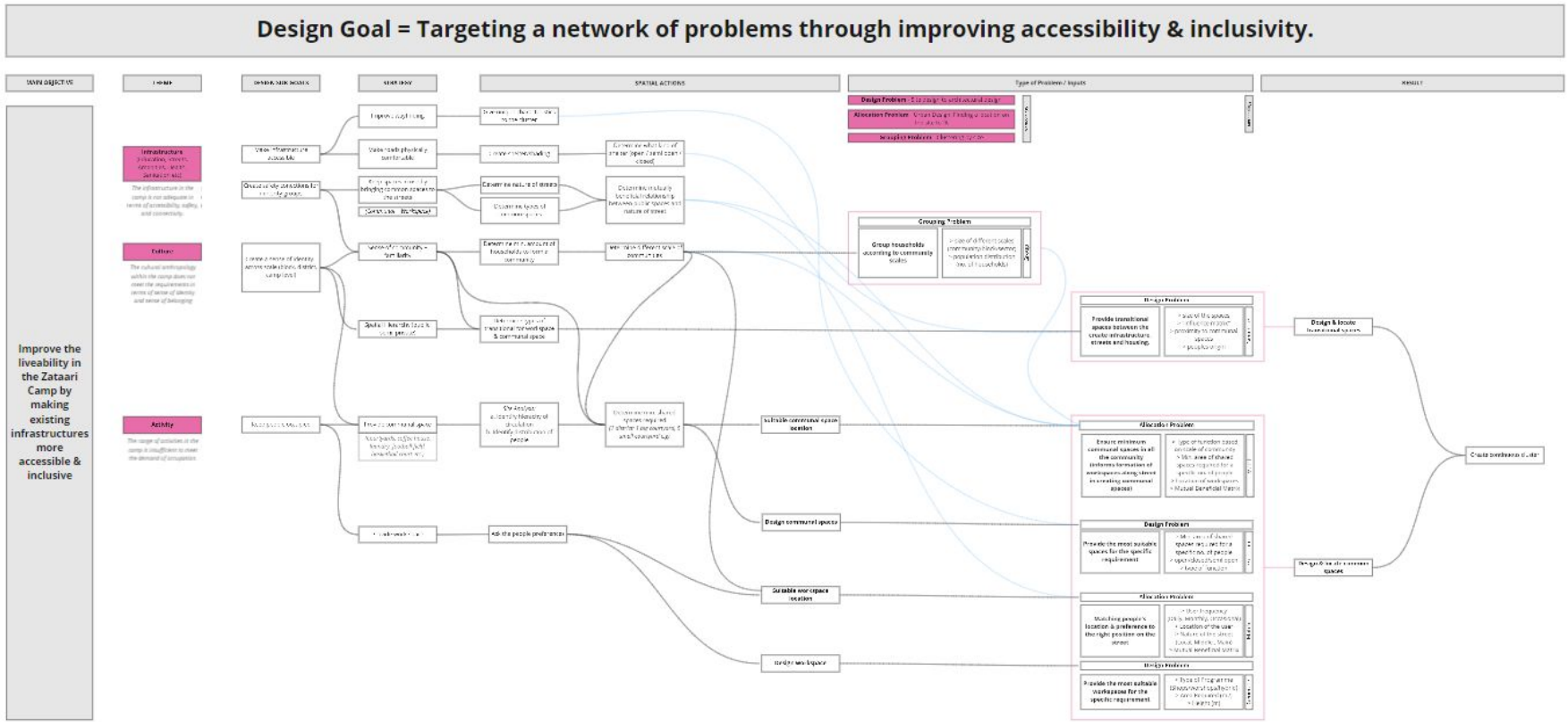
Our vision is to create a *safe and accessible network* of *functional spaces*, providing demanded spaces for *activity* and enhance the *cultural identity* through architectural design.

Design sub-goals:

- *Make infrastructure accessible*
- *Create connections for vulnerable groups*
- *Create a sense of identity - across scale*
- *Keep people occupied*

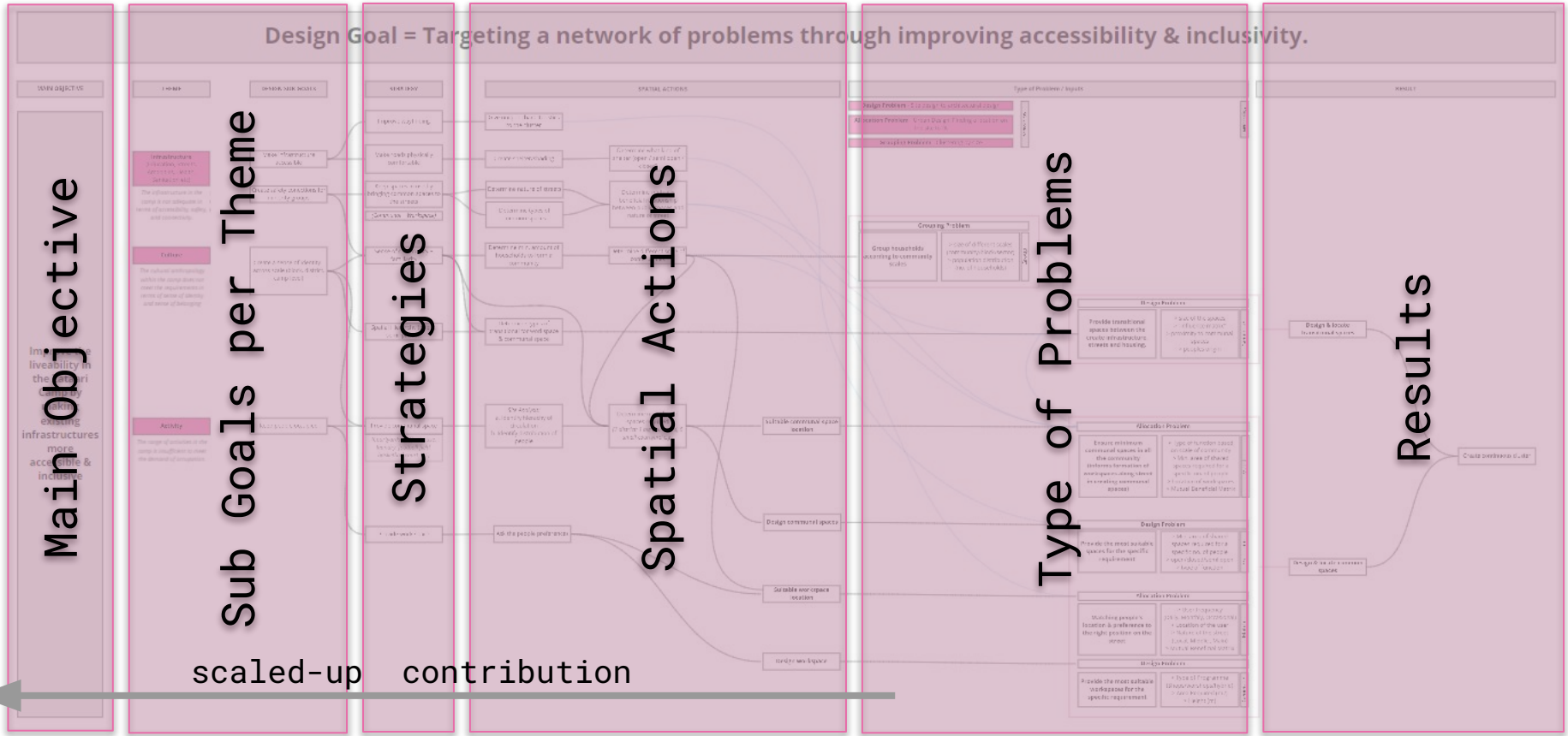
DESIGN APPROACH

DESIGN PROCESS



DESIGN APPROACH

DESIGN PROCESS

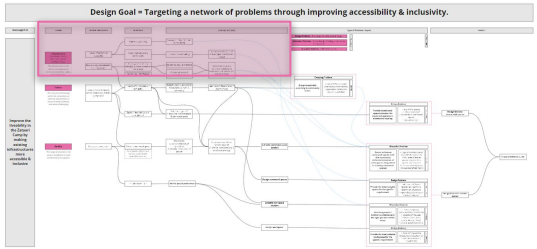


DESIGN APPROACH

DESIGN PROCESS

THEME	DESIGN SUB-GOALS	STRATEGY	SPATIAL ACTIONS
Infrastructure (Education, Streets, Amenities, Health, Sanitation etc)	Make infrastructure accessible	Improve wayfinding	Give unique characteristics to the cluster
		Make roads physically comfortable	Create shelter/shading → Determine what kind of shelter (open / semi open / closed)
	Create safety conections for minority groups	Keep spaces in use by bringing common spaces to the streets *(Communal + Workspace)*	Determine nature of streets → Determine mutually beneficial relationship between public spaces and nature of street
			Determine types of common spaces → Determine mutually beneficial relationship between public spaces and nature of street

