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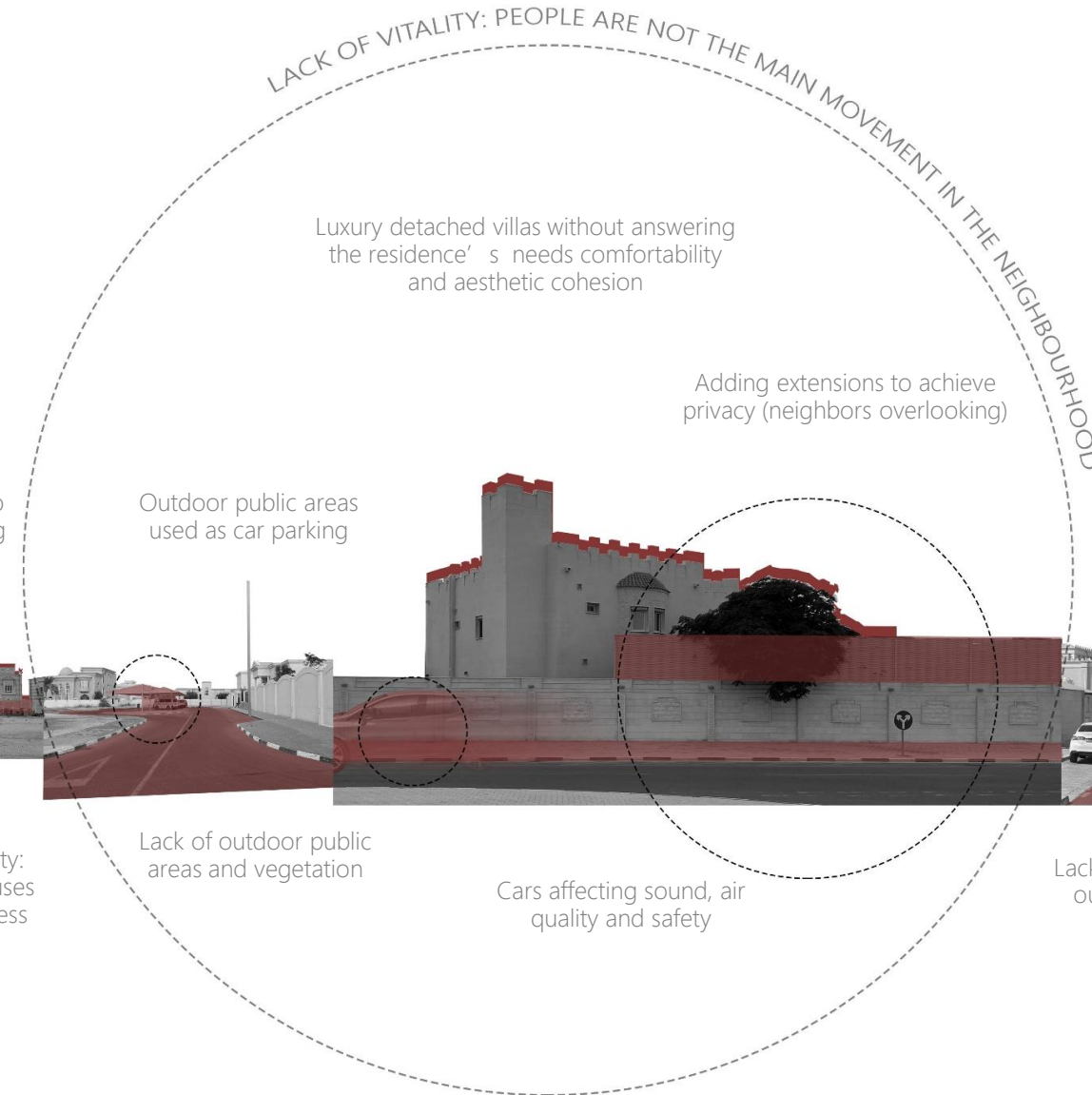
Rethinking Qatari neighborhoods and Dwellings

Bachelor of Architecture Undergraduate Thesis

By Moza Al Obaidan

The formation of Qatar has been influenced by western urban planning strategies, mainly car oriented planning, which has affected the definition of place, quality of life and vitality in Qatar. In addition, several building regulations and architectural styles have been introduced, including single detached villas (stand alone).

Stand alone villas are the only available options for Qatari residence, with very large plot sizes (800 to 1200 sqm). Those villas design and regulations – by evidence - do not match the conservative Qatari society which affected the comfortability, privacy and needs of the residence as well as it does not respect the cultural and climatic norms.



Windows and outdoor balconies not used to maintain privacy

Neglected and unused Plots

Limited privacy due to neighbors overlooking

Outdoor public areas used as car parking

Adding extensions to achieve privacy (neighbors overlooking)

Unutilized plot area due to setbacks

Limited interaction with nature

Lack of walkability

Outdoor areas utilized for car parking

Neglected and unused Plots

Outdoor areas in villas prioritized for car parking

High individuality: Segregated houses with low openness

Lack of outdoor public areas and vegetation

Cars affecting sound, air quality and safety

Lack of microclimate design, outdoor public spaces & vegetation

Architectural design does not reflect cultural identity including privacy concerns



Ariel view of Neighborhoods in Onaiza, Doha, Qatar | Source: Ammar Al Qamash



VIEW FROM COMMUNAL GARDEN



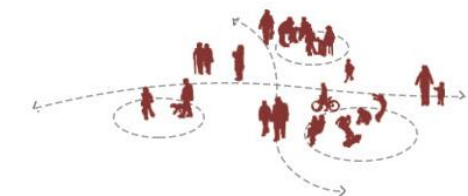
Onaiza 66, Legtiafiya, Julaiah and Hazm Almarkhiya zones, Doha, Qatar | Source: Google Earth



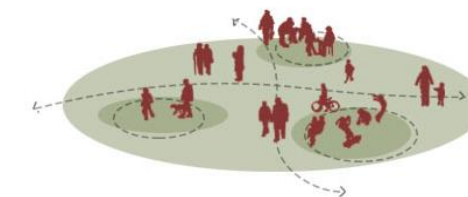
VIEW FROM JUMA MOSQUE PLAZA

Following the **Form Based Coding** movement, this project comes up as a comprehensive bottom-up approach to increase the vitality and livability and quality of life of neighborhoods in Qatar through Firstly, recommending an overall neighborhood masterplan prototype design. And Secondly, designing several housing typologies that matches the culture of the Qatari society.

