



P5

GRADUATION PROJECT

KEJETIA INTERVENTIONS

GIVING PUBLIC FORM TO THE KUMASI CENTRAL MARKET

BY NINA SICKENGA

CONTENT

1. GHANAIAN EXPLORATIONS

2. KEJETIA ANALYSIS

2.1. LESSONS LEARNED

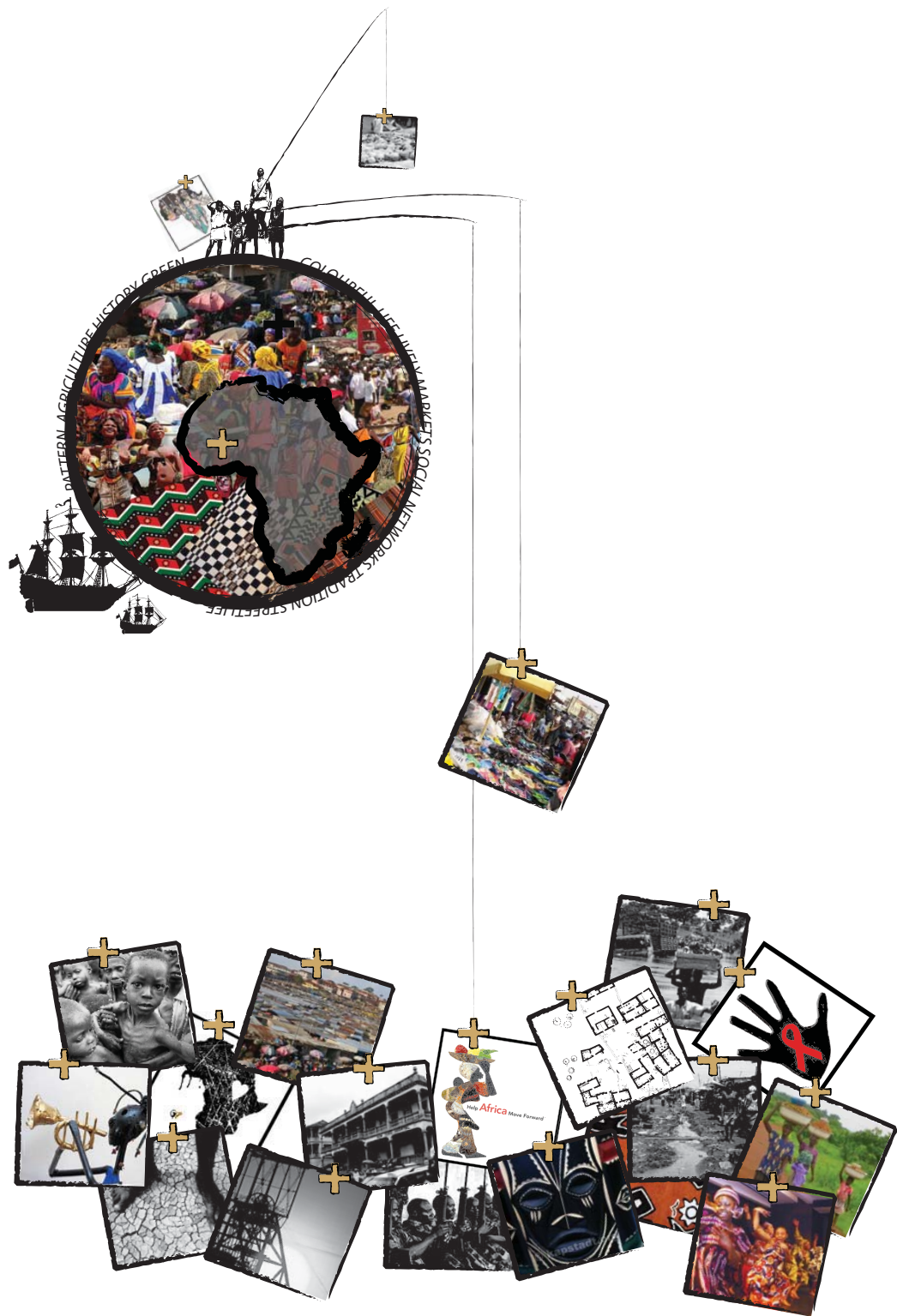
3. INTERVENTION

4. REFLECTION

5. QUESTIONS

1.

GHANAIAIAN EXPLORATIONS



“ WE ONLY ASSOCIATE AFRICA WITH CHARITY ”