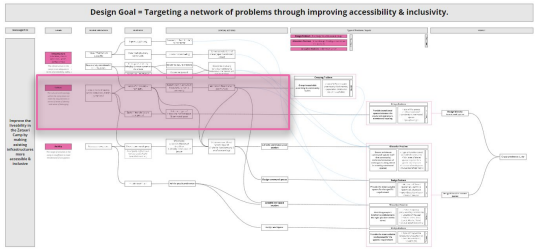
The infrastructure in the camp is not adequate in terms of accessibility, safety, and connectivity.



DESIGN APPROACH

DESIGN PROCESS

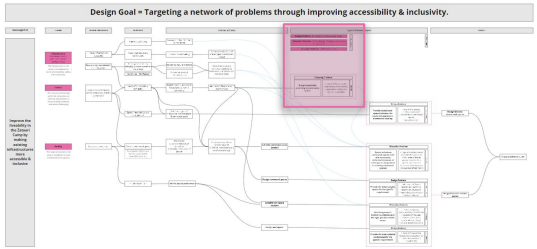
THEME	DESIGN SUB-GOALS	STRATEGY	SPATIAL ACTIONS
Culture *The cultural anthropology within the camp does not meet the requirements in terms of sense of identity and sense of belonging*	Create a sense of identity - across scale (block, district, camp level)	Sense of community + familiarity	Determine min. amount of households to form a community → Determine different scale of communities
		Spatial Hierarchy (public, semi, private)	Determine types of transitional for workspace & communal space



DESIGN APPROACH

DESIGN PROCESS

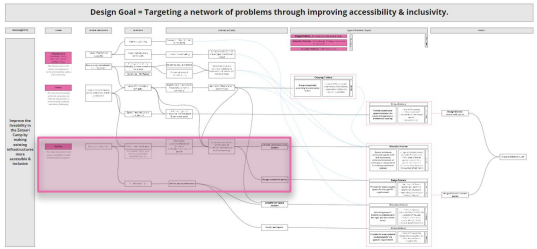
SPATIAL ACTIONS	Type of Problem / Inputs		
	Design Problem - Site design to architectural design		Methodology
	Allocation Problem - Urban Design; Finding a location on the site to fit		
	Grouping Problem - Clustering by size		
Determine different scale of communities	**Grouping Problem**		
	Group households according to community scales	> size of different scales (community/block/sector) > population distribution (no. of households)	Group
Determine types of transitional for workspace & communal space	**Design Problem**		
	Provide transitional spaces between the create infrastructure, streets and housing.	> size of the spaces > "influence matrix" > proximity to communal spaces > peoples origin	Generate



DESIGN APPROACH

DESIGN PROCESS

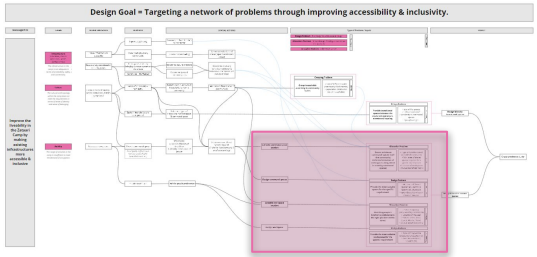
THEME	DESIGN SUB-GOALS	STRATEGY	SPATIAL ACTIONS		
Activity *The range of activities in the camp is insufficient to meet the demand of occupation.*	Keep people occupied	Provide communal space *(Courtyards, coffee house, laundry, football field, basketball court etc.)*	*Site Analysis:* a. Identify hierachy of circulation b. Identify distribution of people	Determine min. shared spaces required *(1 district: 1 big courtyard, 5 small courtyard e.g)*	**Suitable communal space location** **Design communal spaces**
		Provide work space	Ask the people preferences		**Suitable workspace location** **Design workspace**



DESIGN APPROACH

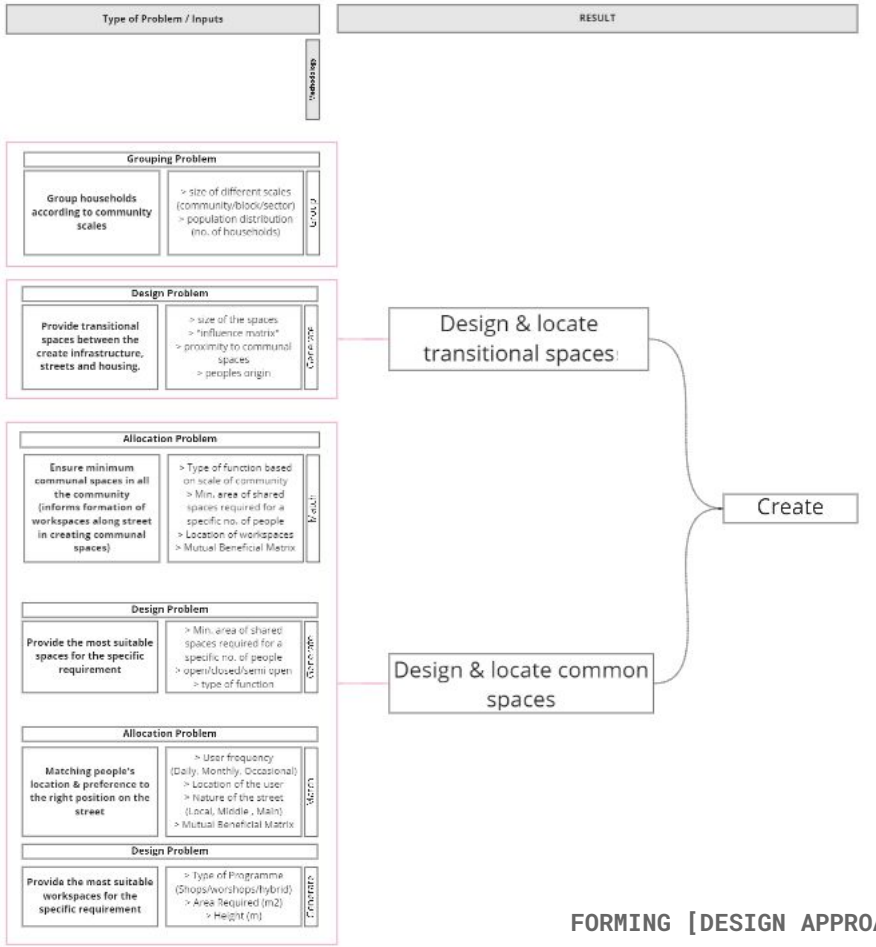
DESIGN PROCESS

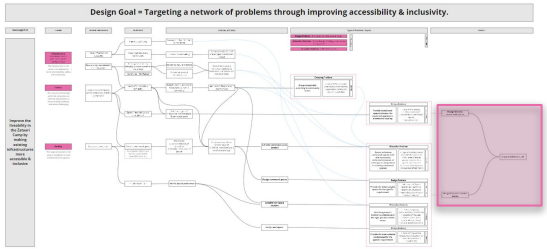
SPATIAL ACTIONS	Type of Problem / Inputs		
Suitable communal space location	Allocation Problem		
	Ensure minimum communal spaces in all the community (informs formation of workspaces along street in creating communal spaces)	> Type of function based on scale of community > Min. area of shared spaces required for a specific no. of people > Location of workspaces > Mutual Beneficial Matrix	Match
Design communal spaces	Design Problem		
	Provide the most suitable spaces for the specific requirement	> Min. area of shared spaces required for a specific no. of people > open/closed/semi open > type of function	Generate
Suitable workspace location	Allocation Problem		
	Matching people's location & preference to the right position on the street	> User frequency (Daily, Monthly, Occasional) > Location of the user > Nature of the street (Local, Middle , Main) > Mutual Beneficial Matrix	Match
Design workspace	Design Problem		
	Provide the most suitable workspaces for the specific requirement	> Type of Programme (Shops/worshops/hybrid) > Area Required (m2) > Height (m)	Generate