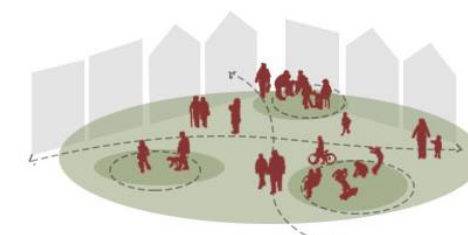
GOALS AND OBJECTIVES



Enhance the neighborhood vitality



Enhance the neighboring relationship



Enhance Qatari residence' s houses

THE DESIGN

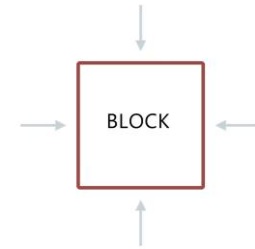
Proposal



Islamic city identity
(Neighborhood grows around mosque)



Mosque and daily needs to be within walkable distances (Maximum of 200 meters)



Smaller block sizes (Achieving microclimate, thermal comfort, walkability and social interaction)



A medium density neighborhood serving the cultural identity of the Qatari community

Size: 100,000 sqm

Number of users: 1200 -2000

Built: 70,000 sqm

Non-built: 30,000 sqm

Users

The Qatari Community including:



Qatari nuclear families



Qatari extended families



Expatriate families



Expatriate and Domestic workers

Neighborhood program:

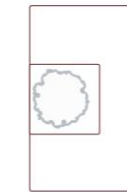
- 600 sqm — Mixed use units (x 16)
- 360 sqm — Daily local mosque
- 840 sqm — Juma mosque
- 1000 sqm — Kindergarten
- 800 sqm — Gym
- 1000 sqm — Community center
- 600 sqm — Grocery store
- 50 sqm — Retails (x 24)
- 1200 sqm — Farmers support center
- 2500 sqm — Neighborhood park
- 27,500 sqm — Communal gardens
- 54,500 sqm — Residential houses (129 units)

The ground floor of the mixed use units must include one of the following: (Retails, gym, neighborhood library, kindergarten, community center, grocery store)



Residential Houses typologies:

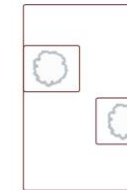
10 meters courtyard house



A compact form of a Qatari courtyard house that suits a start up family

Family members: 4 (expandable)
Servant: 2-4
Plot area: 200 sqm
Buildable area: 100%

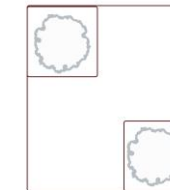
Two courtyard house



For a larger family, where nature and privacy are maximized

Family members: 6 (expandable)
Servant: 2-3
Plot area: 250 sqm
Buildable area: 100%

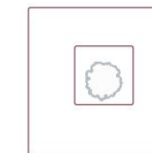
Extended family courtyard house



An inherited culture, three generation house, both are totally private yet totally open upon preference

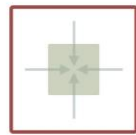
Family members: 9 (expandable)
Servant: 2-6
Plot area: 400 sqm
Buildable area: 100%

Shared Courtyard Apartments



For young Qatari families, standard and duplex apartments with a shared courtyard and social experience

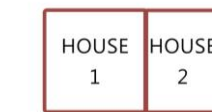
Plot area: 400 sqm
Buildable area: 100%



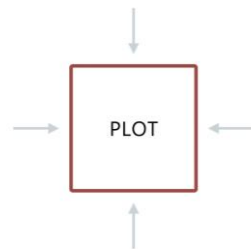
Each block has outdoor communal space (compact, achieving thermal comfort, social and nature interaction)



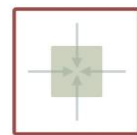
Mixed use environment (serve residence, expertise and diversity)



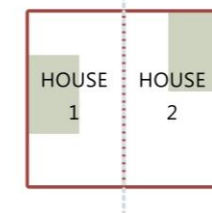
Different houses typologies within the same block (diversity)



Minimize plot size (200 sqm to 400 sqm, depend on family size)



Regenerate introvert design (courtyard house) (matches cultural and climatic characteristics)



Minimize setbacks with 100% built up area, resulting in attached courtyard houses with fire rated walls between



VIEW FROM SHARED RESIDENTIAL STREET



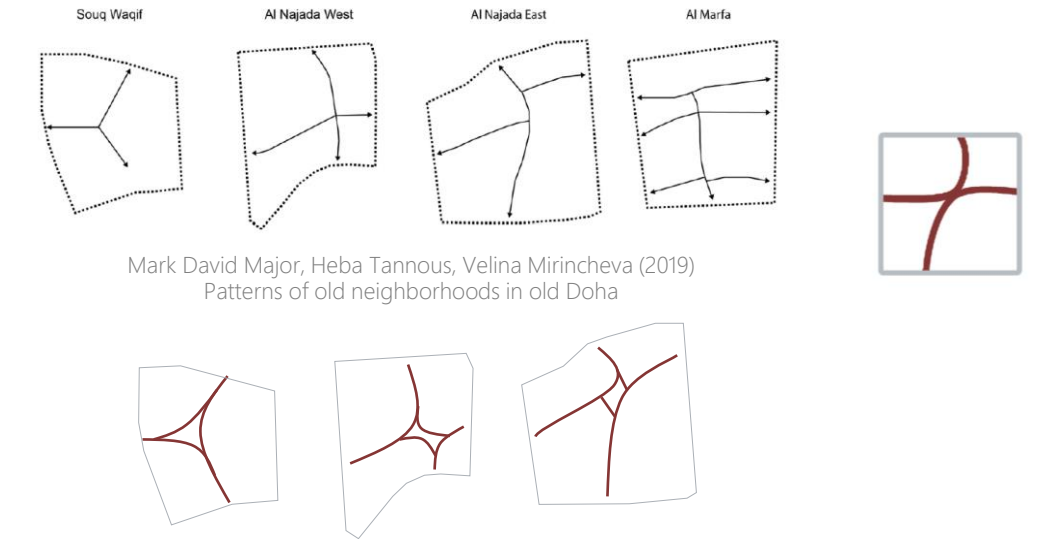
(left) Freej Al Najada, (Right) Souq waqif | Source: www.twitter.com

Design key: Identity

Preserving the conservative society and built identity

Design components

1. Main streets



Inspired by Pin-wheel urban pattern (identity) of old neighborhoods of Qatar

2. Nodes

Mosques as the main node to define walkability and walking distances, surrounded by daily essential needs



3. Shared residential streets

Inspired by old skeek (sika: individual), the spaces between buildings are used for transportation (cars, cycling, walking), allowing very low and caution driving speed with maximum pedestrian and cyclists comfortability. (Source: Nacto.org). This also allows the shared street to be used as a public space for recreation, socializing and leisure.