www.vpro.nl/programma/vandisinafrika

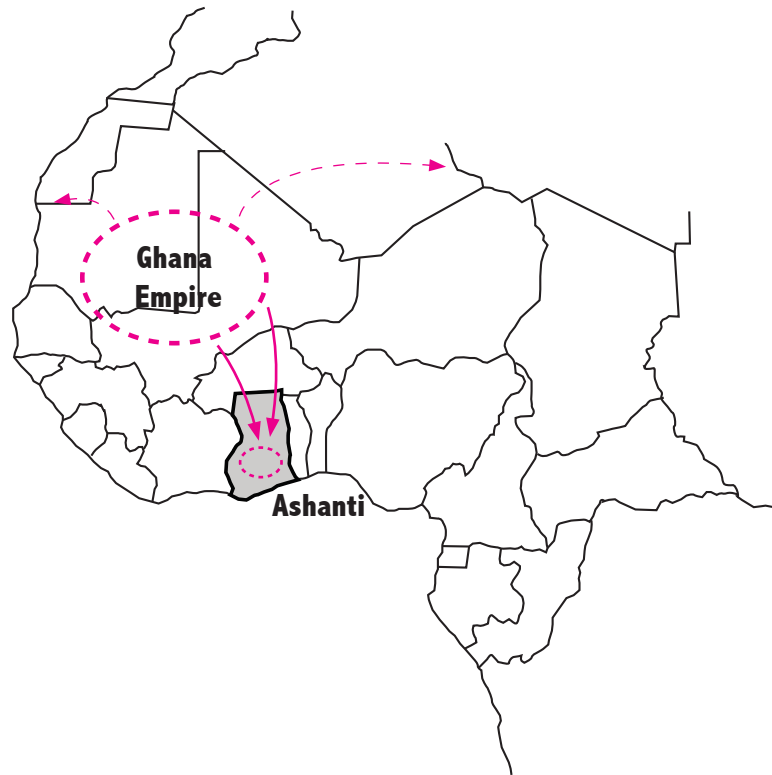


LOCATION

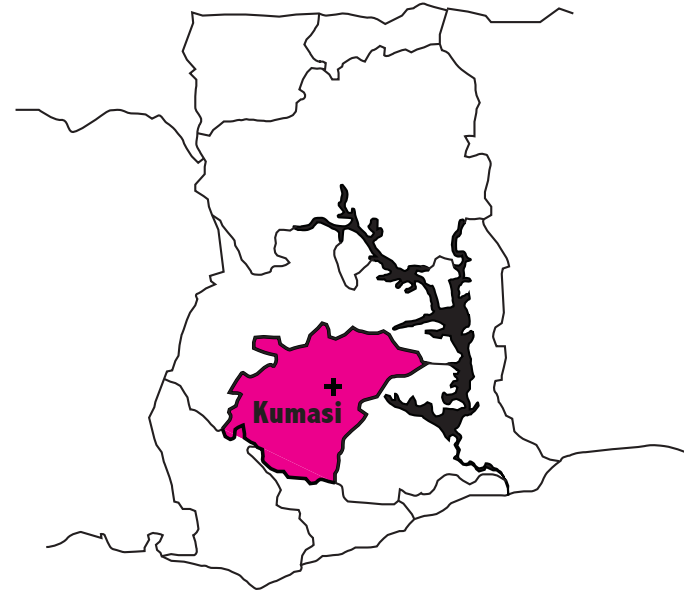


Ghana located in Africa

GHANA EMPIRE / ASHANTI MAJOR ETHNIC GROUP IN GHANA



Ghana located in West-Africa

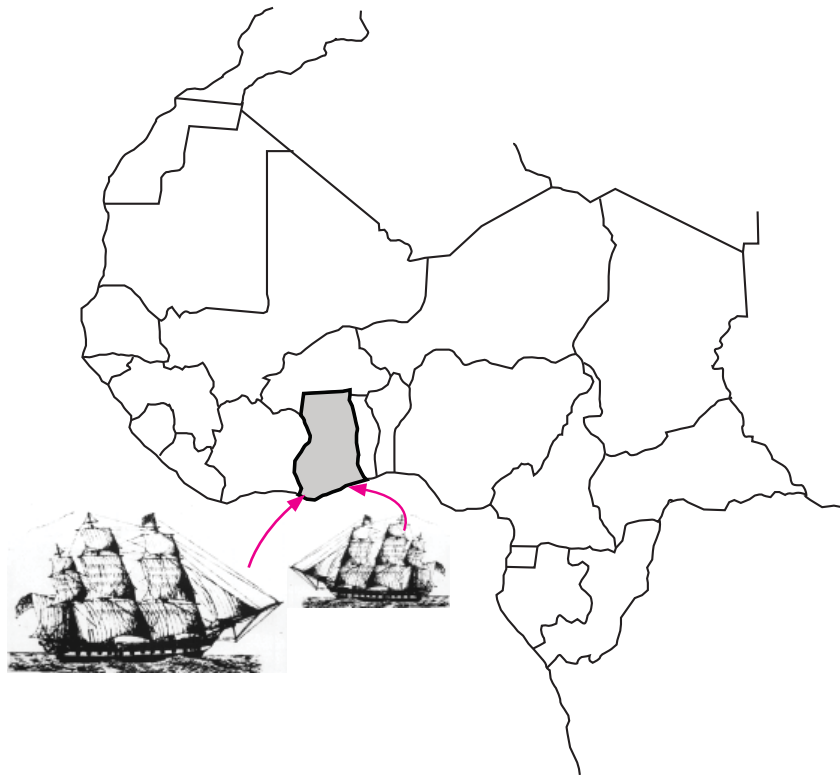


Ashanti region located in Ghana

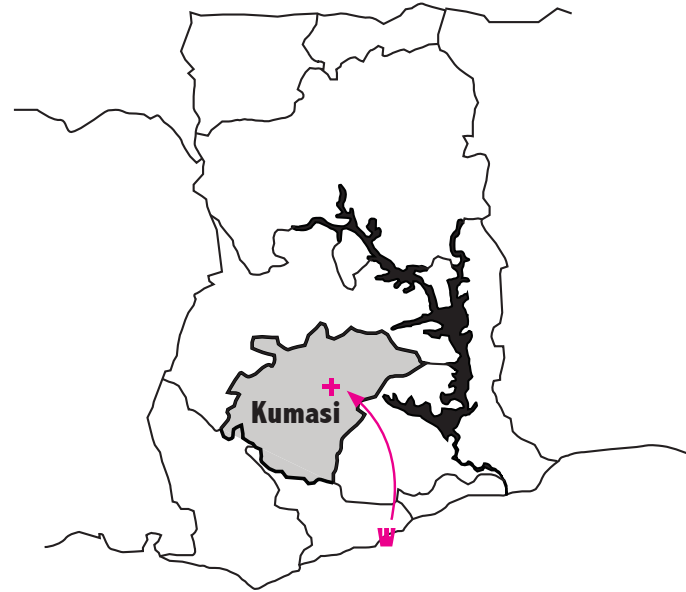
GHANA EMPIRE / ASHANTI



COLONIALISM 1901 - 1957 ENGLISH COLONY



Ghana located in West-Africa

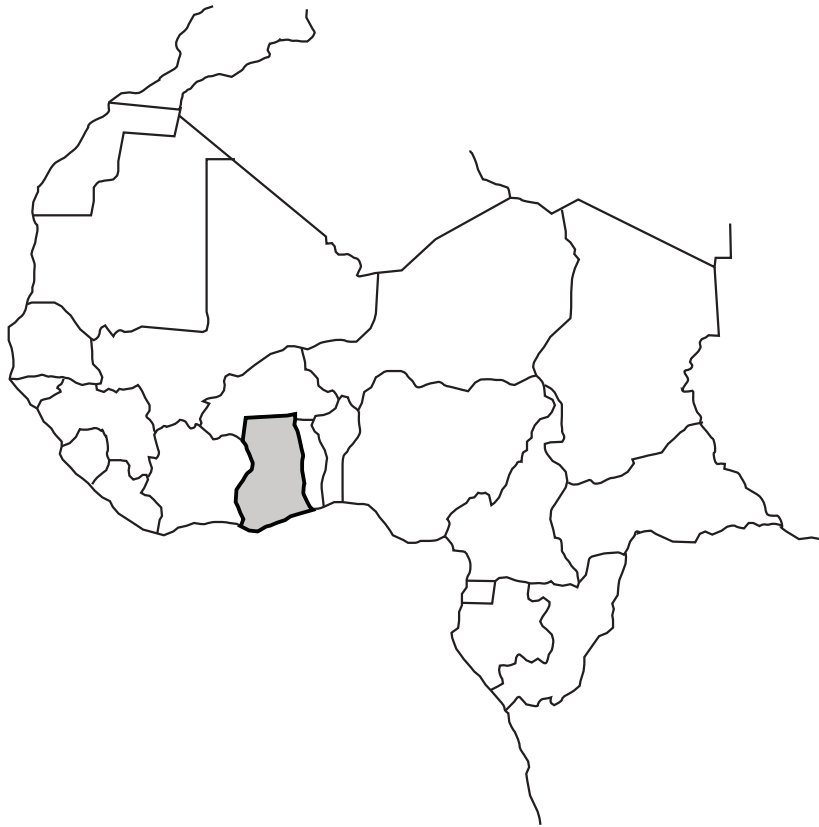


Ashanti region located in Ghana

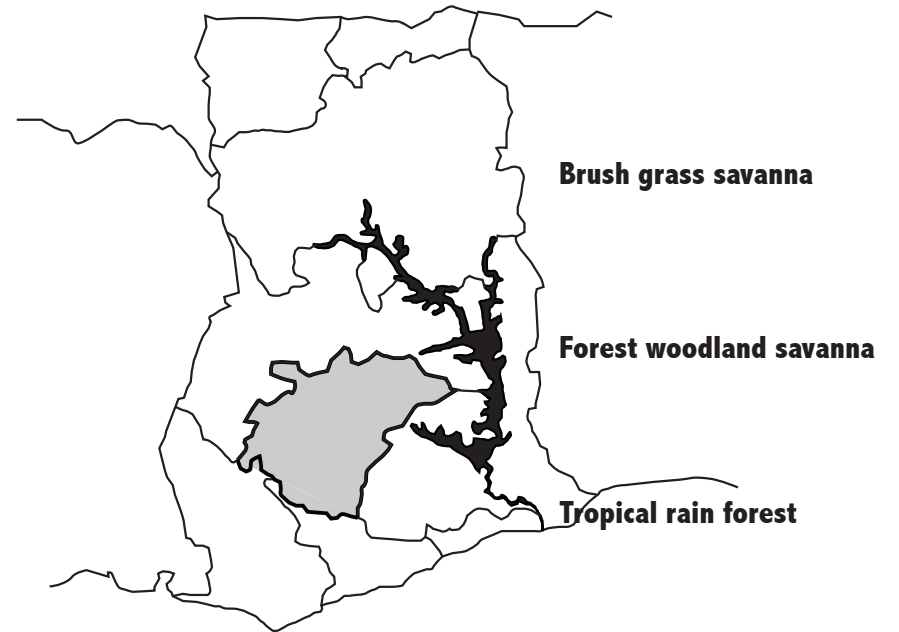
COLONIALISM 1901 - 1957



GEOGRAPHY - KUMASI: GARDEN CITY



Ghana located in West-Africa

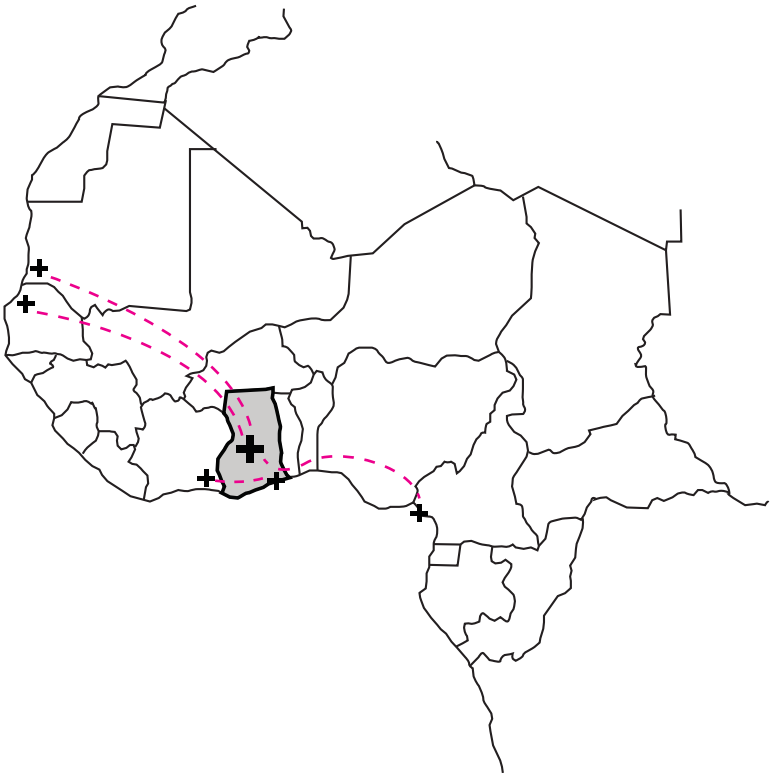
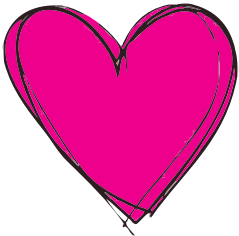