DESIGN APPROACH

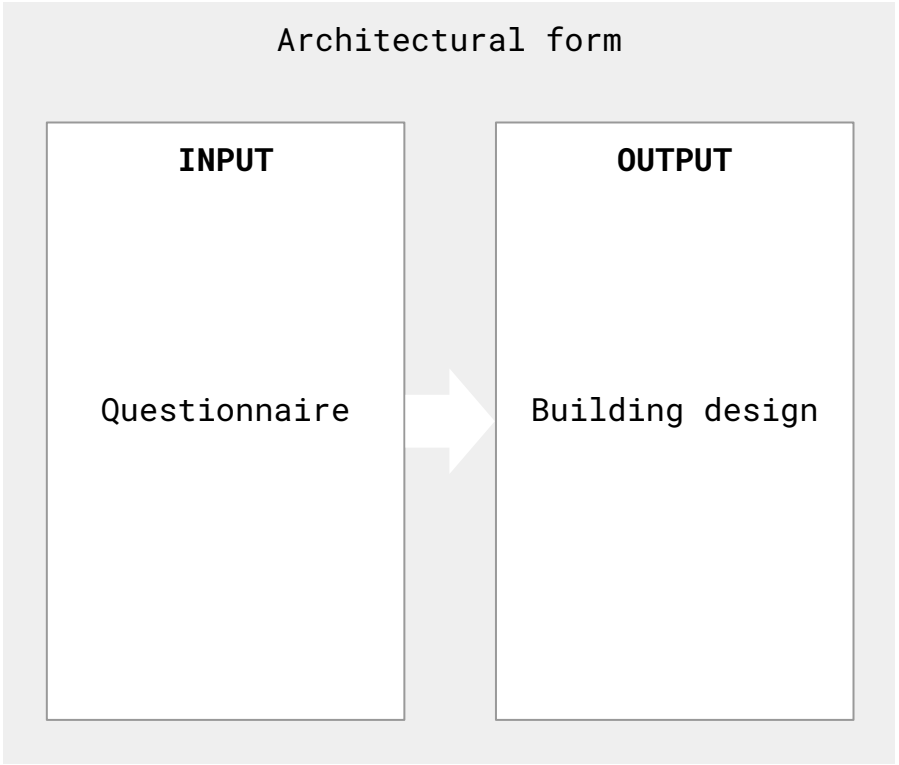
DESIGN PROCESS

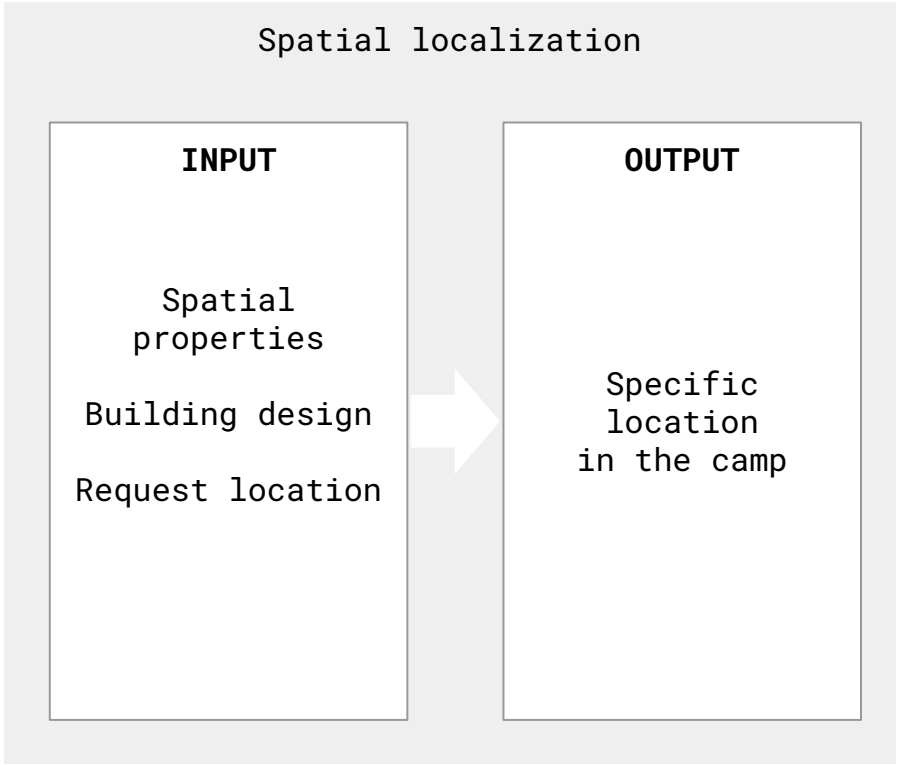




DESIGN PROPOSAL

SIMPLIFIED OVERVIEW



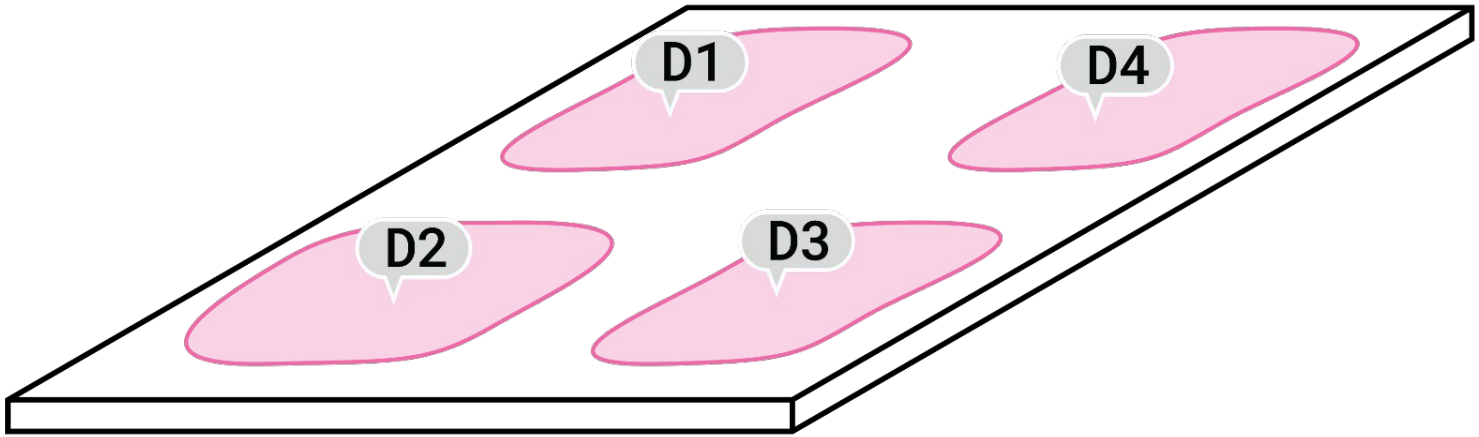


URBAN SCALE

Problem: **Allocation**

Objective: Determine main roads

Step 0: Identify districts

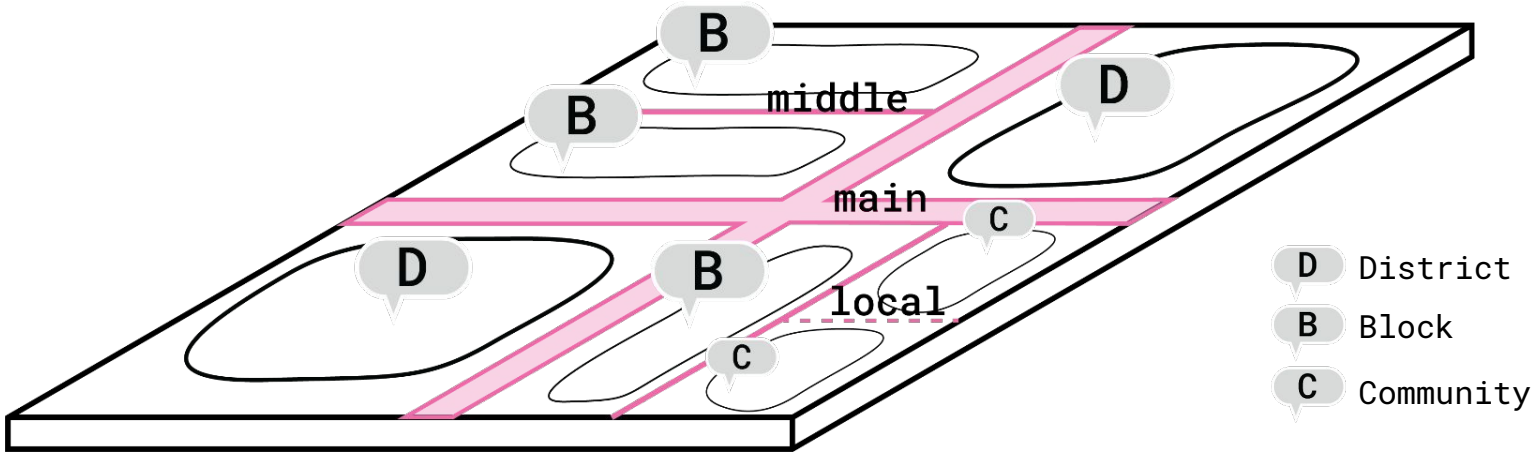


URBAN SCALE

Problem: **Allocation**

Objective: Determine what kind of function can be located on that point depending on the nature of the street

Step 1: Identify different nature of streets (district, block is derived)

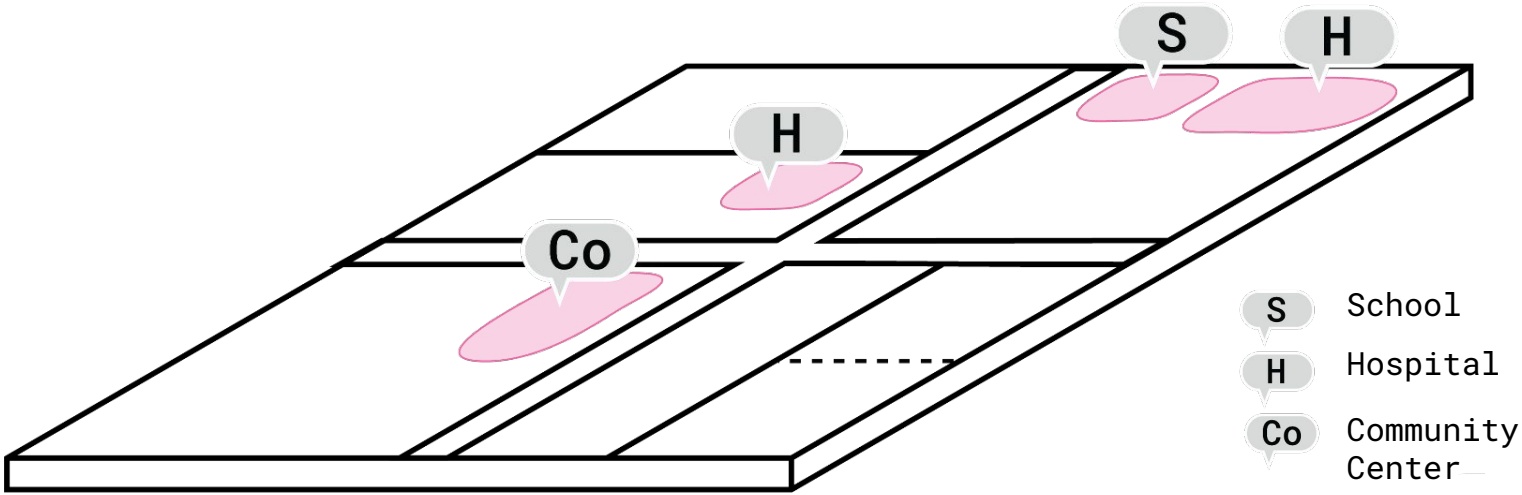


URBAN SCALE