4. Communal gardens

Centralized around different houses typologies



VIEW FROM LOCAL MOSQUE PLAZA



VIEW FROM JUMA MOSQUE PLAZA



20 meters



VIEW FROM PUBLIC PARK



VIEW FROM COMMUNAL GARDEN

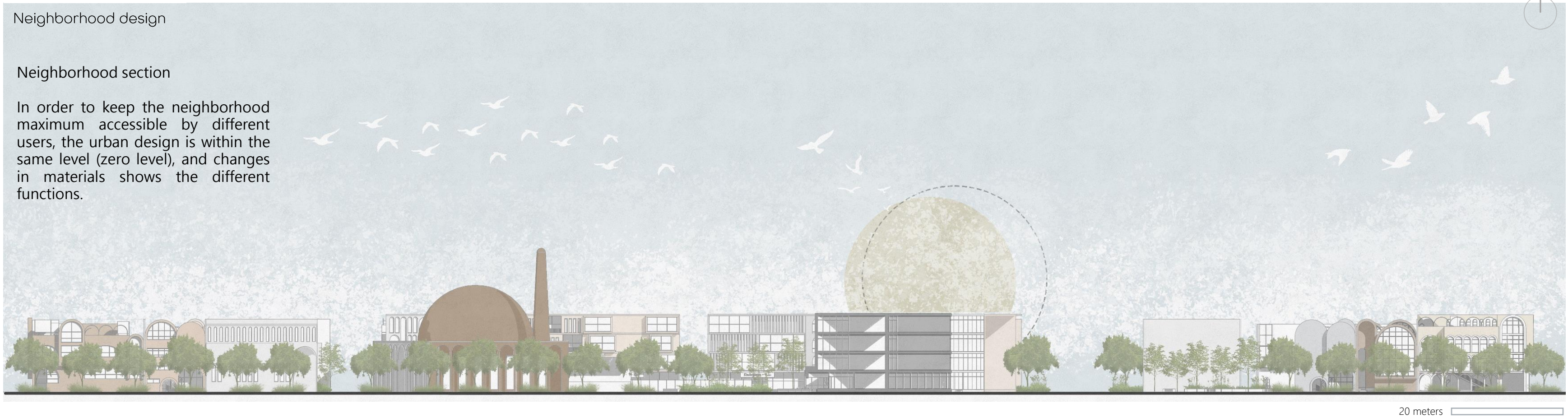


VIEW FROM JUMA MOSQUE PLAZA

Neighborhood design

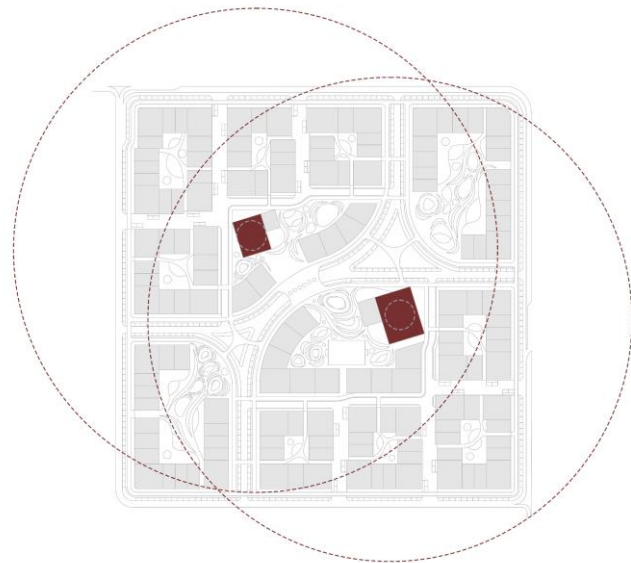
Neighborhood section

In order to keep the neighborhood maximum accessible by different users, the urban design is within the same level (zero level), and changes in materials shows the different functions.



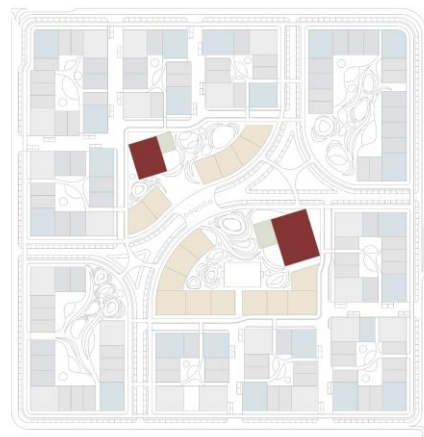
20 meters

NODES



A local mosque, Juma mosque and daily needs within 200 meters radius

BUILDING TYPOLOGIES



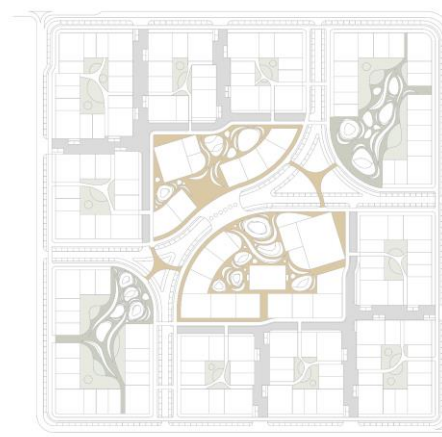
- Mosque
- Farmers market
- Mixed-use (Serviced apartments)
- Shared courtyard apartments
- Two courtyard house
- Extended family courtyard house
- 10 m courtyard house

NETWORKS



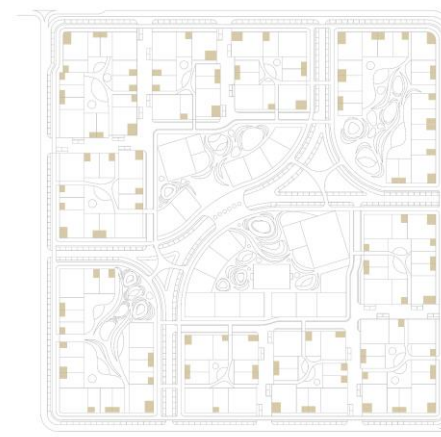
- Metro link/bus stop
- Main street (cobblestone pavement)
- Shared streets (cobblestone pavement)
- Pedestrian/cyclists (washed gravels)
- Plazas & pathways (block pavement)

OUTDOOR PUBLIC SPACES



- Public park
- Communal garden
- Public plaza

MAJLIS (PUBLIC/MALE SPACES)



Majlis oriented toward the public streets, while the communal gardens to be family oriented

PARKING



- Public parking
- Semi-public parking
- Private parking
- Bus stop/metro link stop



VIEW FROM JUMA MOSQUE PLAZA



VIEW FROM JUMA MOSQUE PLAZA

JUMA MOSQUE

A main node, placed on the main roads and based on walkable distance (200 meters radius) covering maximum residential units, this also maximize thermal comfort. The mosque is surrounded by a farmers' market, a multi-playground, a large plaza and with mixed use buildings including retails and other communal services