Ashanti region located in Ghana

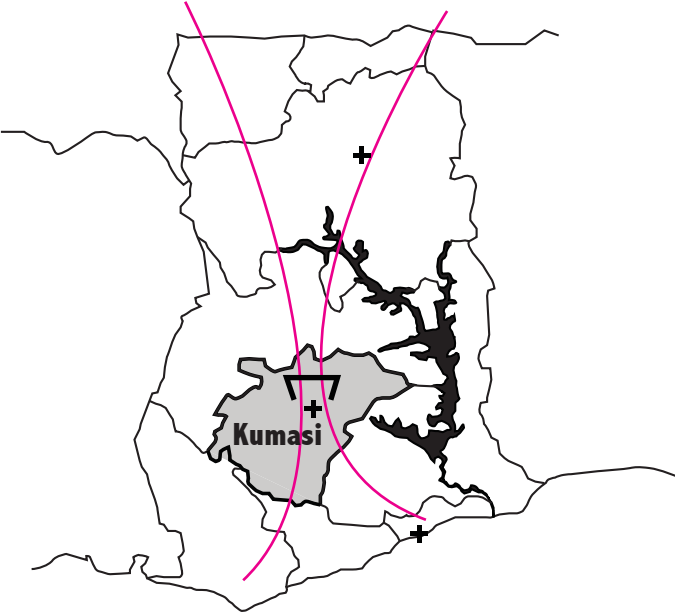
GEOGRAPHY - KUMASI: GARDEN CITY



ECONOMIC HEARTBEAT - LARGEST MARKET OF WEST AFRICA

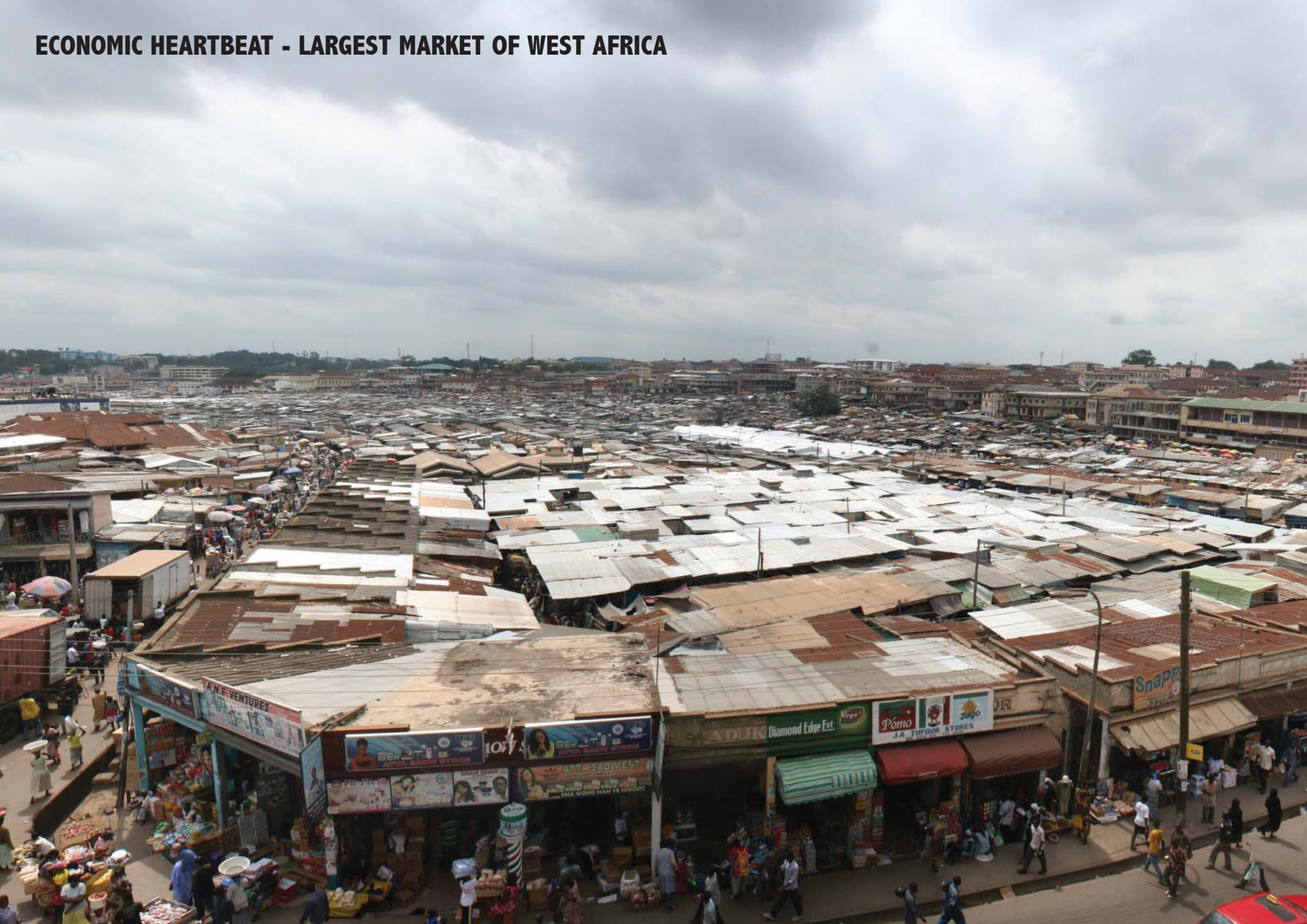


Ghana located in West-Africa



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ECONOMIC HEARTBEAT - LARGEST MARKET OF WEST AFRICA

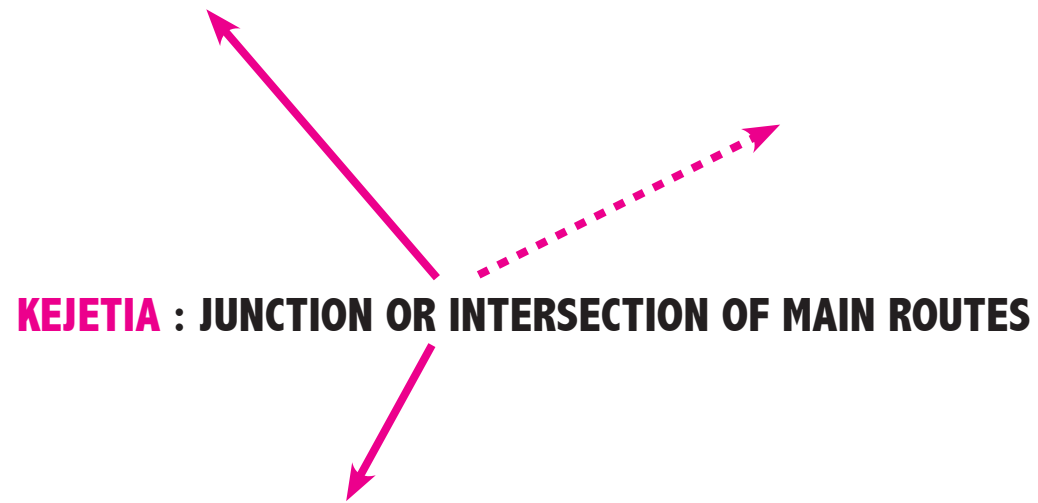


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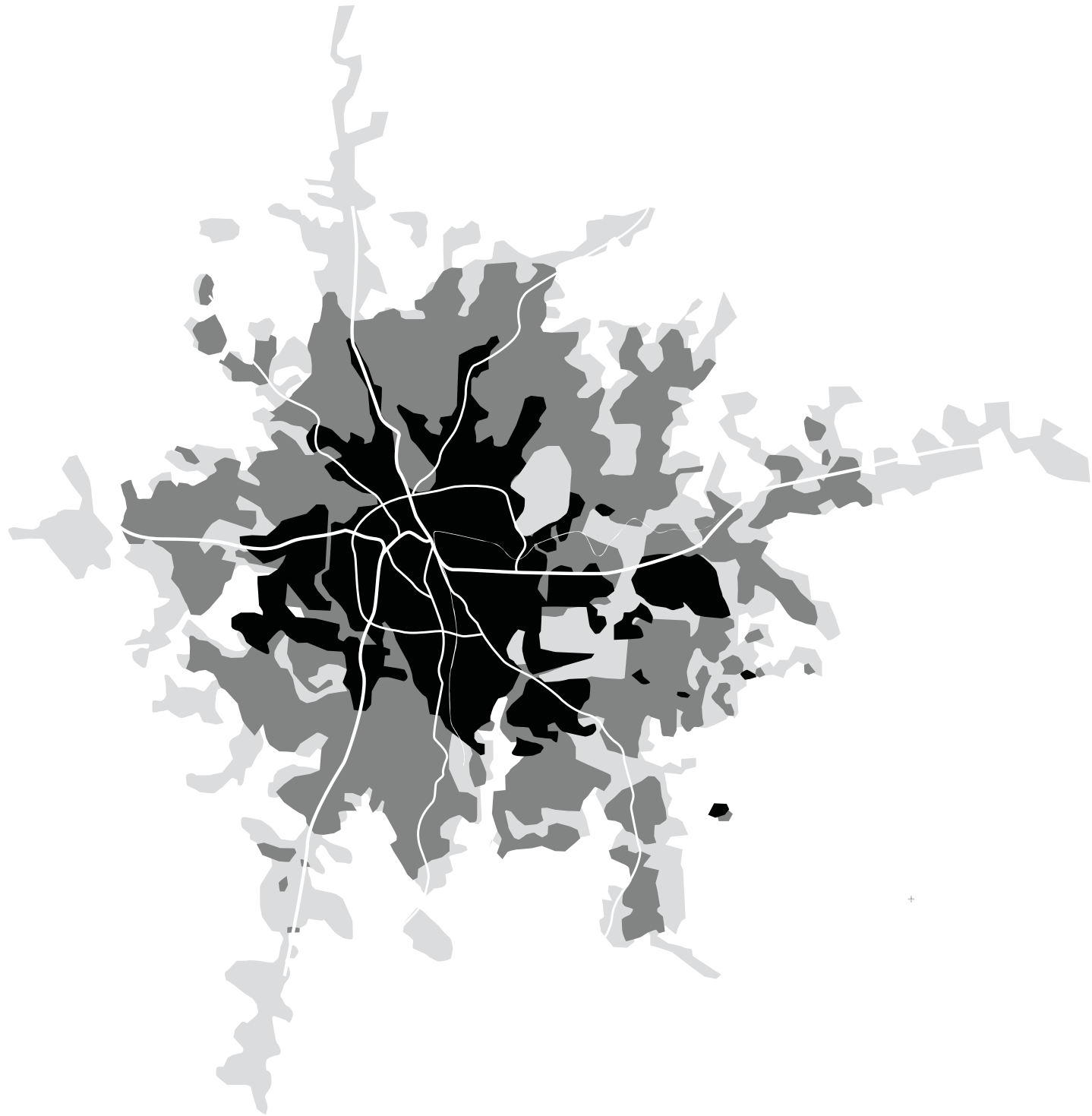
KEJETIA ANALYSIS

A PLACE WHERE INTERACTION OCCURS BETWEEN PROCESSES, SYSTEMS AND PEOPLE.

DEFINITION



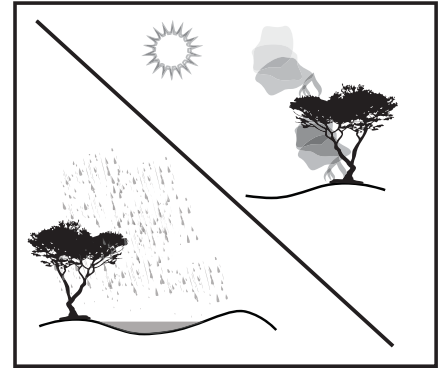
KUMASI METROPOLITAN



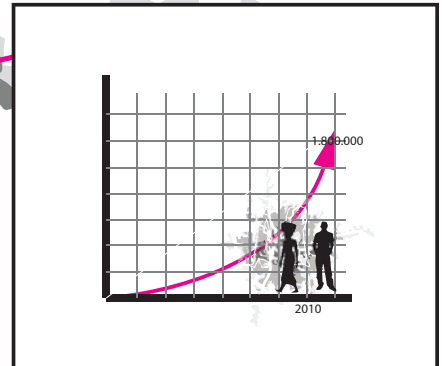
KUMASI CITY CENTRE



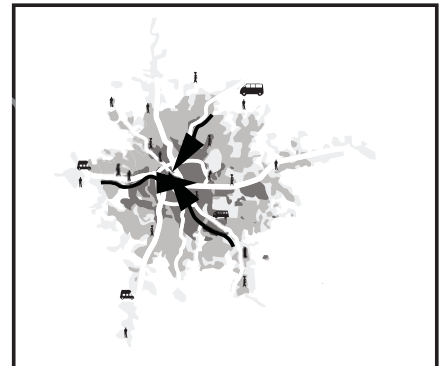
KUMASI CITY CENTRE WITH OTHER PLANS AND THEMES



CLIMATE

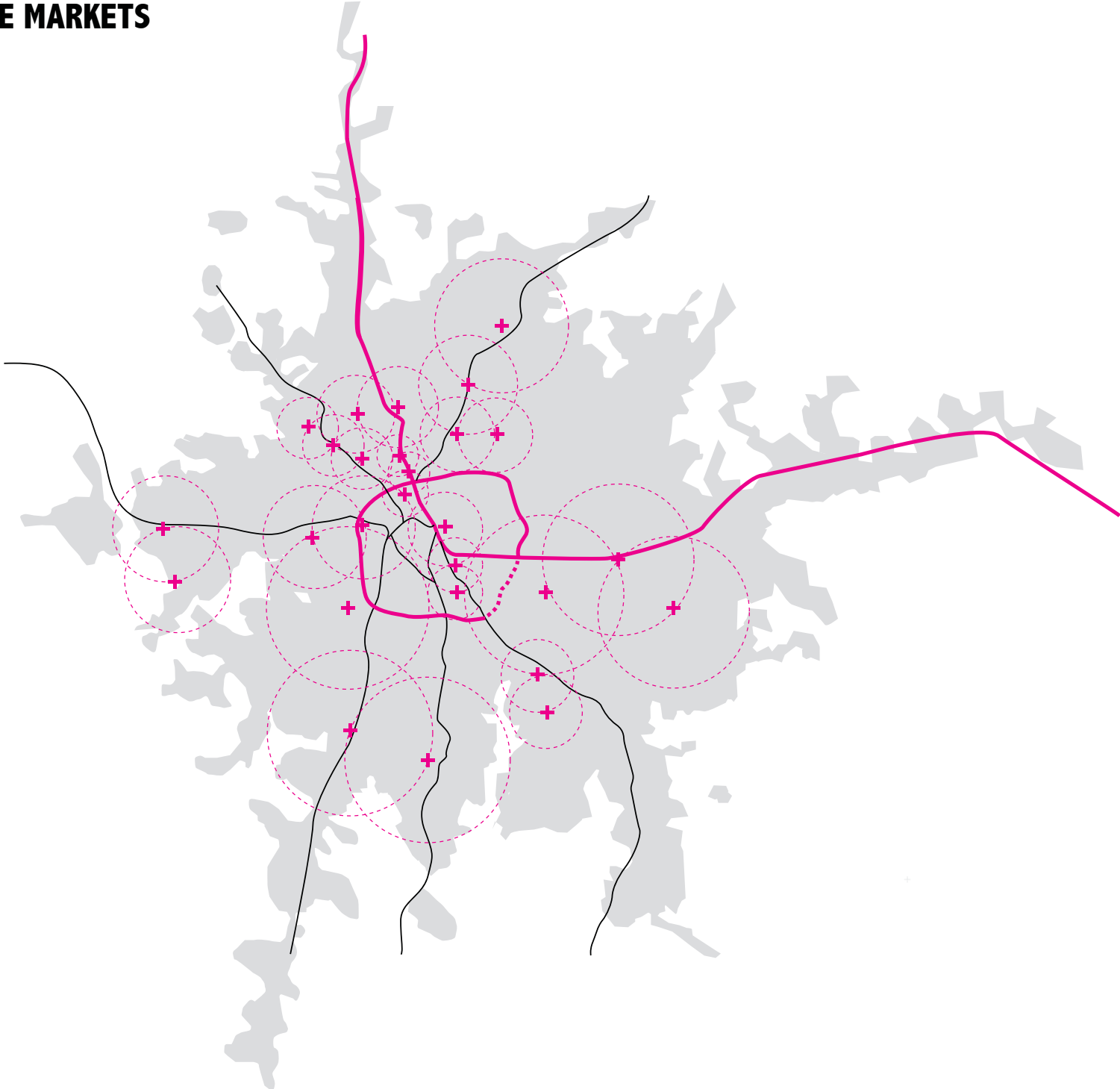


POPULATION GROWTH
CONGESTION



FLOWS

FUTURE PLAN SATELLITE MARKETS



IMPORTANCE OF THE KEJETIA



FUTURE PLAN CONNECTION BY THE Bus Rapid Transit SYSTEM



SCALE



SCALE // KEJETIA CENTRAL MARKET - GROTE MARKT DELFT

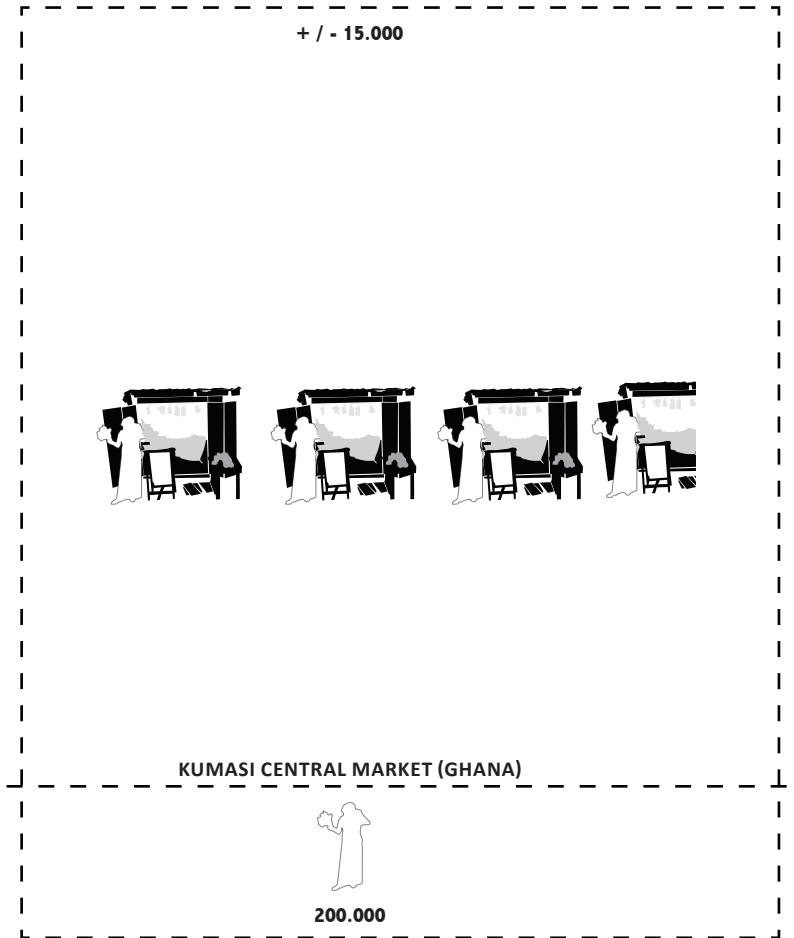
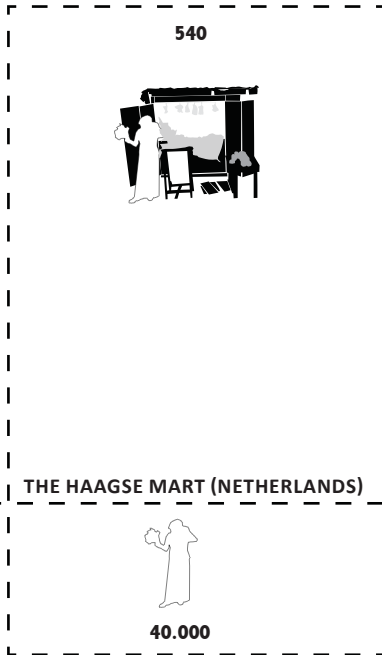