Problem: **Allocation**

Objective: Provide the connection between specific amenities

Step 2: Identify existing infrastructure (specific division within broad clusters)

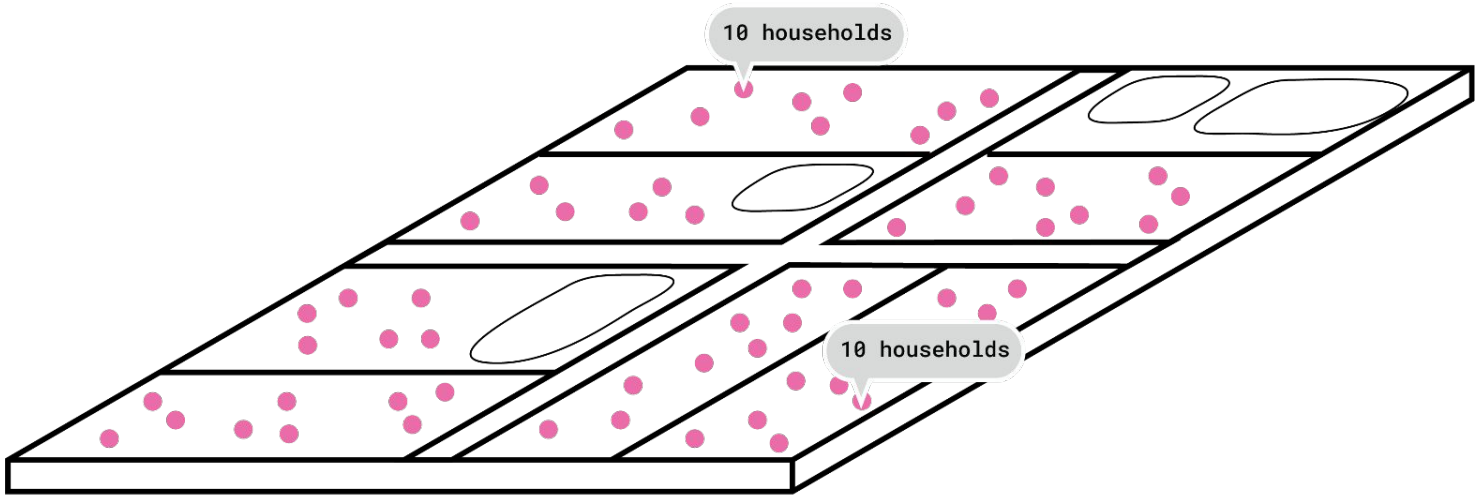


URBAN SCALE

Problem: **Grouping**

Objective: Determine population density within blocks

Step 3: Populated the block with the population data + randomised points as representative of the distribution

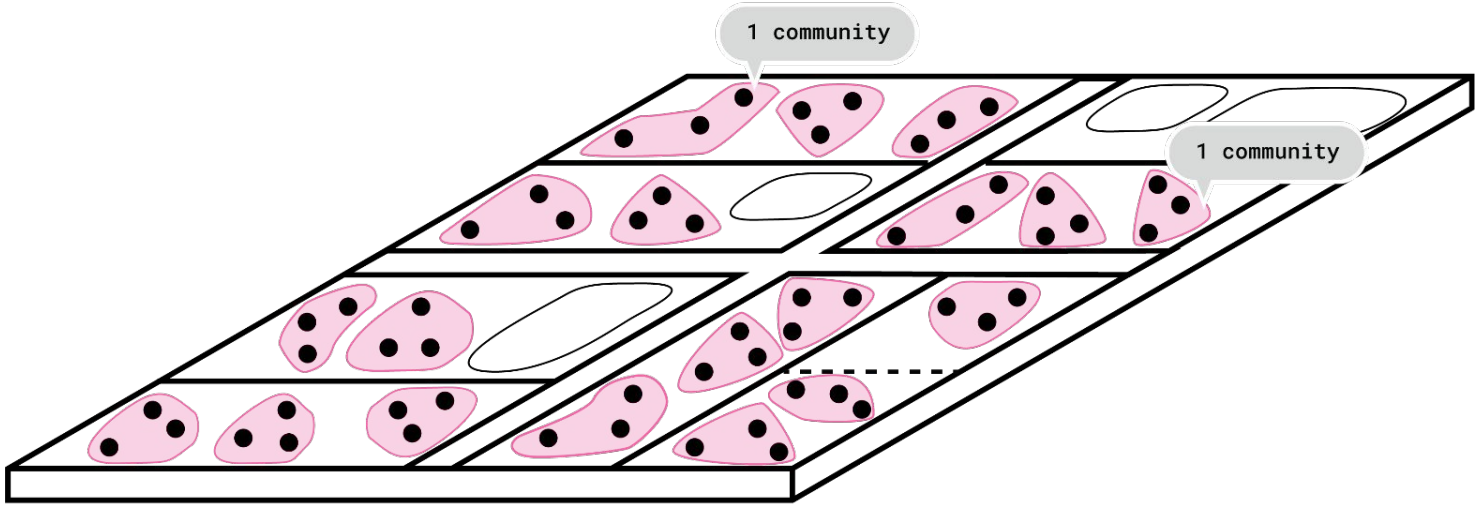


URBAN SCALE

Problem: **Grouping**

Objective: Locate the local streets and create communities

Step 4: Divide the blocks by community (16 households per community)