LOCAL DAILY MOSQUE

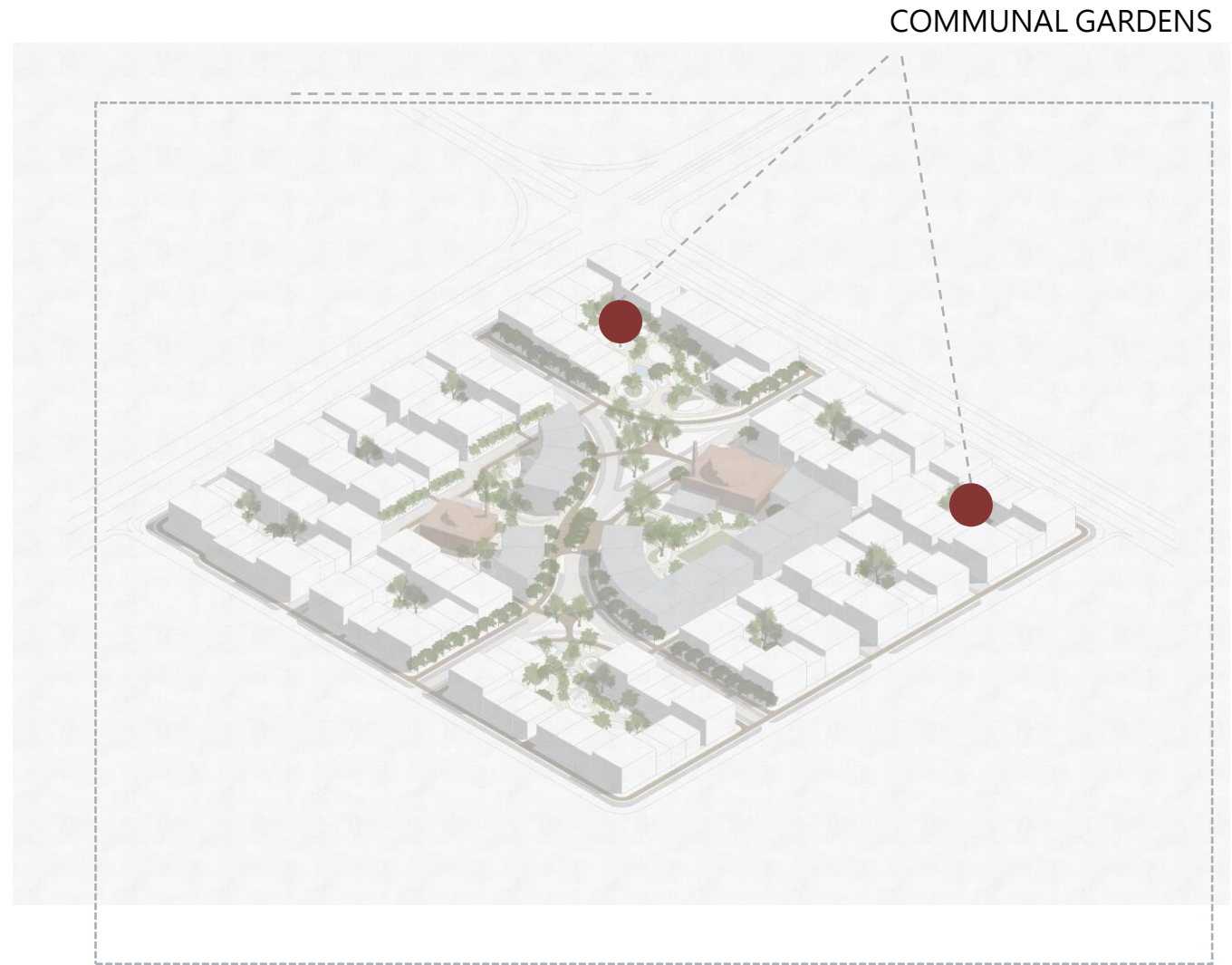
Placed in a small plaza, behind several mixed-use buildings, allowing more locality. The space in front of the mosque is left empty for temporary events on the main street (Weddings/condolences). The local plaza is connected to the large plaza (Juma mosque)



VIEW FROM LOCAL MOSQUE PLAZA



VIEW FROM LOCAL MOSQUE PLAZA



A semi-public central open space in each residential block, planted and maintained under the residence's responsibility which act as a catalyst for neighbors' relationships



Neighborhood design

Between residential blocks and mixed-use buildings,, allow transportation (cars, cycling, pedestrian), used as public space for recreation, socializing and leisure, while large trees designed for shading and privacy.