670 METER

120 METER

SCALE

RATIO NUMBER OF MARKETSTALLS
RATIO NUMBER OF VISITORS



POVERTY THRESHOLD

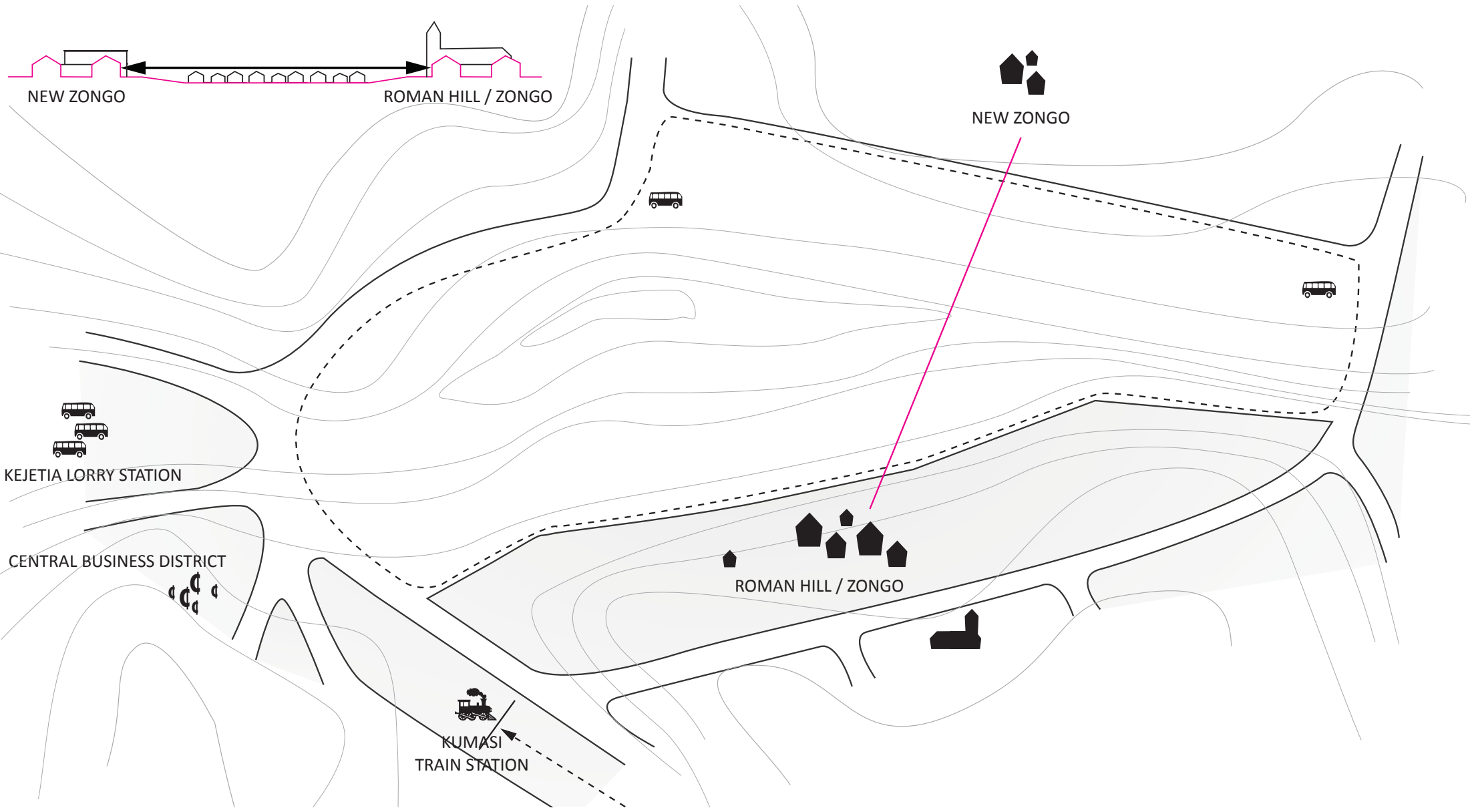
POVERTY THRESHOLD WOLRDBANK (2008) \$1,25

**“ THE MINIMUM LEVEL OF INCOME DEEMED NECESSARY TO ACHIEVE AN ADEQUATE
STANDARD OF LIVING IN A GIVEN COUNTRY” www.wikipedia.org**

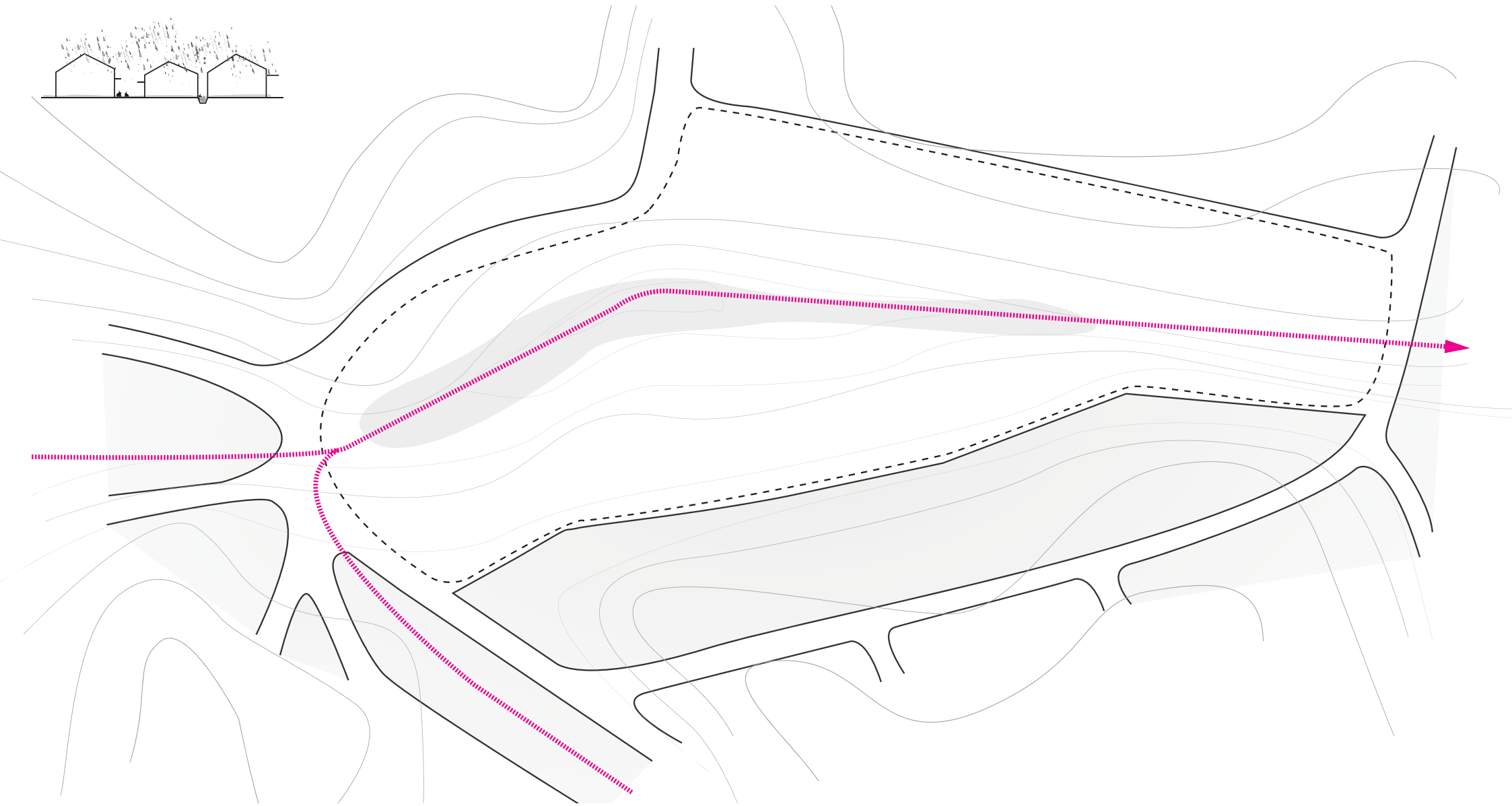
**TURNOVER KUMASI CENTRAL MARKET: 440.000 EURO A MONTH
14.667 EURO A DAY**

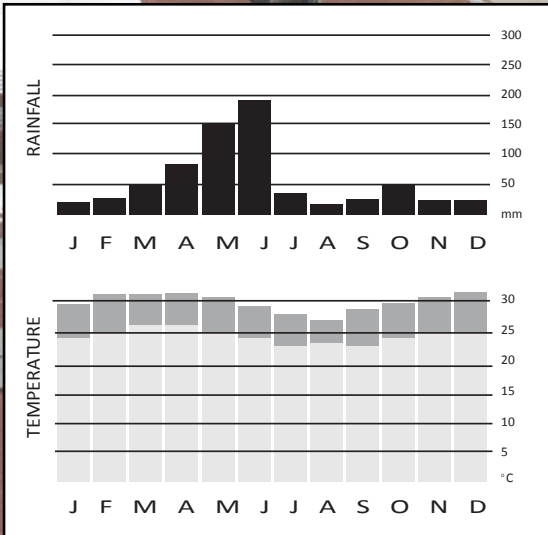
DAILY REVENUE PER PERSON: € 0,97 A DAY = \$1,30