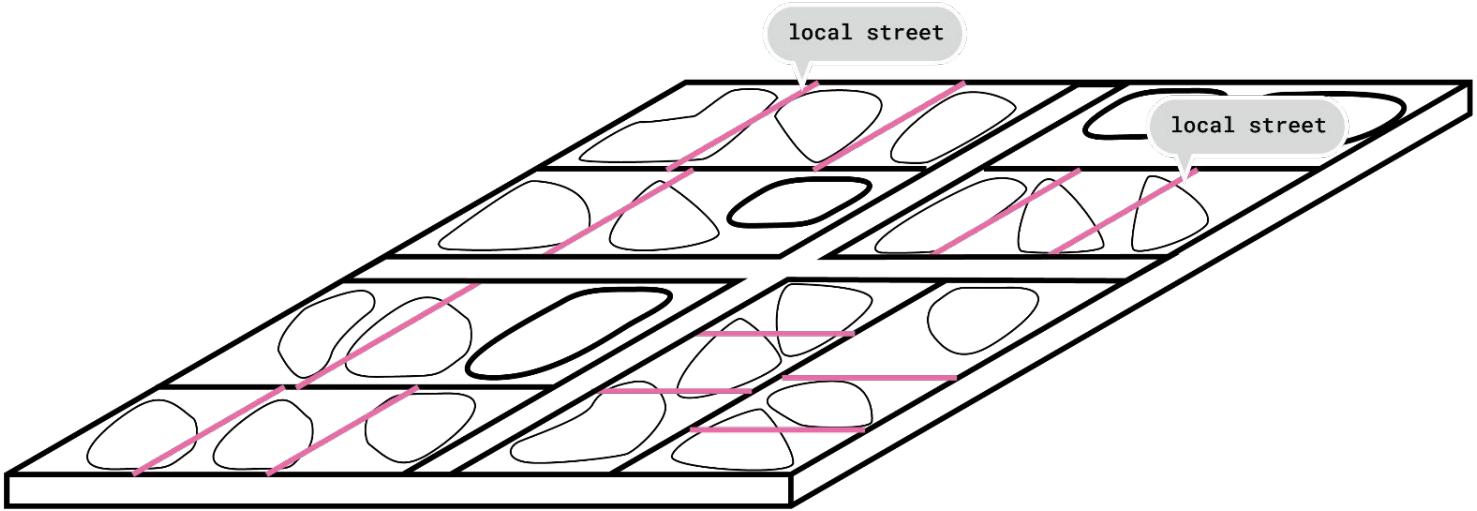


STREET SCALE

Problem: **Allocation**

Objective: Safe paths for minority groups

Step 5.0: Create the local streets between communities

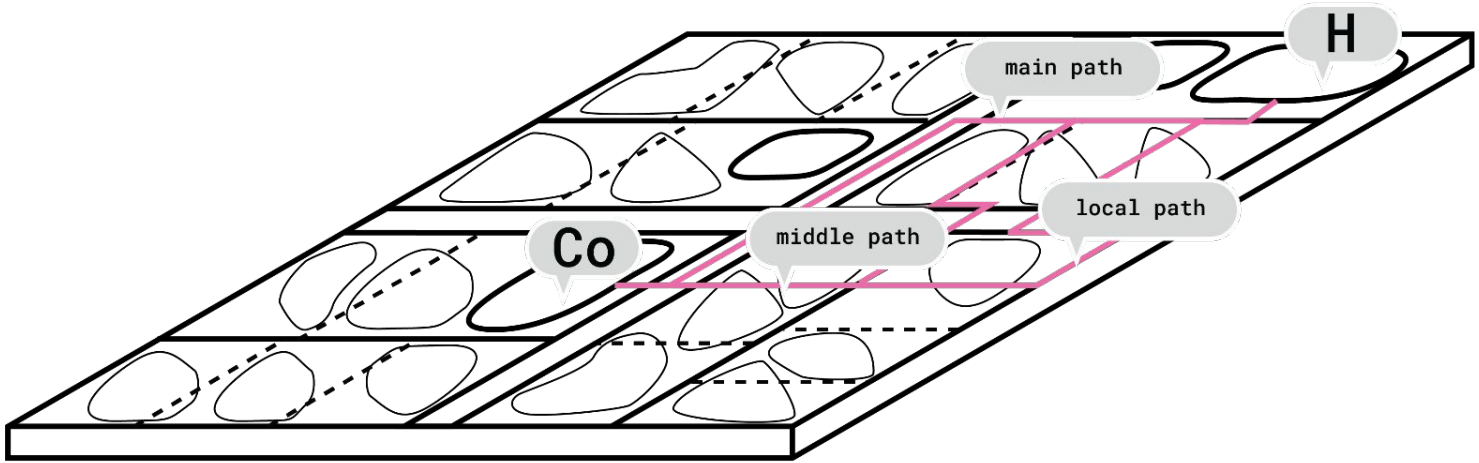


STREET SCALE

Problem: **Allocation**

Objective: Determine different scale of connections between existing infrastructure

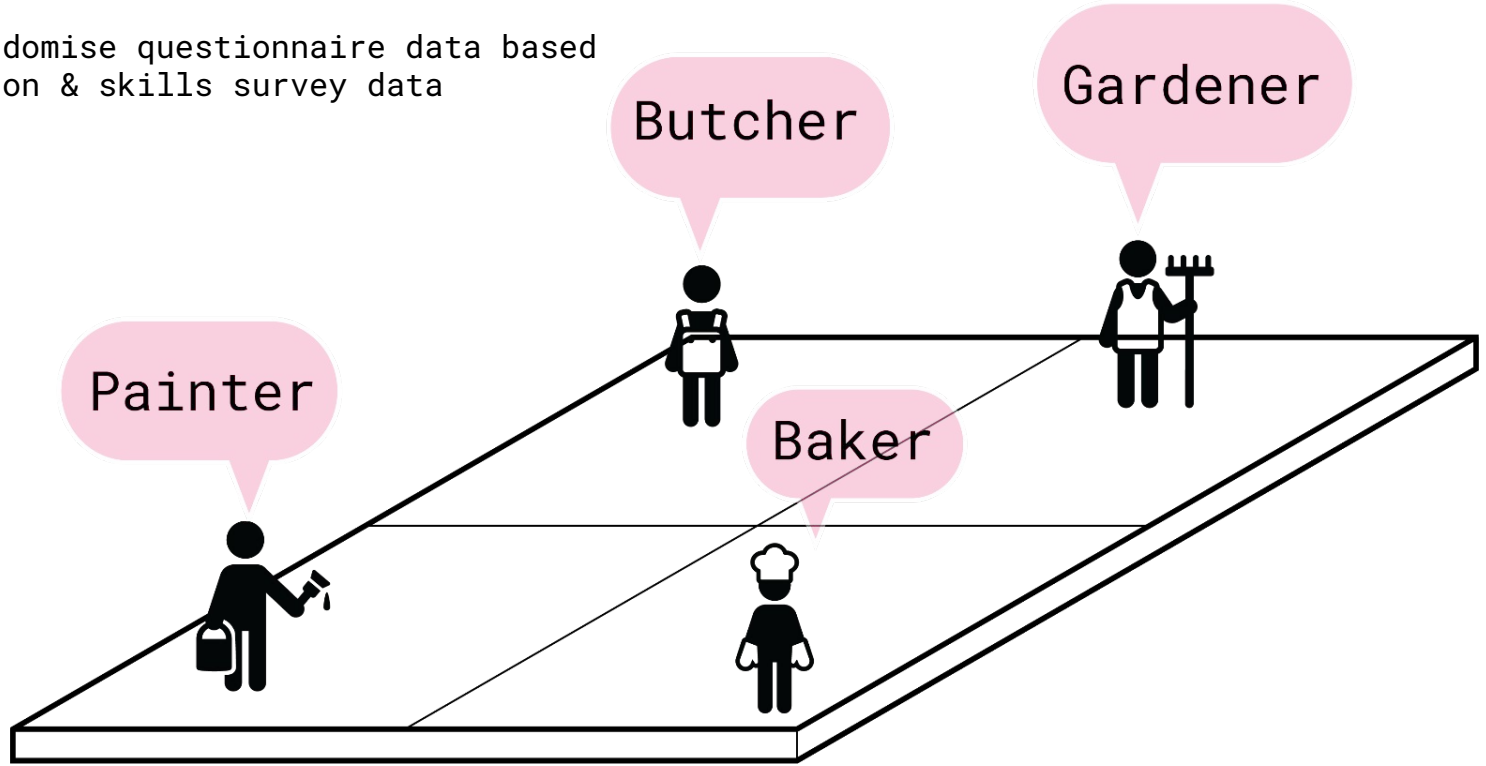
Step 5.1: Create Shortest Path between 2 amenities