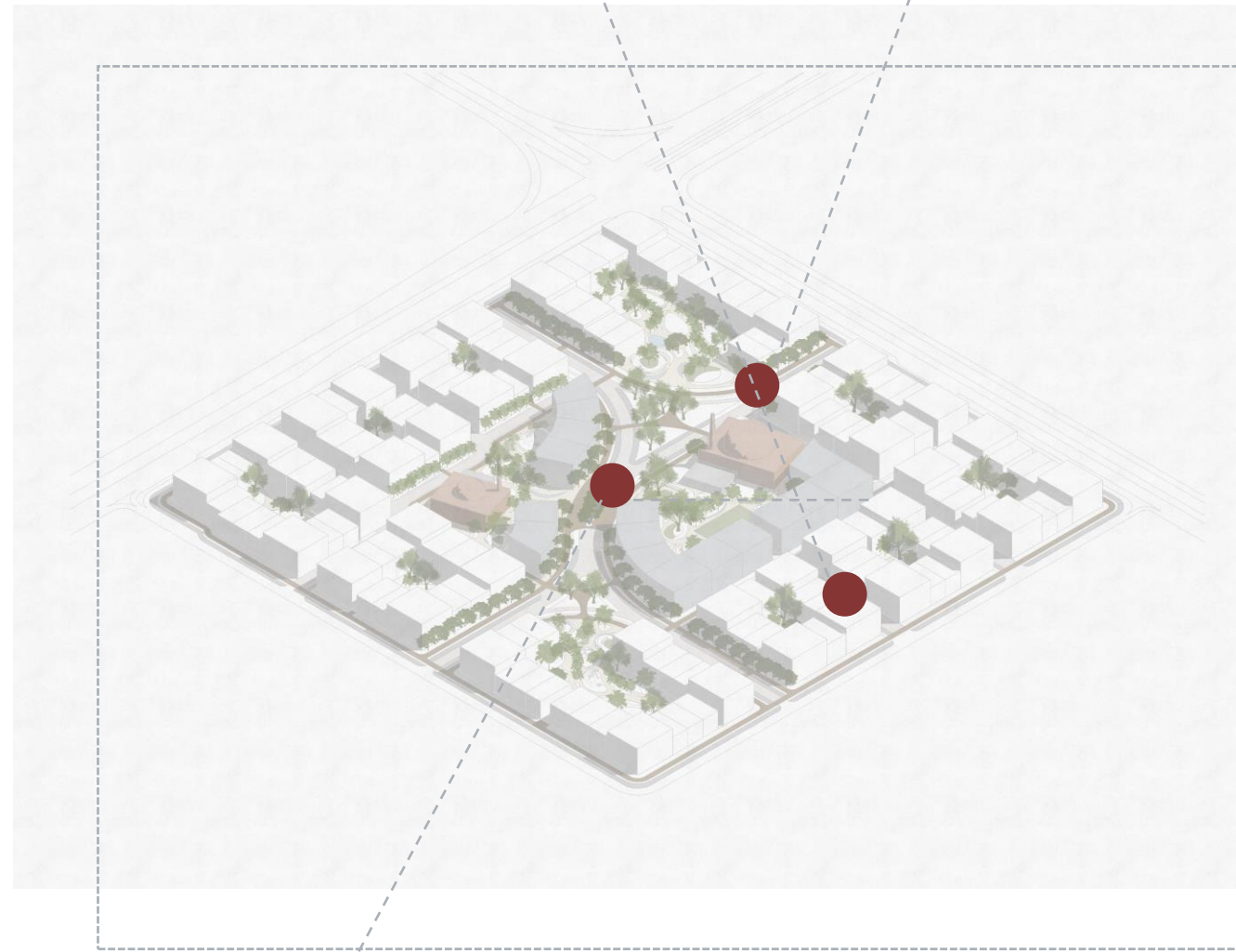
VIEW FROM SHARED RESIDENTIAL STREETS



VIEW FROM SHARED RESIDENTIAL STREETS

SHARED RESIDENTIAL STREETS

MAIN STREETS



CENTRAL PLAZA

Two ways car access with car parking, bus stops, side walks and large trees for shading and privacy. Streets are