CONTEXT



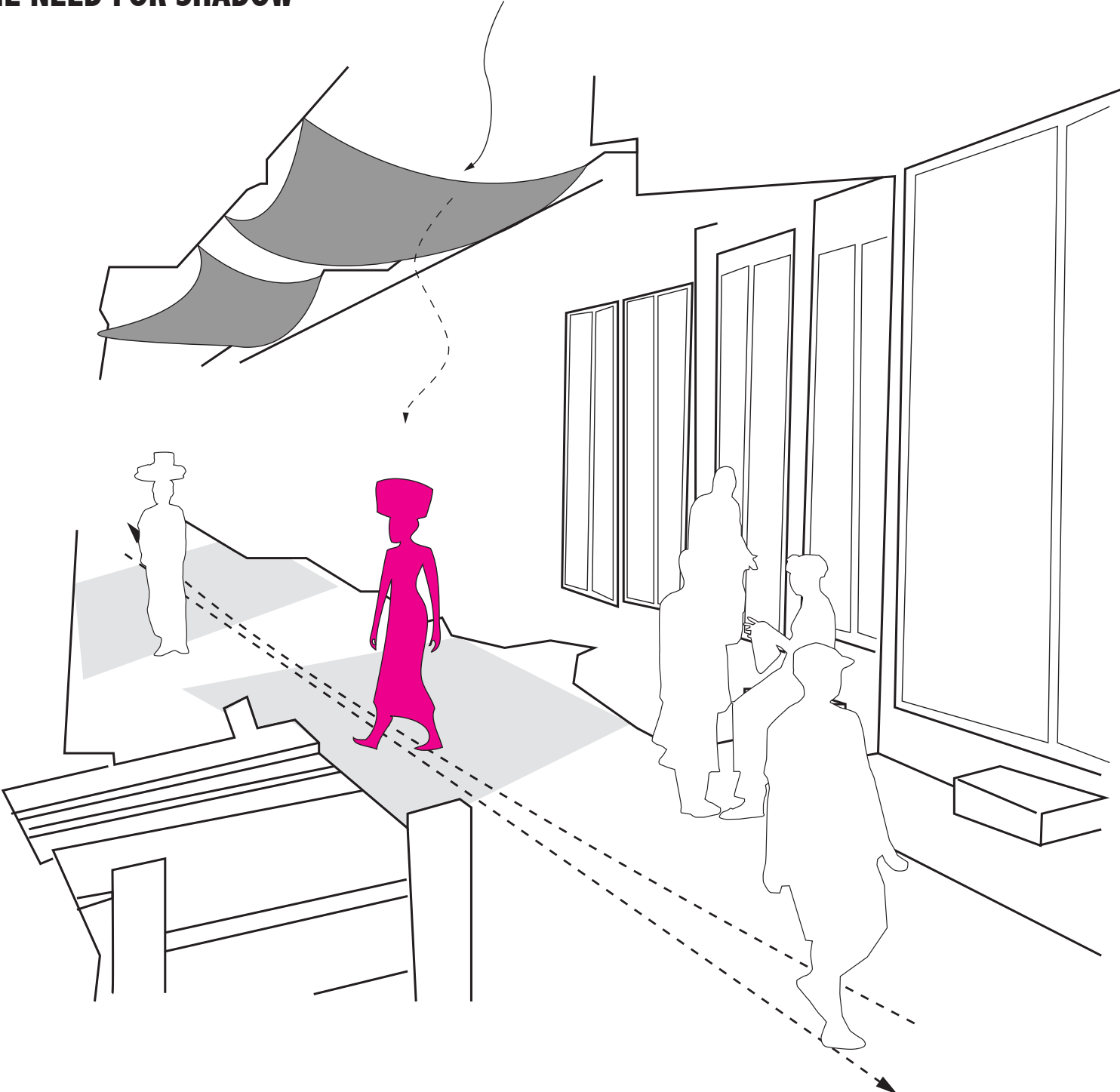
GEOGRAPHY



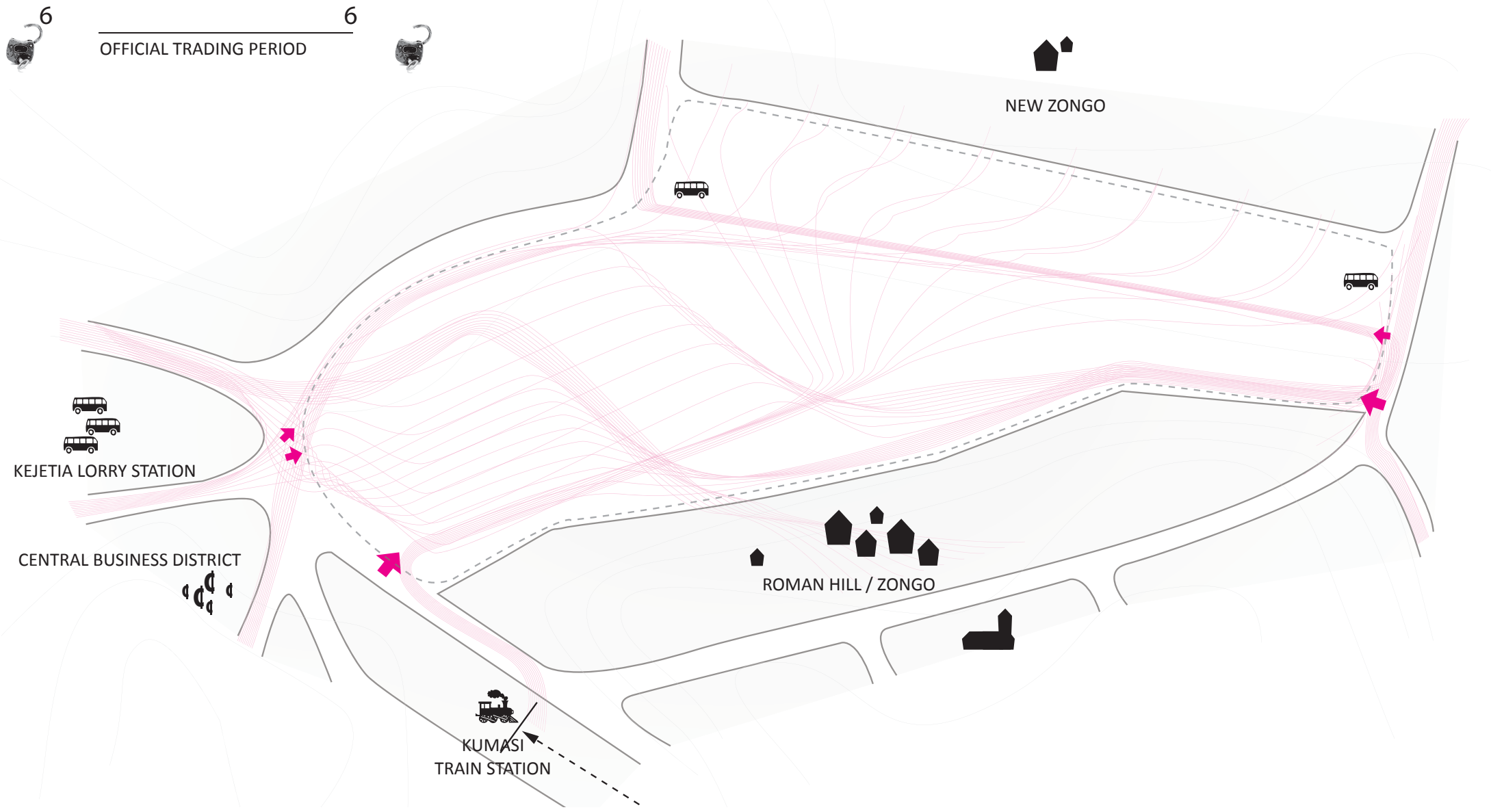


ON TOP OF THE CENTRAL MARKET BUILDING.

EXPERIENCE - THE NEED FOR SHADOW



ENTRANCES and FLOWS



KEJETIA // ENTRANCE WEST-SIDE



CENTRAL BUSINESS DISTRICT.

THE TRAINSTATION.

KUMASI CIRCLE ASHANTI MONUMENT.

KEJETIA LORRY PARK.

KUMASI ZOO.

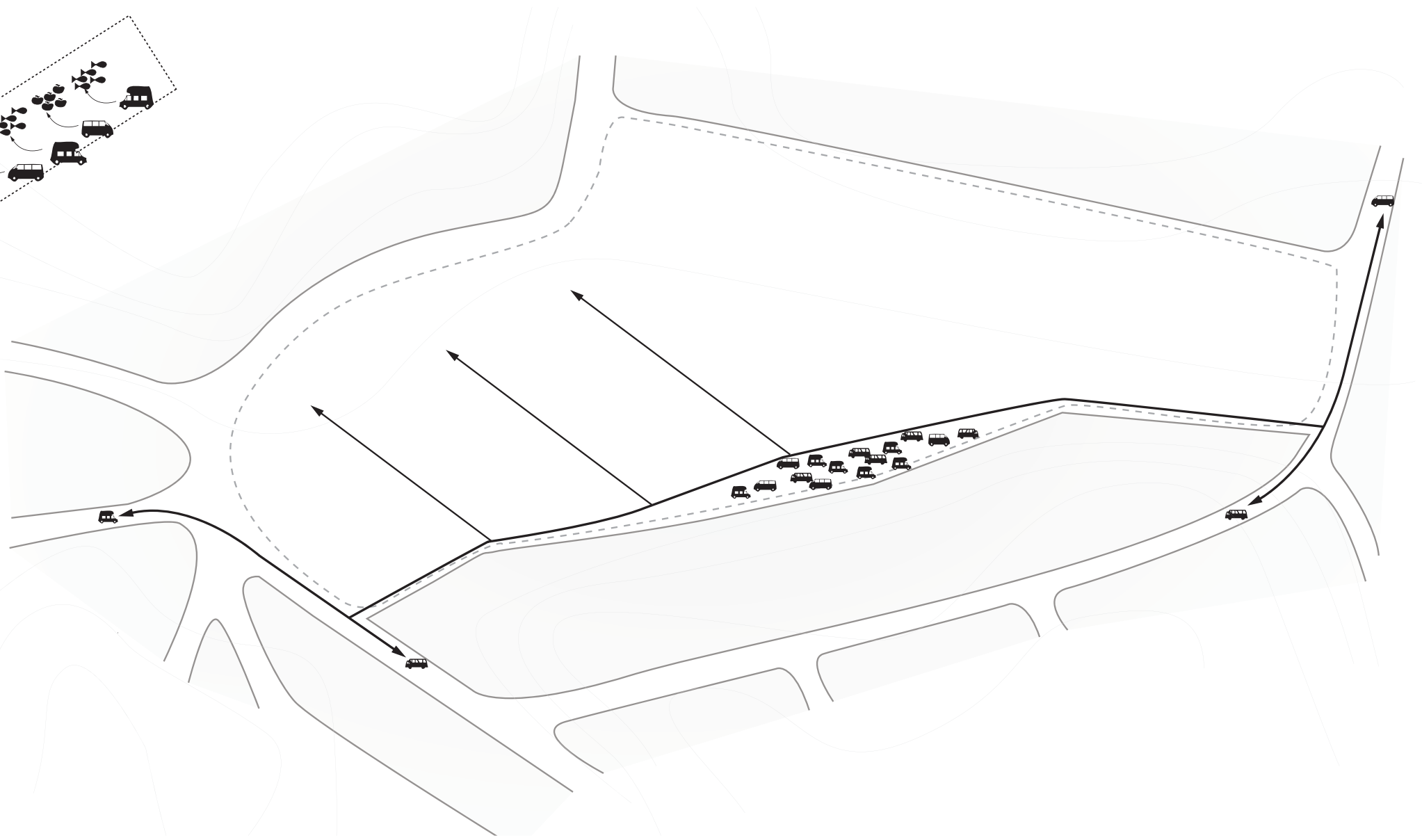
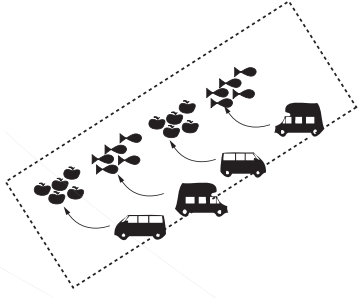
KEJETIA CENTRAL MARKET.





ENTRANCE WEST-SIDE.

MAIN ROAD





ENTRANCE MAIN ROAD - EAST SIDE.