STREET SCALE

Objective: Detect skills of people

Step 6: Randomise questionnaire data based on population & skills survey data

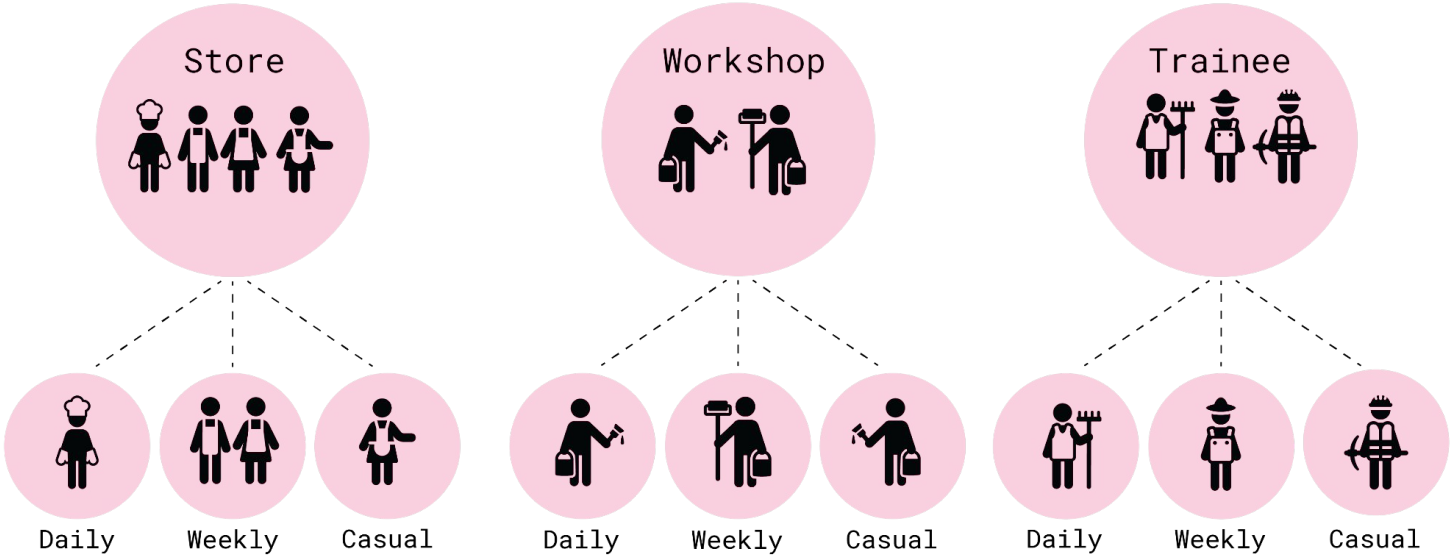


STREET SCALE

Problem: **Grouping**

Objective: Identify cluster in each district

Step 7.0: Cluster the requirements by type & user frequency

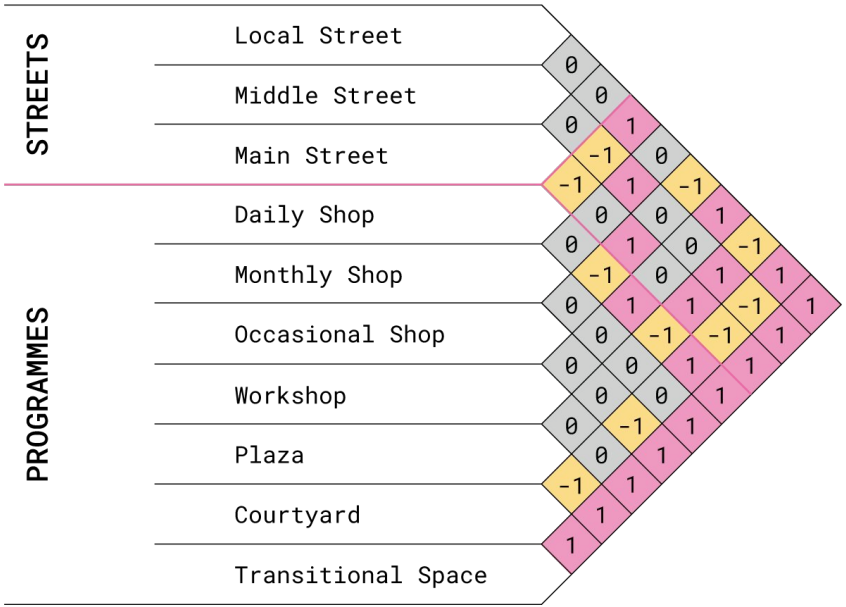


STREET SCALE

Problem: **Grouping**

Objective: Establish relationship between streets & programmes

Step 7.1: REL-Chart

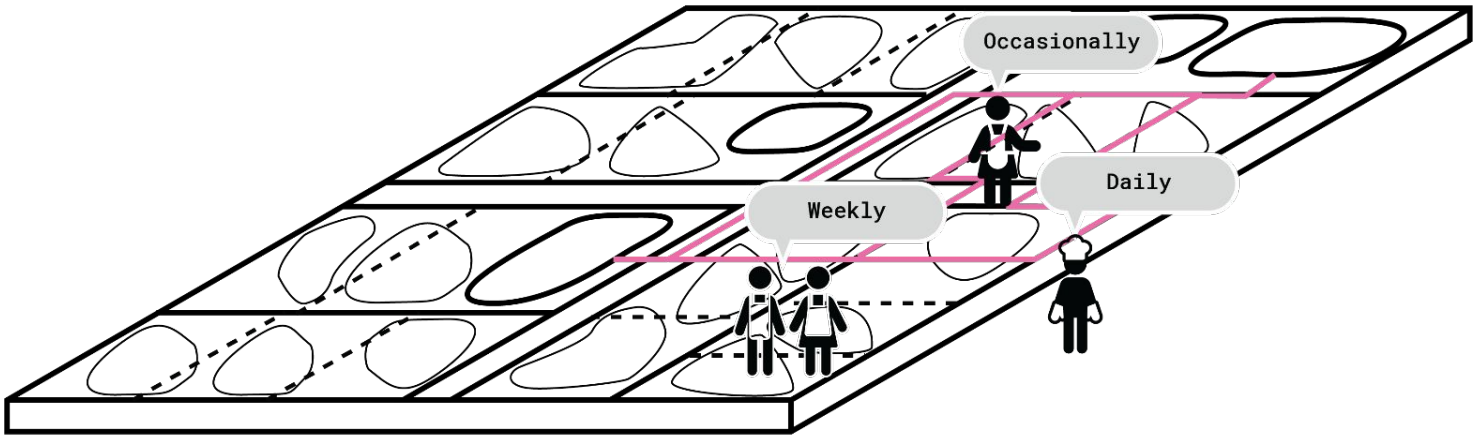


STREET SCALE

Problem: **Allocation**

Objective: Organize allocated programs accordingly

Step 7.2: Place cluster on the streets based on the REL chart

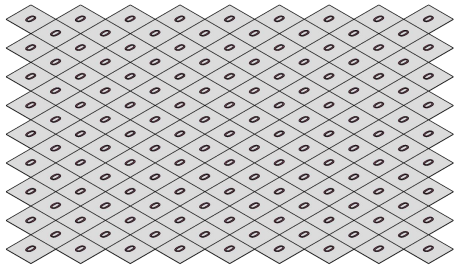