inclined to collect water and reuse it in landscape.



VIEW FROM MAIN STREET



VIEW FROM CENTRAL PLAZA



Prototype expansion

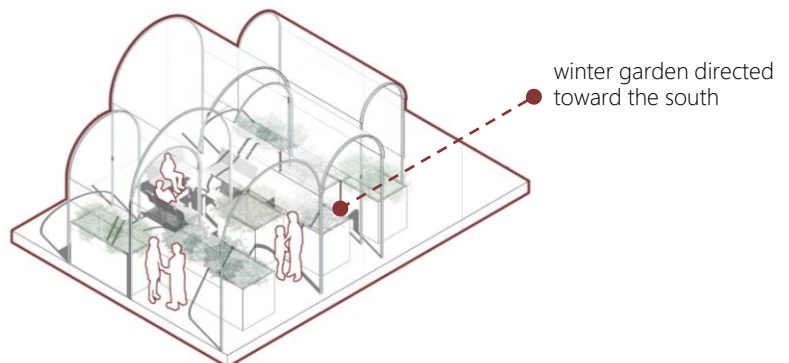
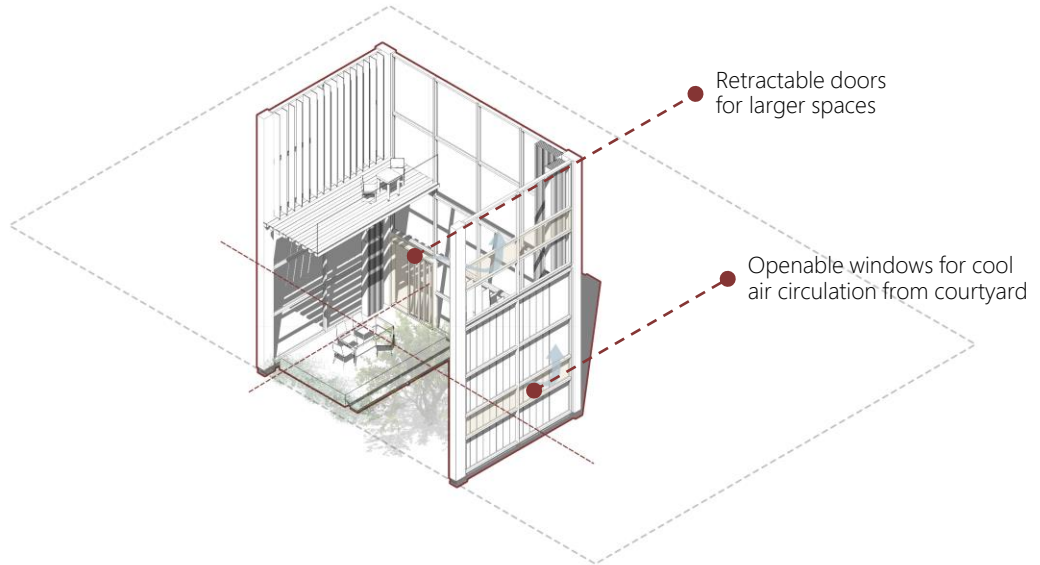
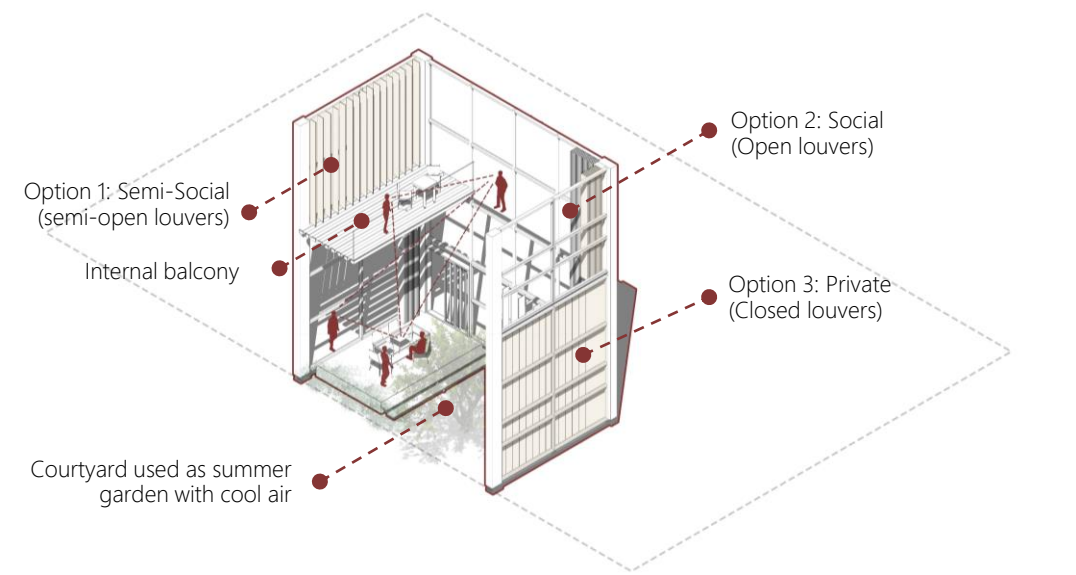
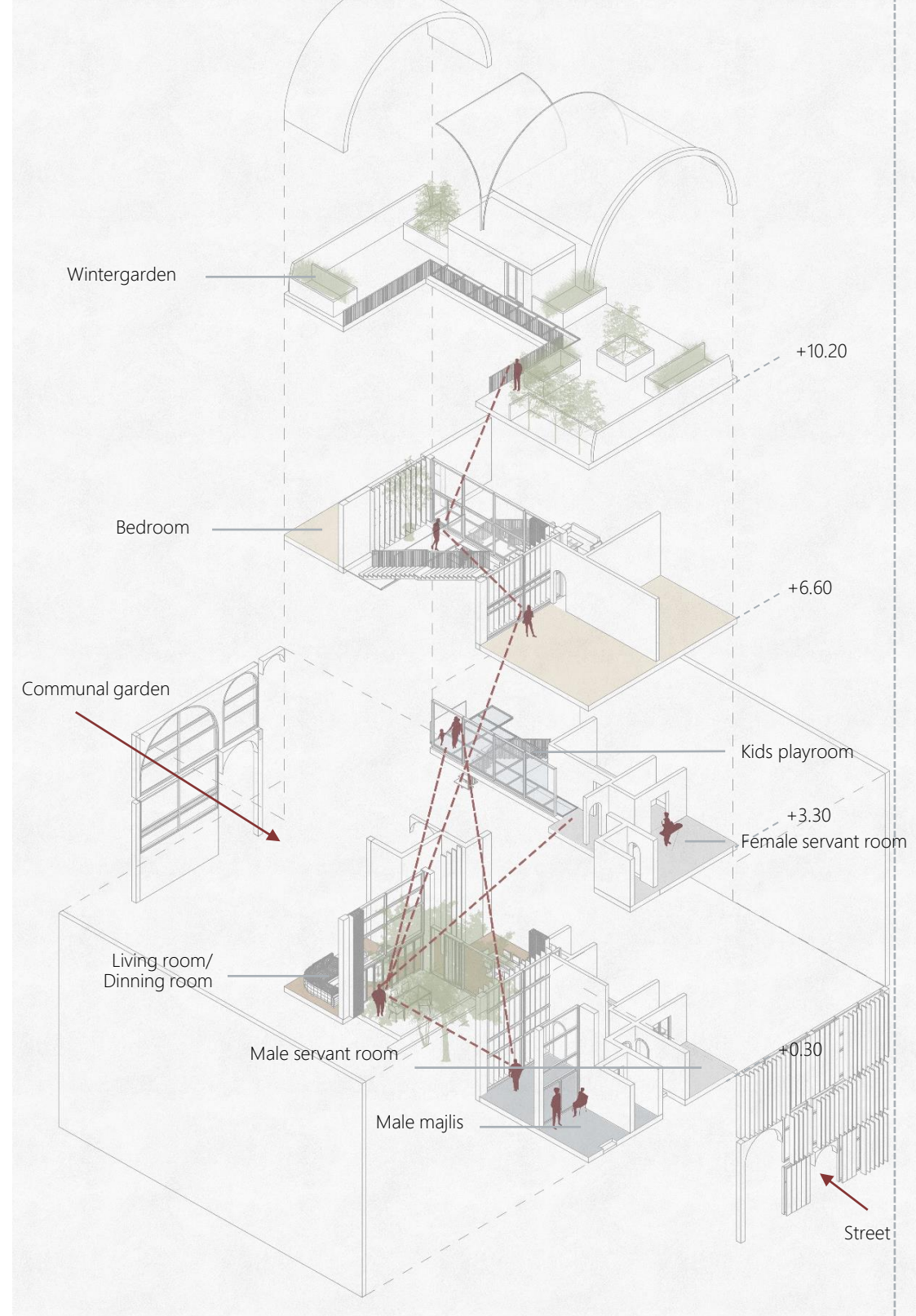