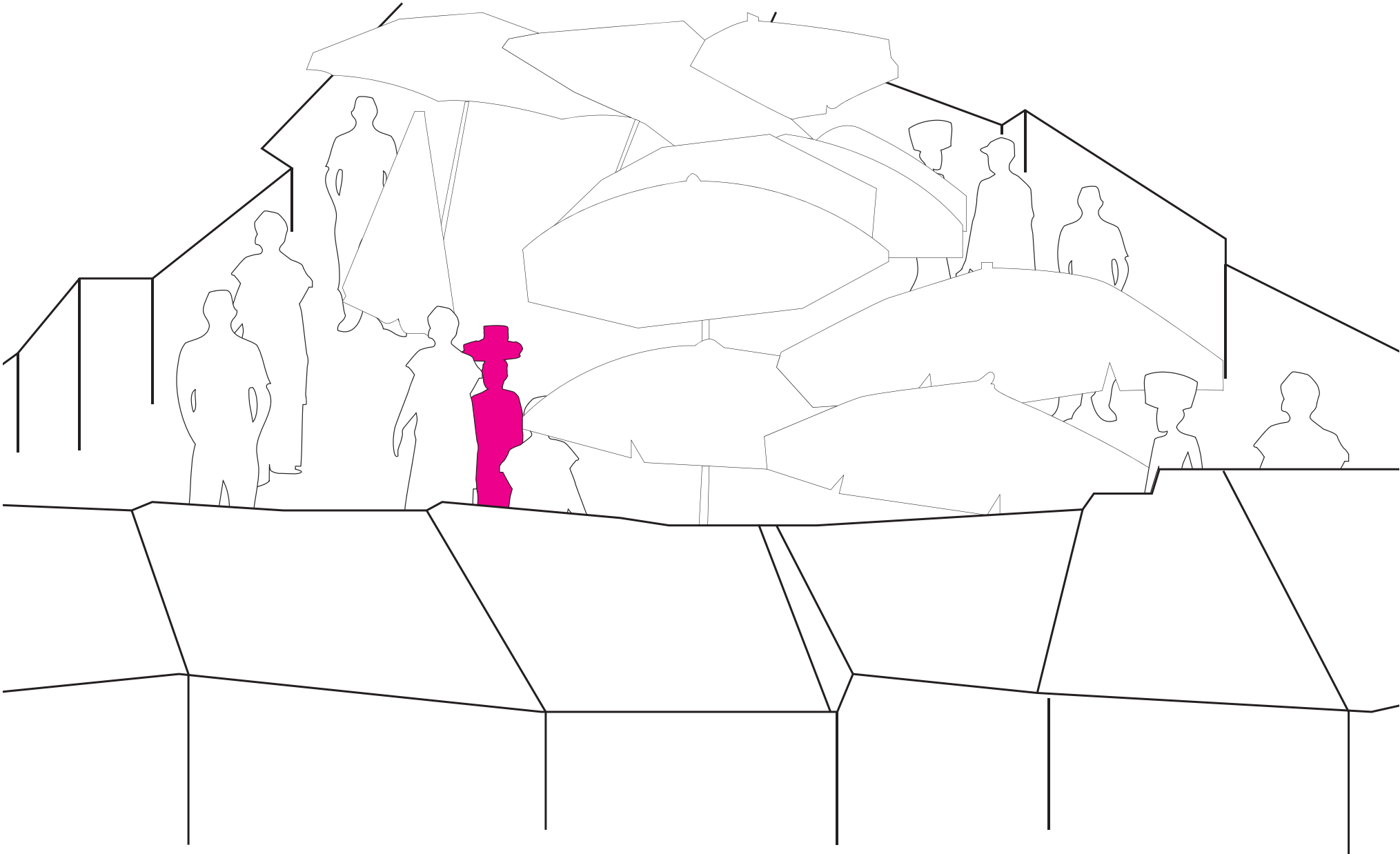


BROAD STREET PROFILE

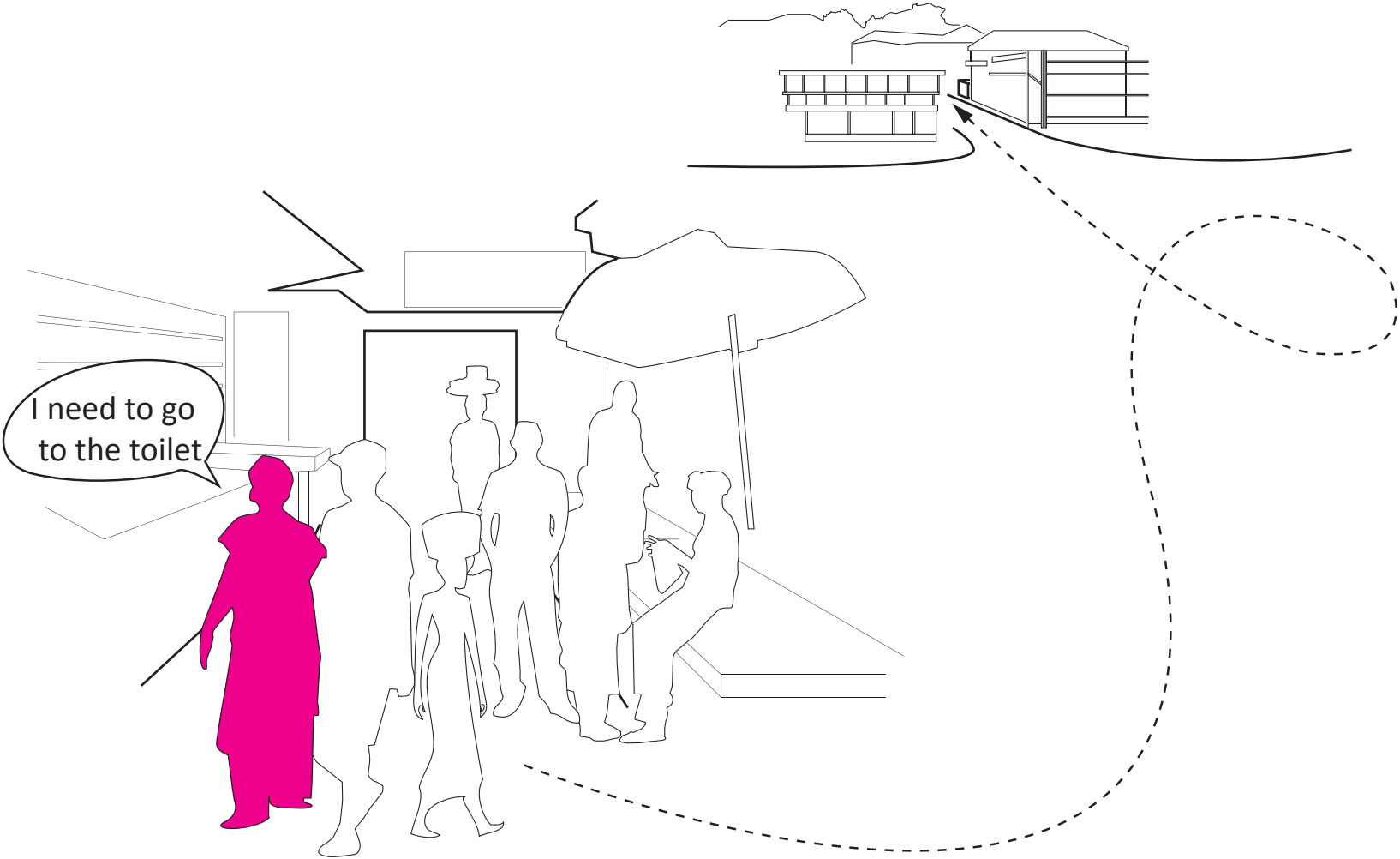


ONE OF THE MAJOR SIDE STREETS

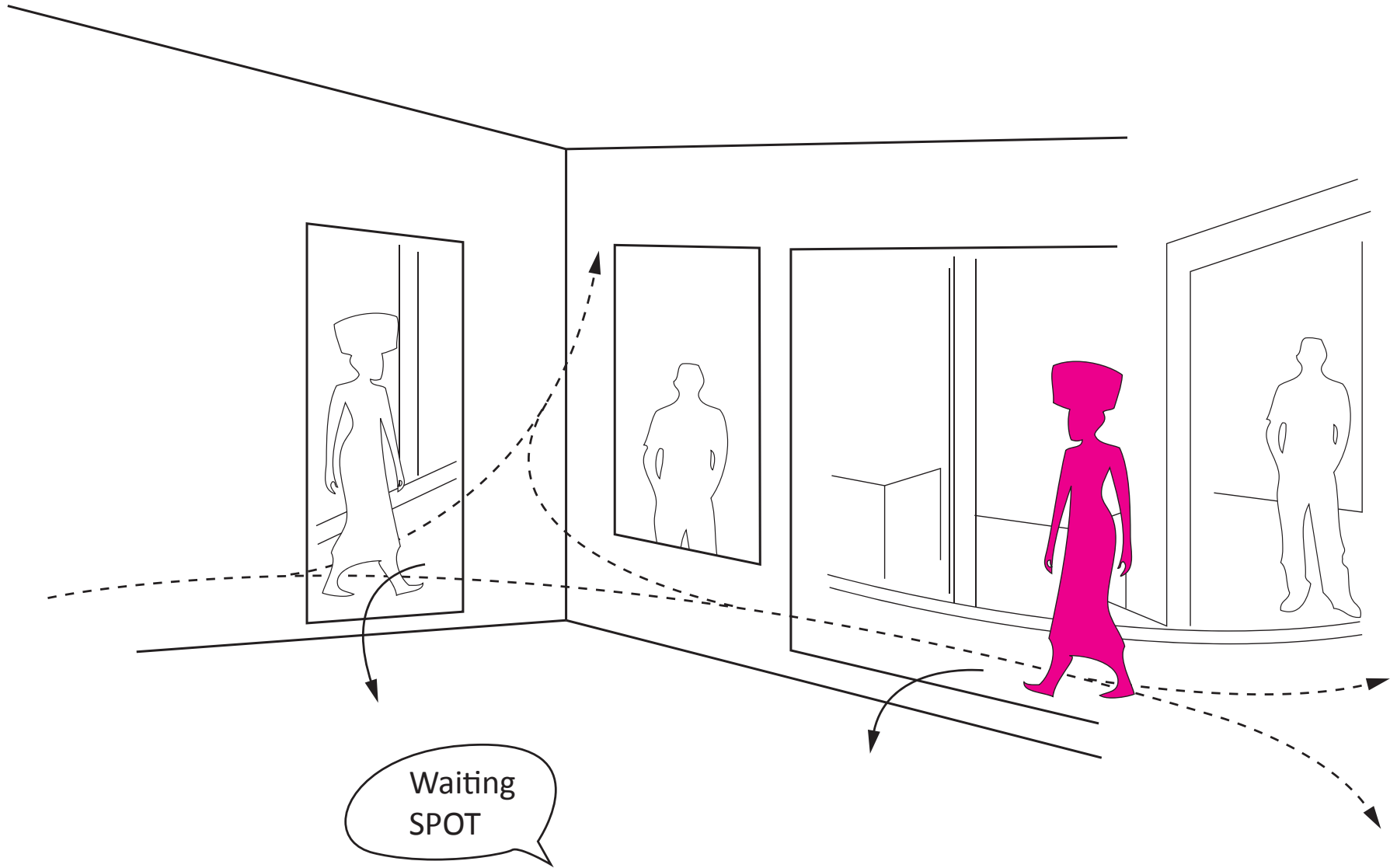
EXPERIENCE - ADAPTATION OF SPACE



EXPERIENCE - TOILETSTORY



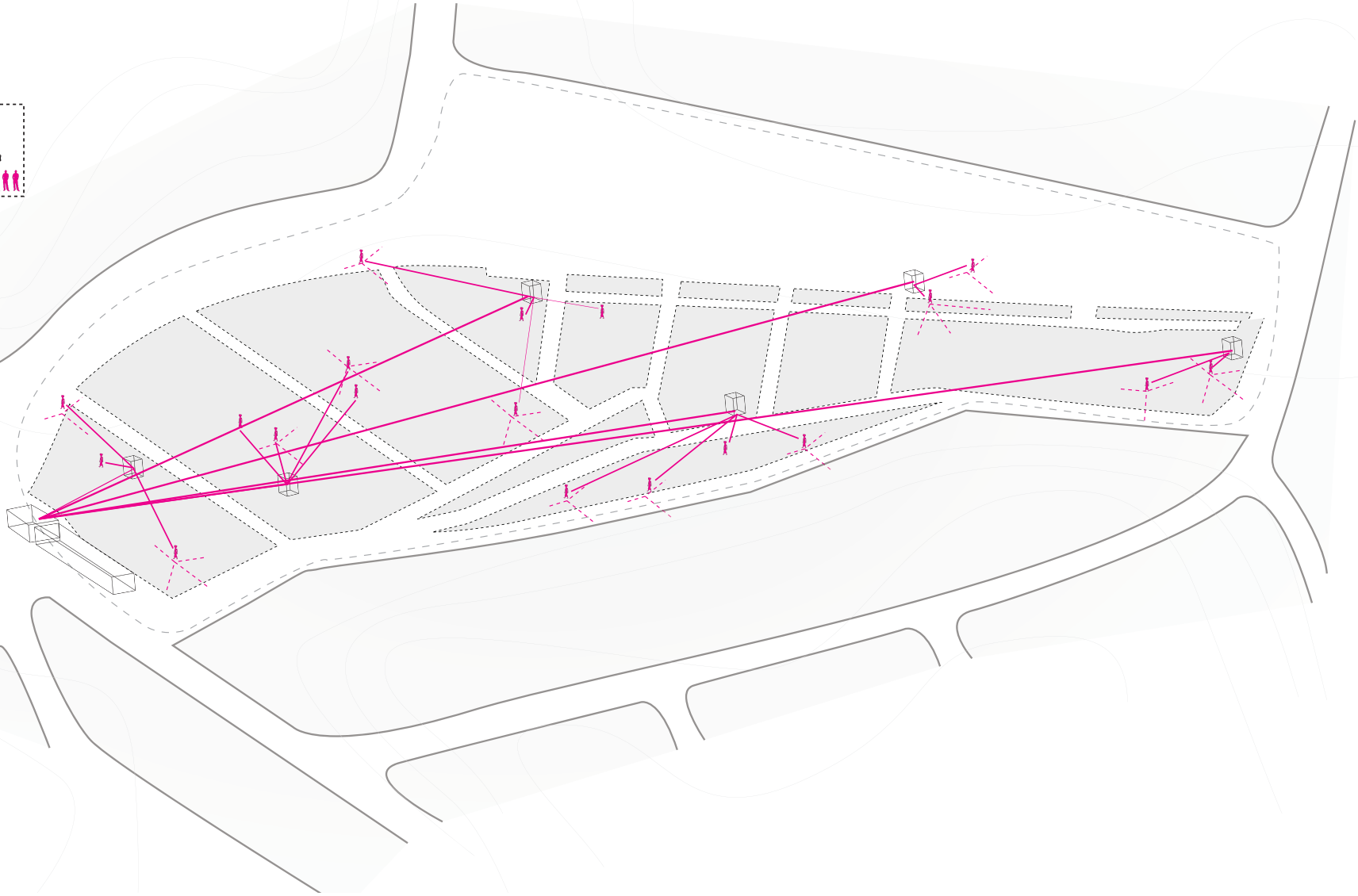
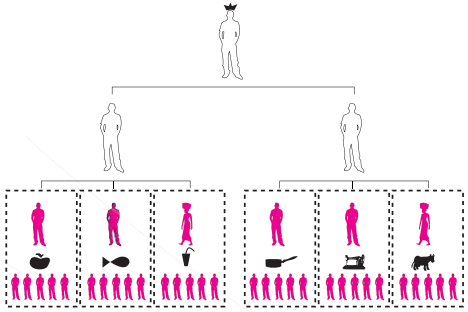
EXPERIENCE - NON FLOW SPACE