STREET SCALE

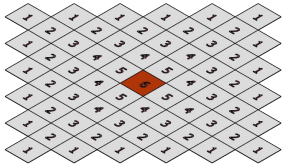
Problem: **Allocation**

Objective: Establishing the Influence Matrix

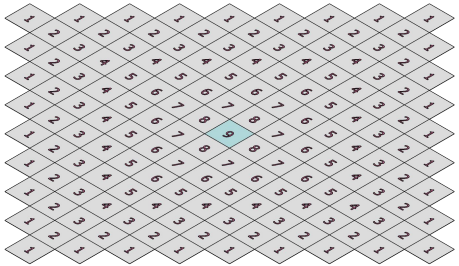
Step 7.3: Determining the public/private relation of different functions



Empty Matrix

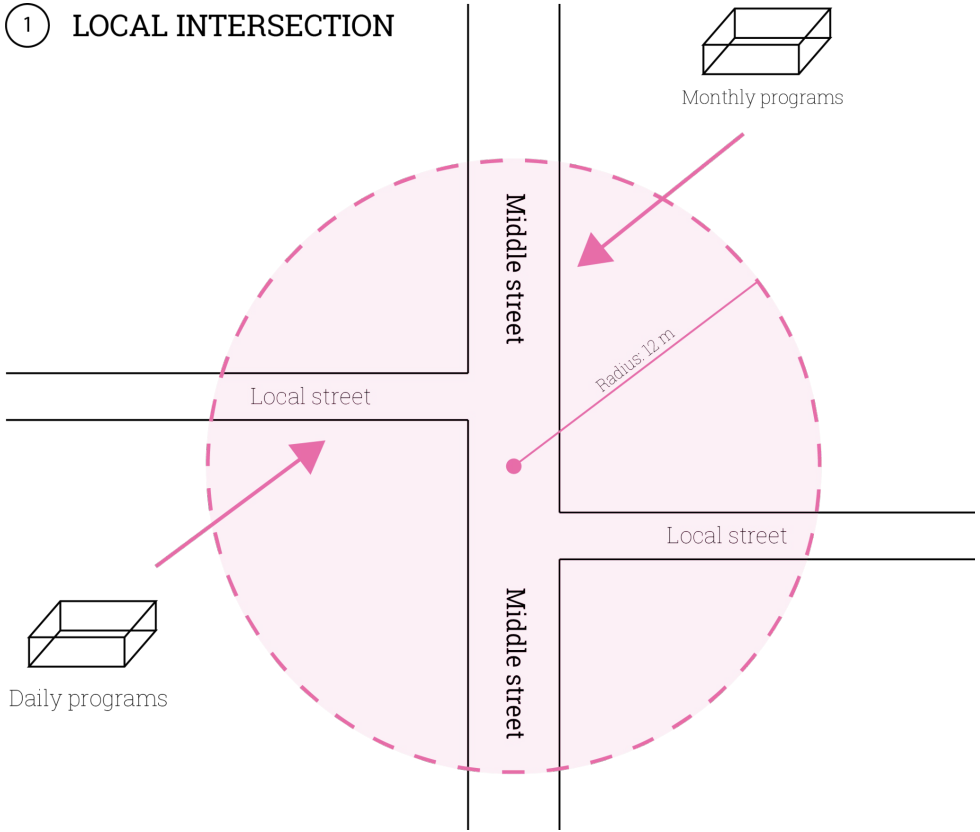


Workshop



Shop

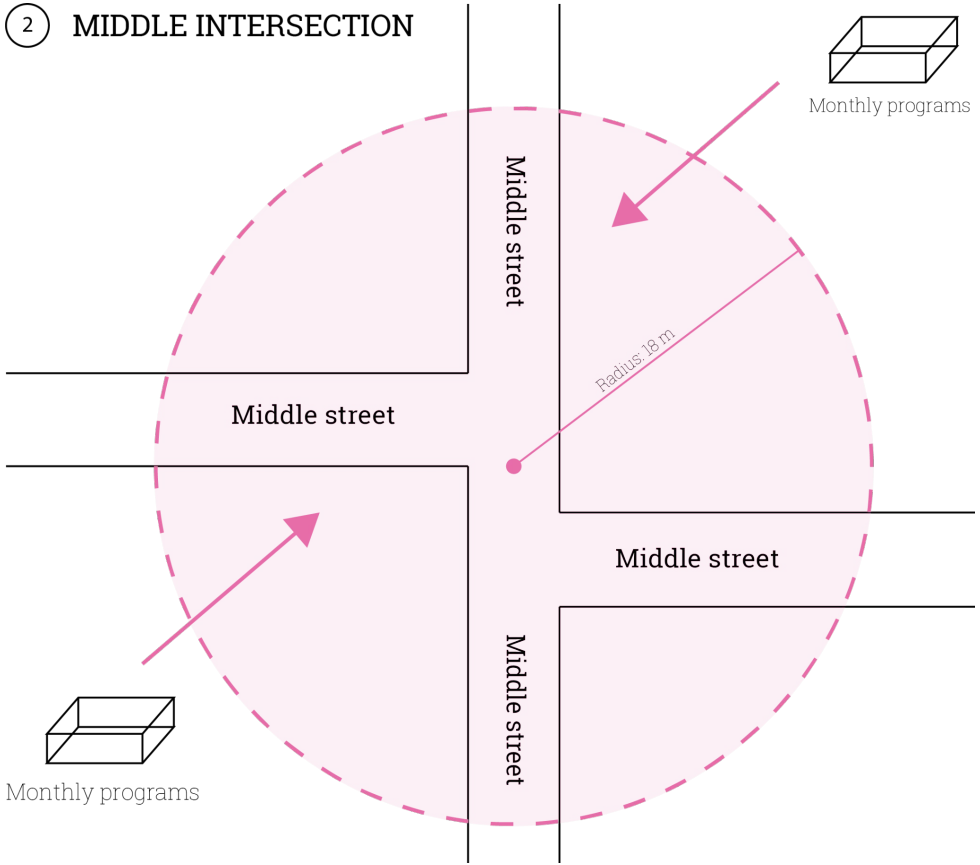
LOCAL STREET SCALE



Rules:

1. Higher frequency shops go on the corners
2. ‘Daily programs’ go on the local streets
3. ‘Monthly programs’ go on the middle streets
4. If no space within radius: increase one floor
5. Place functions from high to low score
6. Place communal spaces on the higher numbers
7. Place the courtyards on 8|7