- The neighborhood is designed to be used anywhere in Qatar
- Can be used as a prototype for future extension
- In case of future extension, the design is mirrored both vertically and horizontally to achieve a central space between the four neighborhoods used as an Eid mosque. Two of the neighborhoods will have a local mosque as well as a Juma mosque (used daily as well as Friday prayer), while the other two neighborhoods will have only two local mosques, and their residence can use the other mosques of other neighborhoods on occasions.
- In case of neighborhoods with two local mosques, the two local mosques are placed near the residential houses, surrounded by mixed use units. On the other hand, neighborhoods with a Juma mosque and a local mosque, juma mosque is placed beside the main street introducing publicity and ease of reach, while local mosque is placed near residential houses to allow locality and privacy..

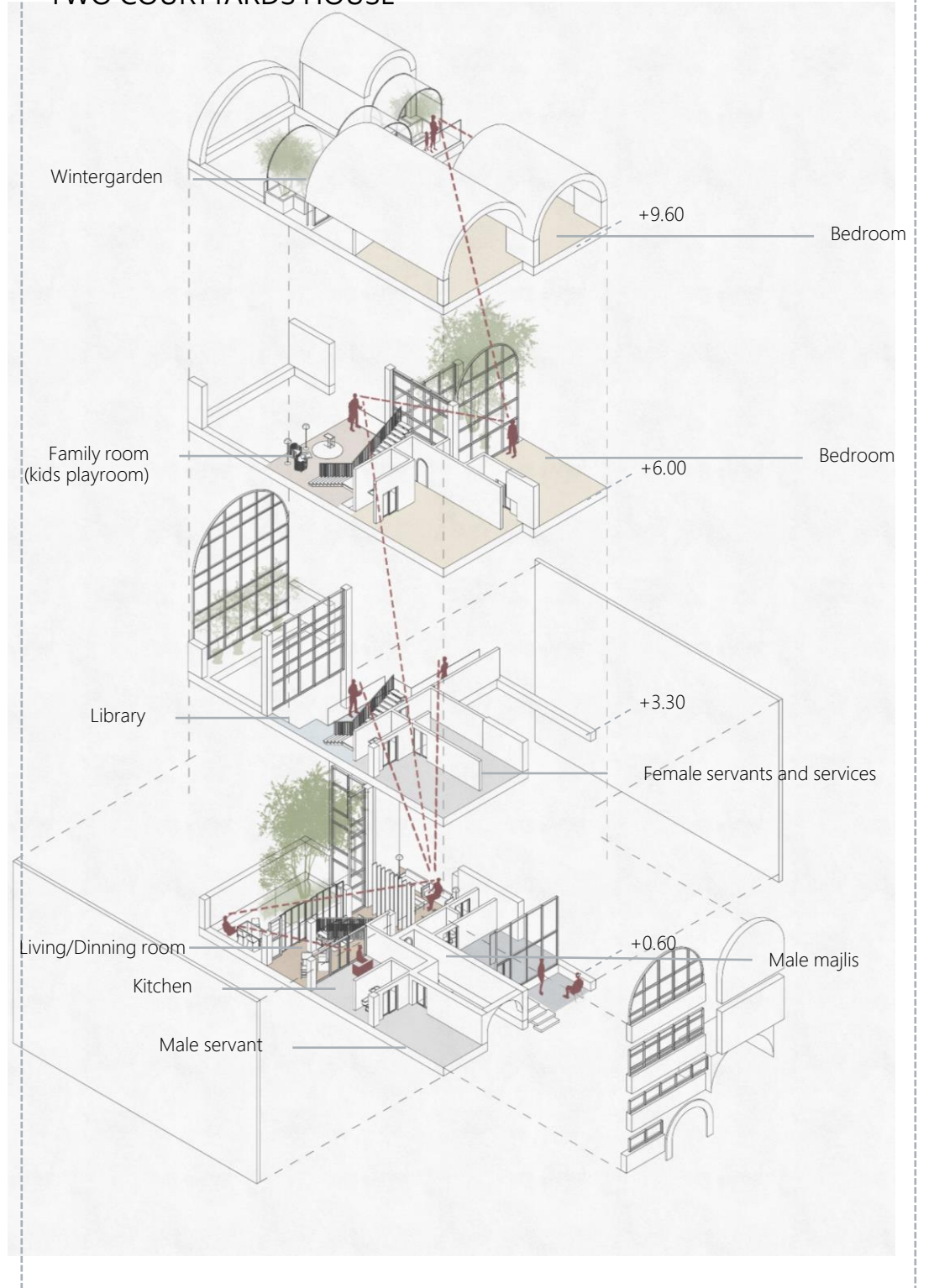


Houses' design

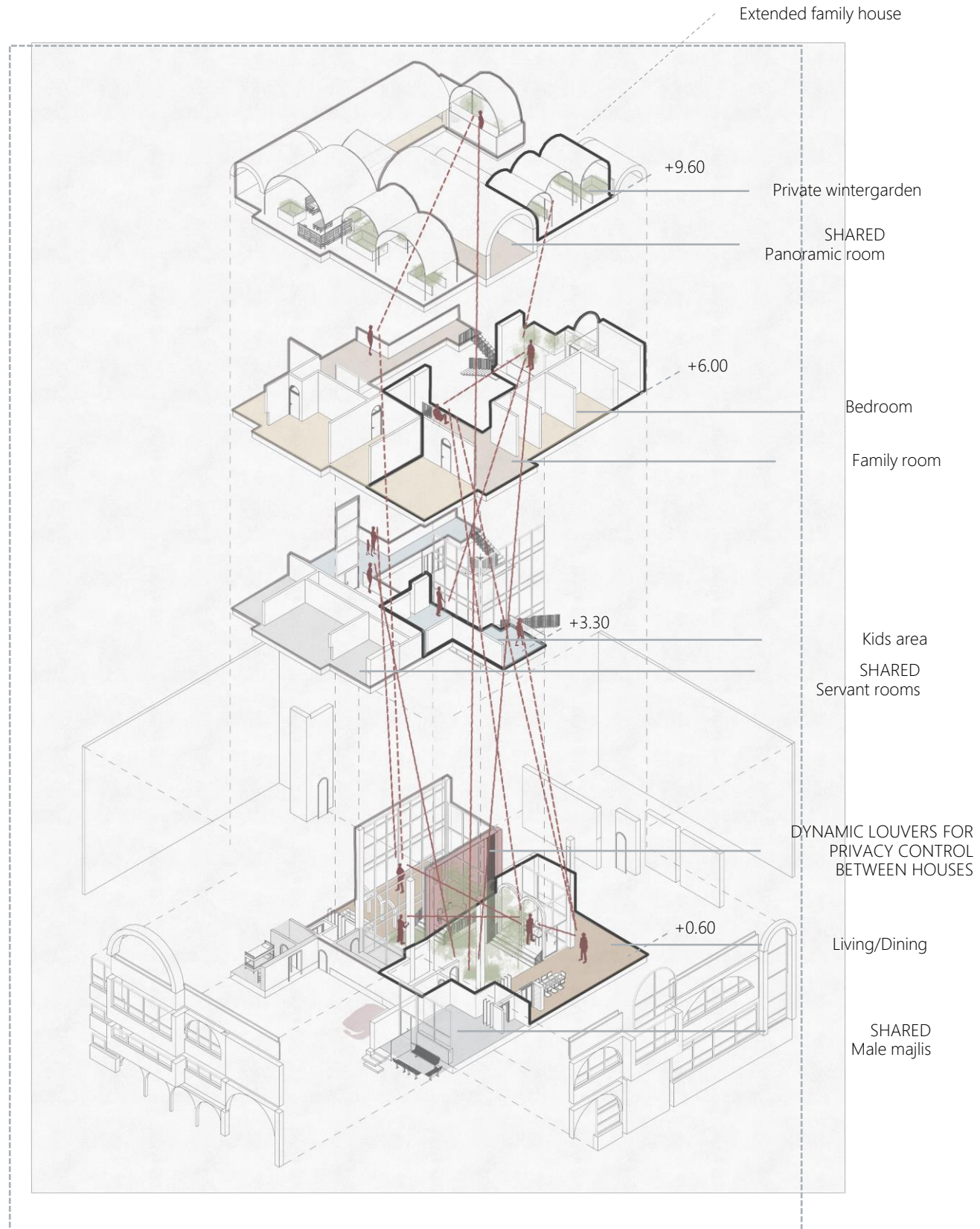
10 METERS COURTYARD HOUSE



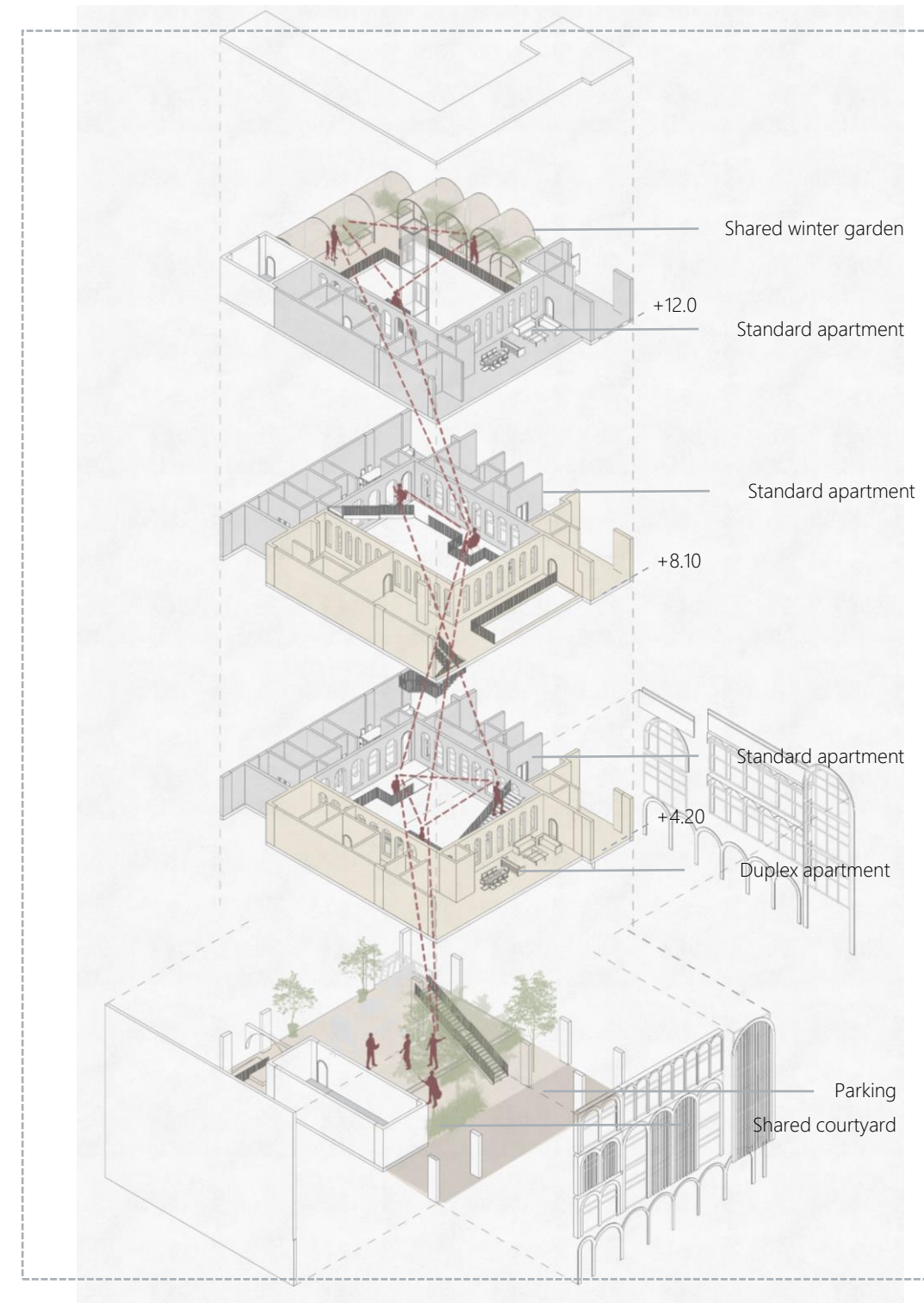
TWO COURTYARDS HOUSE



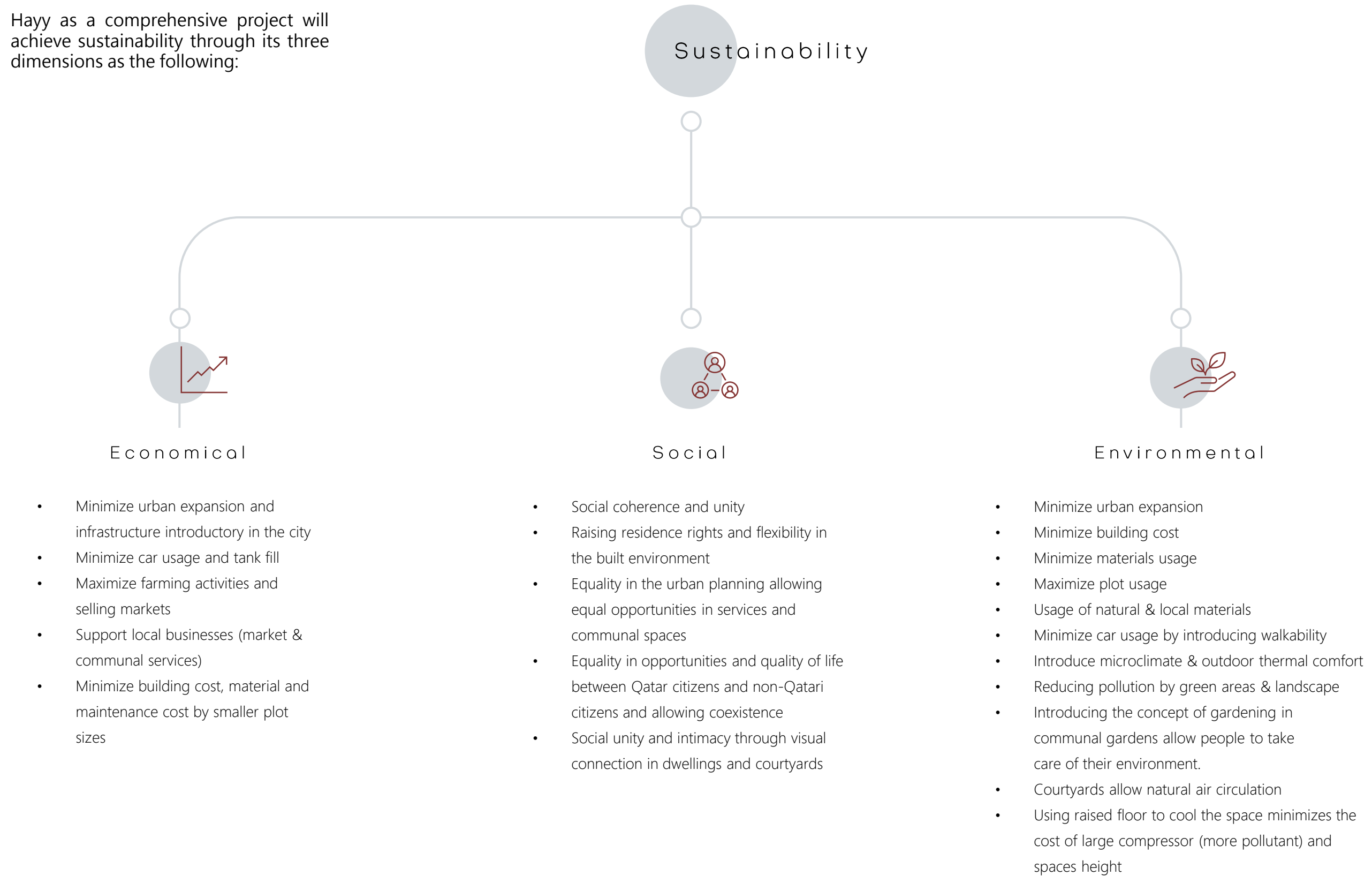
EXTENDED FAMILY HOUSE



SHARED COURTYARD APARTMENTS



Hayy as a comprehensive project will achieve sustainability through its three dimensions as the following:



Economical

- Minimize urban expansion and infrastructure introductory in the city
- Minimize car usage and tank fill
- Maximize farming activities and selling markets
- Support local businesses (market & communal services)
- Minimize building cost, material and maintenance cost by smaller plot sizes

Social

- Social coherence and unity
- Raising residence rights and flexibility in the built environment
- Equality in the urban planning allowing equal opportunities in services and communal spaces
- Equality in opportunities and quality of life between Qatar citizens and non-Qatari citizens and allowing coexistence
- Social unity and intimacy through visual connection in dwellings and courtyards

Environmental

- Minimize urban expansion
- Minimize building cost
- Minimize materials usage
- Maximize plot usage
- Usage of natural & local materials
- Minimize car usage by introducing walkability
- Introduce microclimate & outdoor thermal comfort
- Reducing pollution by green areas & landscape
- Introducing the concept of gardening in communal gardens allow people to take care of their environment.
- Courtyards allow natural air circulation
- Using raised floor to cool the space minimizes the cost of large compressor (more pollutant) and spaces height

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