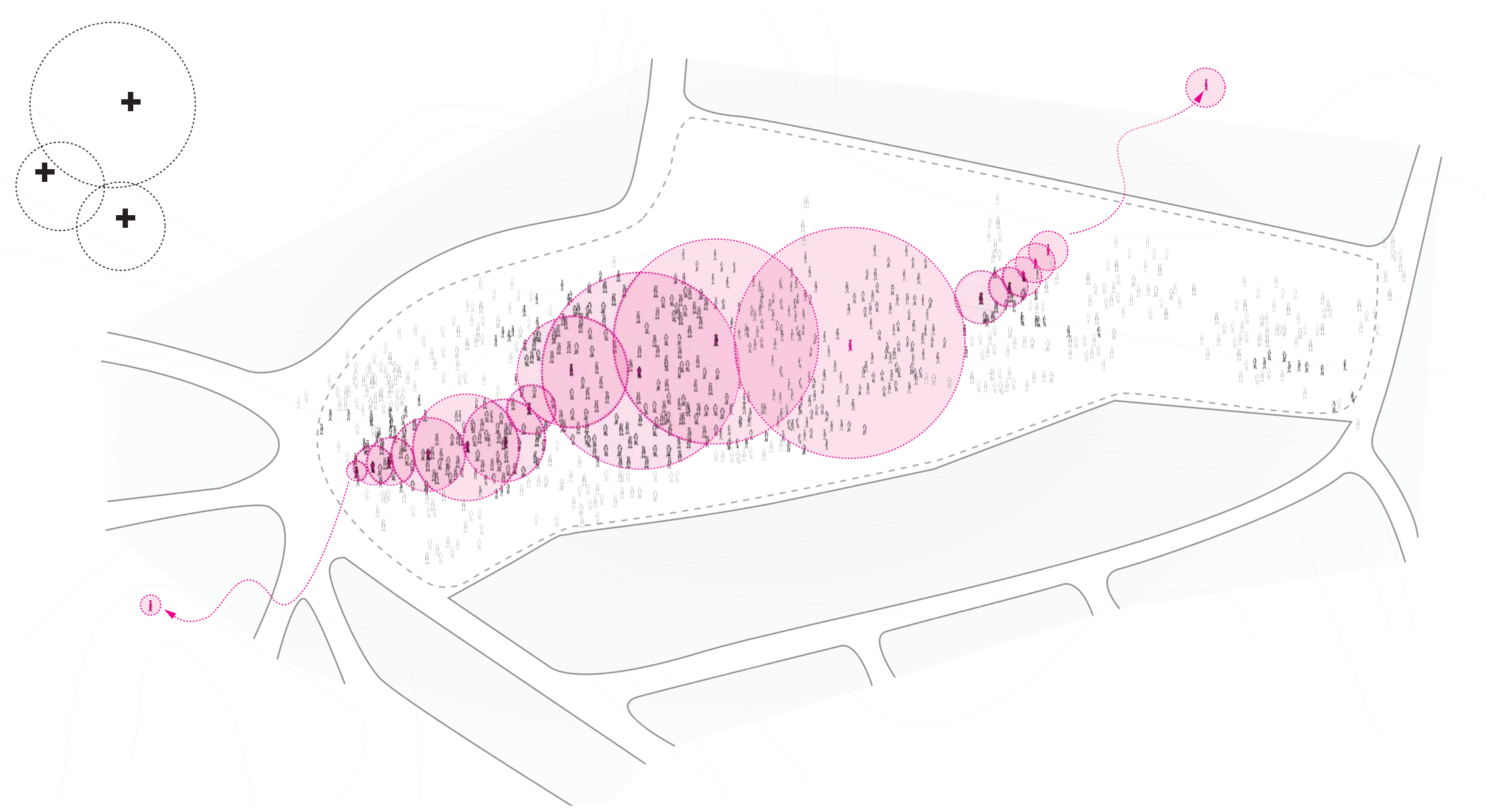
NON-FLOW SPACES

A PLACE WHERE PEOPLE CAN ESCAPE FROM THE MASS FLOW OF PEOPLE

HIERARCHIE



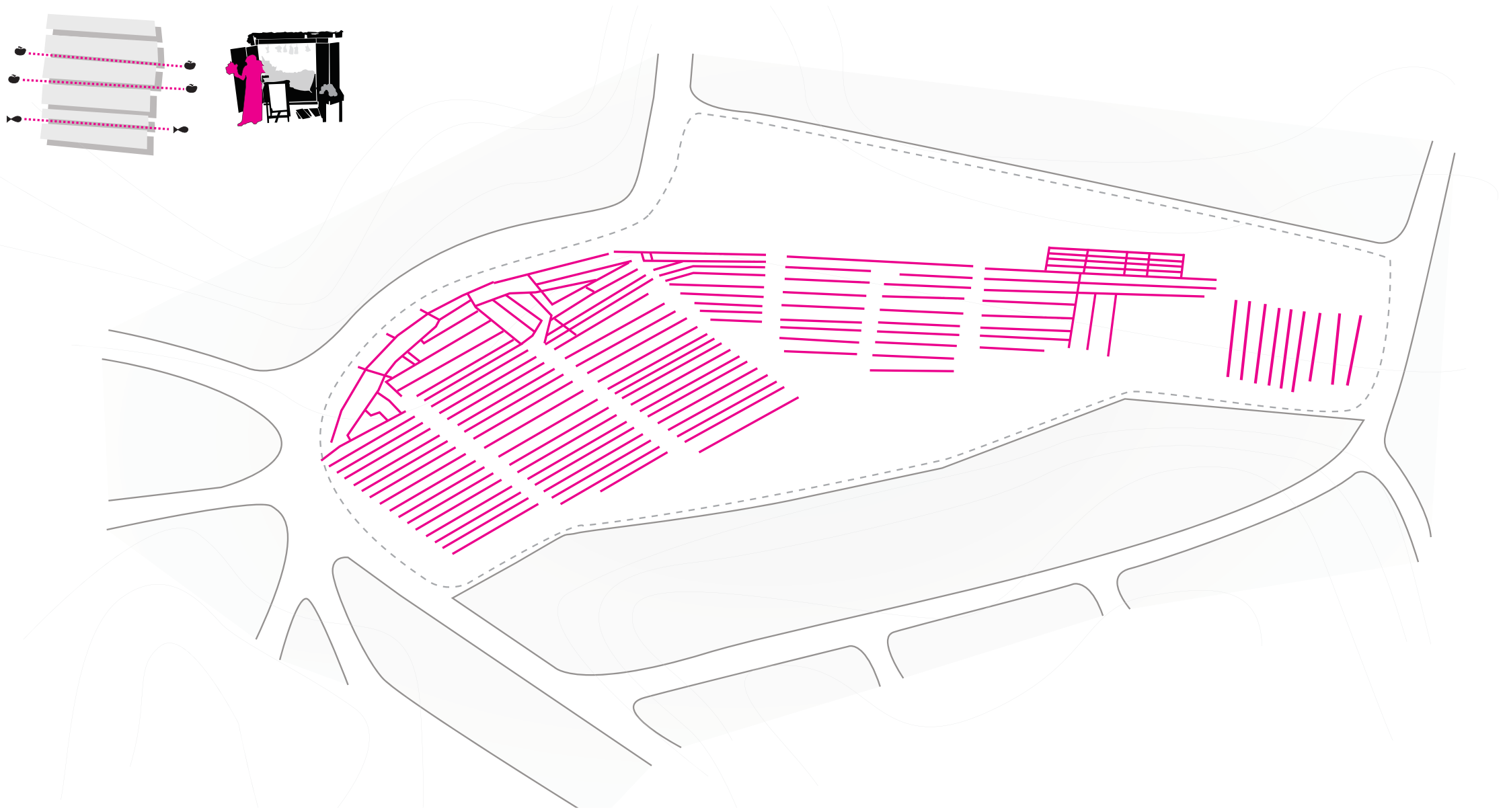
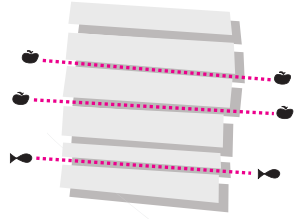
NETWORK





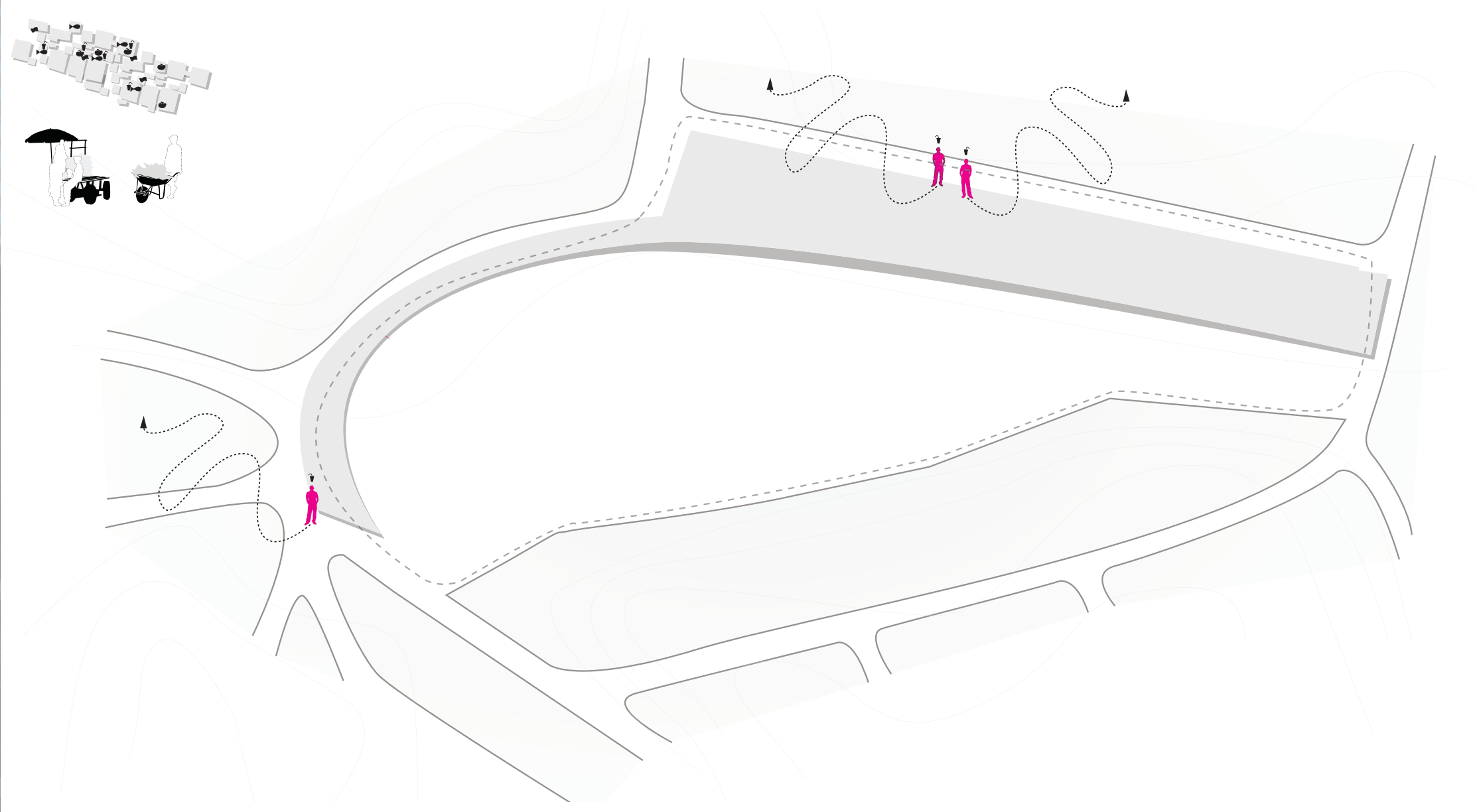
KMT/A 8148396
KUMMETROPOLITAN SEMBL
MARKET TOLL
10.05 Gp