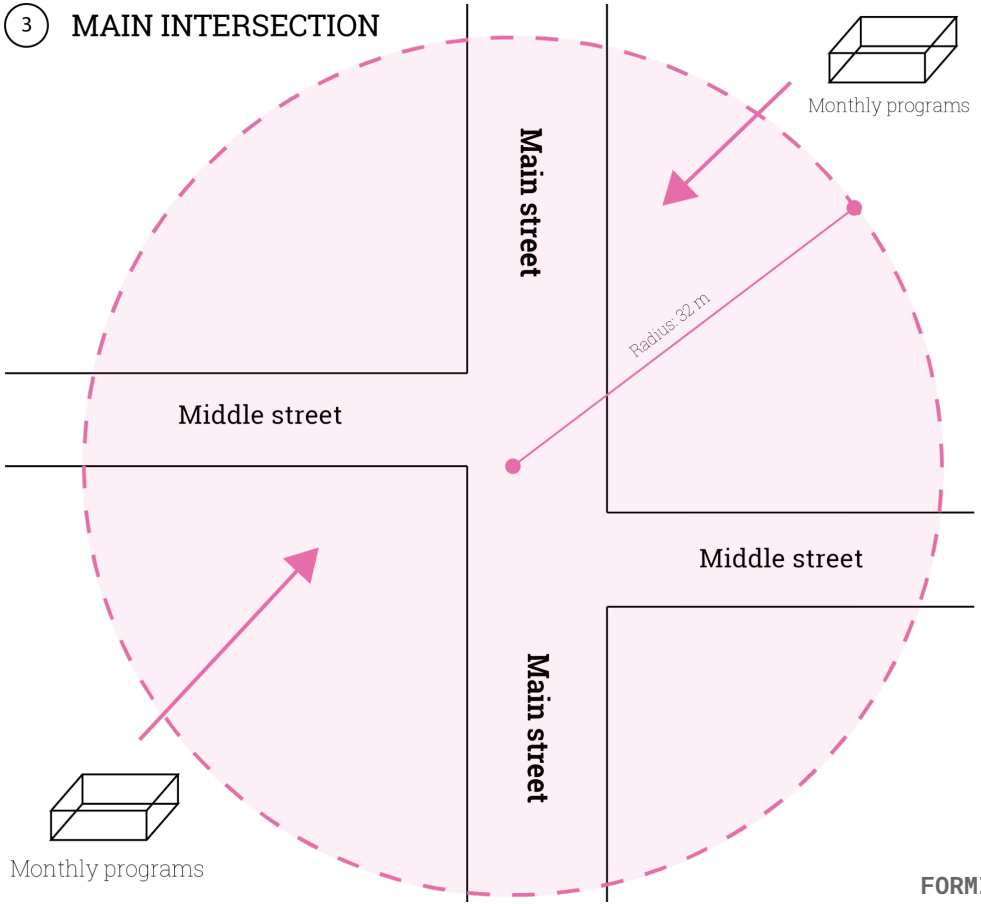
MIDDLE STREET SCALE



Rules:

1. Higher frequency shops go on the corners
2. If no space within radius: increase one floor
3. Place functions from high to low score
4. Place communal spaces on the higher numbers
5. Place the courtyards on 8|7

MAIN STREET SCALE



Rules:

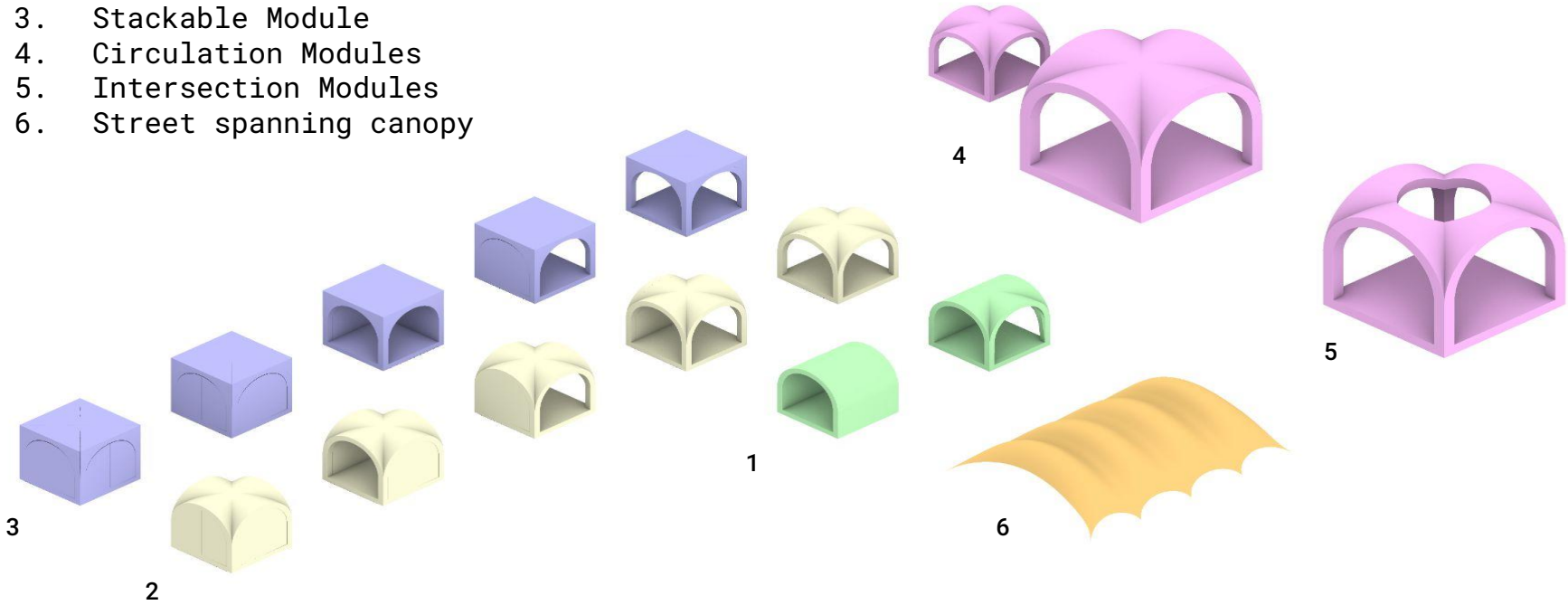
1. Higher frequency shops go on the corners
2. ‘Monthly programs’ go on the local streets
3. ‘Occasionally programs’ go on the middle streets
4. If no space within radius: increase one floor
5. Place functions from high to low score
6. Place communal spaces on the higher numbers
7. Place the courtyards on 8|7

Pick Up 1 Node
(Local - Medium street in this case)

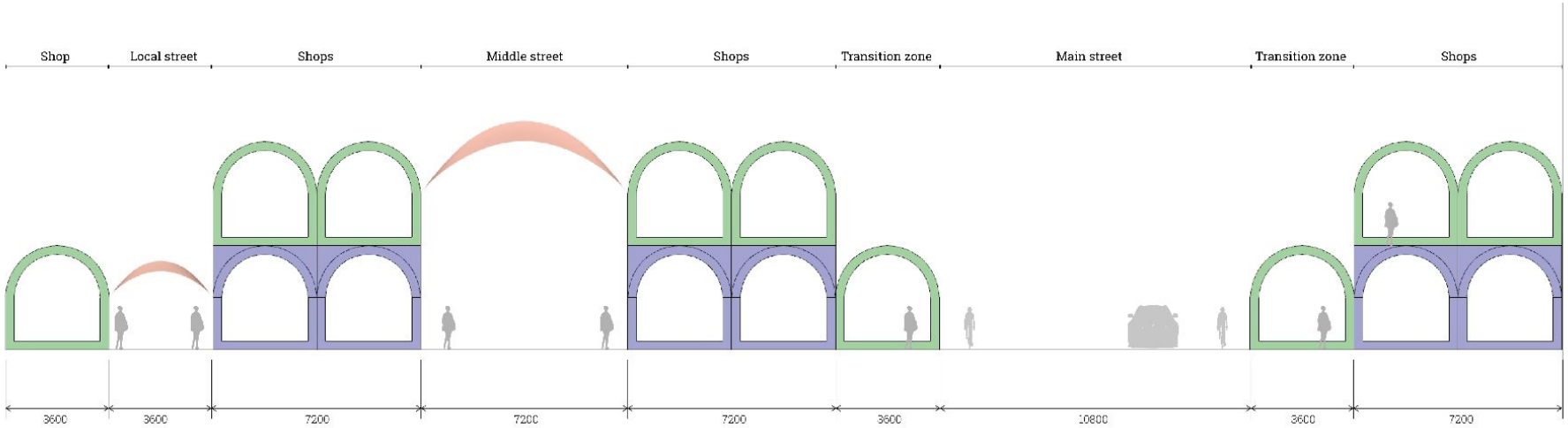
BUILDING SCALE

Module Types:

1. Barrel Vault
2. Groin Vault
3. Stackable Module
4. Circulation Modules
5. Intersection Modules
6. Street spanning canopy



BUILDING SCALE



NEXT STEPS

1. Work out detailed modules
2. Correct the code
3. Design street connections
4. Structural analysis