LINES

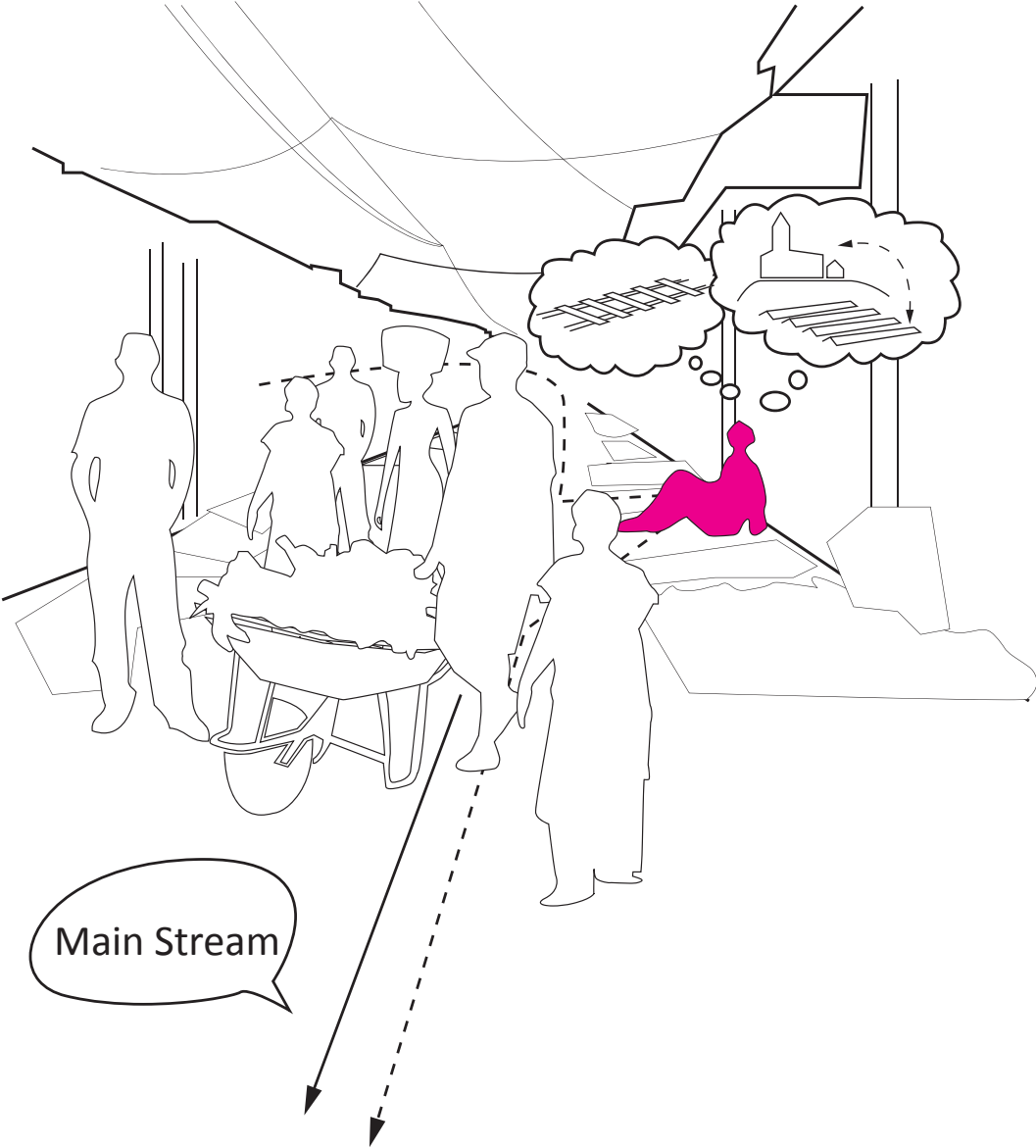




MIXED RETAIL



EXPERIENCE - KAYAYOO / HEADPORTER STORY



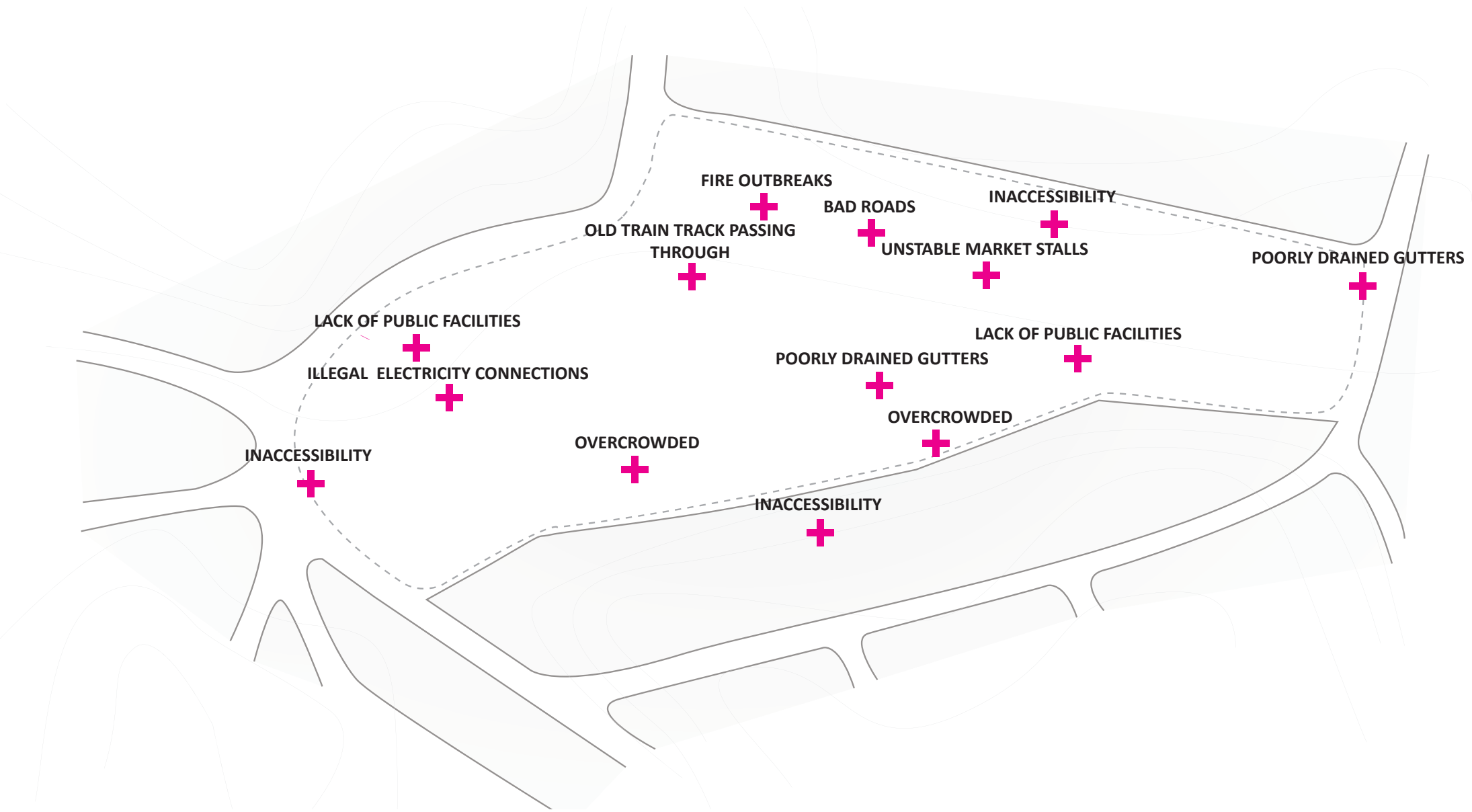
DEFINITION KAYAYOO / HEADPORTER

THE KAYAYOO ARE **YOUNG WOMEN WHO LEAVE COMMUNITIES IN ECONOMICALLY DISTRESSED NORTHERN GHANA FOR URBAN AREAS IN SOUTHERN GHANA, WHERE THEY **WORK AS PORTERS** MOVING HEAVY LOADS AROUND BY BALANCING THEM ON THEIR HEADS. THE KAYAYOO **ARE HEAVILY EXPLOITED FOR SEX AND MONEY DUE TO THEIR LACK OF HOUSING AND SOCIAL SUPPORT IN UNFAMILIAR CITIES.****

A photograph showing the entrance to a market. On the left is a building with a blue door and a small poster. In the center and right are metal gates leading into a market area with wooden stalls and buildings in the background. A black text box is overlaid on the right side of the image.

**OLD CENTRAL MARKET BORDER
OFFICIAL ENTRANCE**

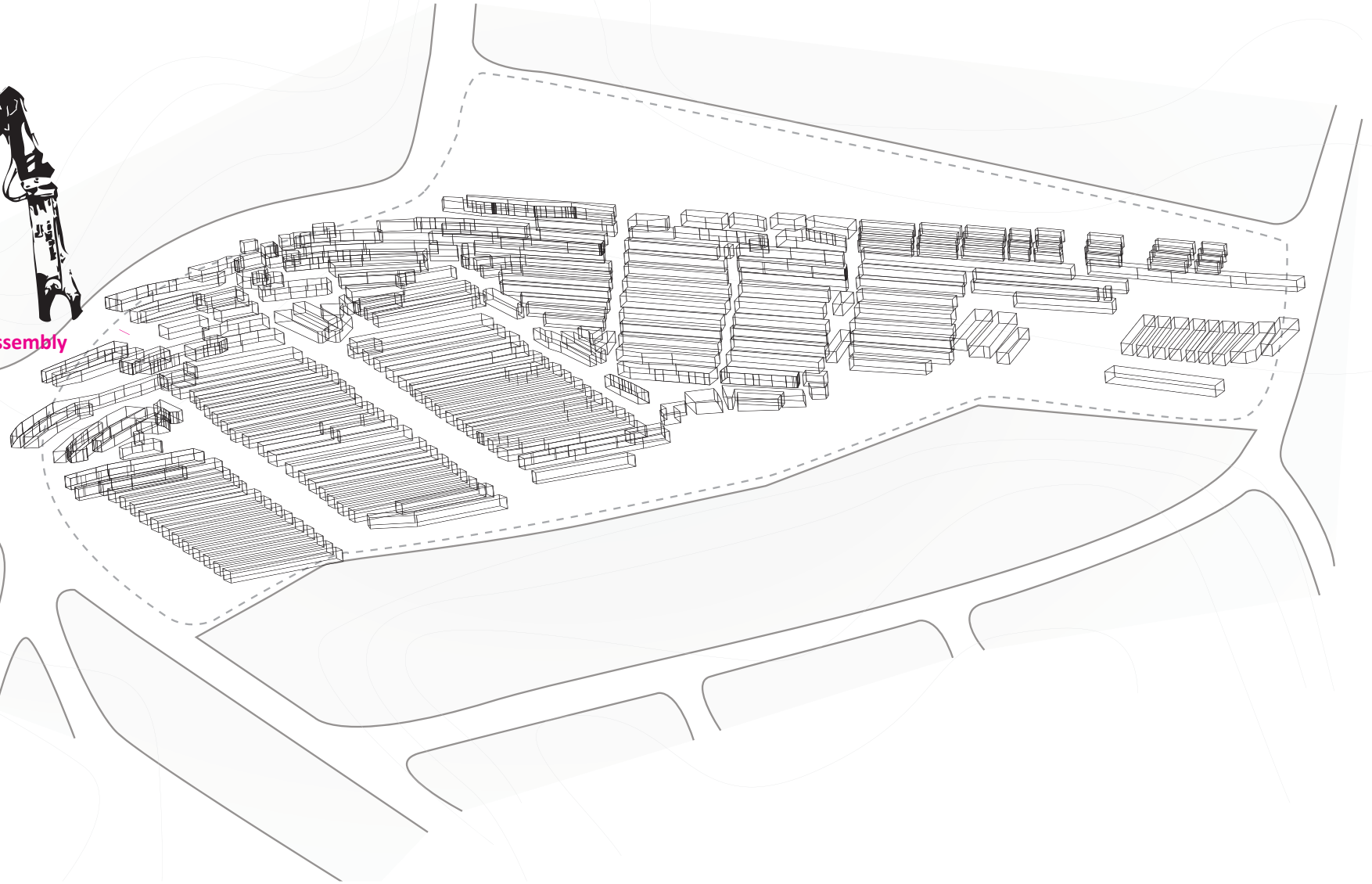
VISIBLE PROBLEMS



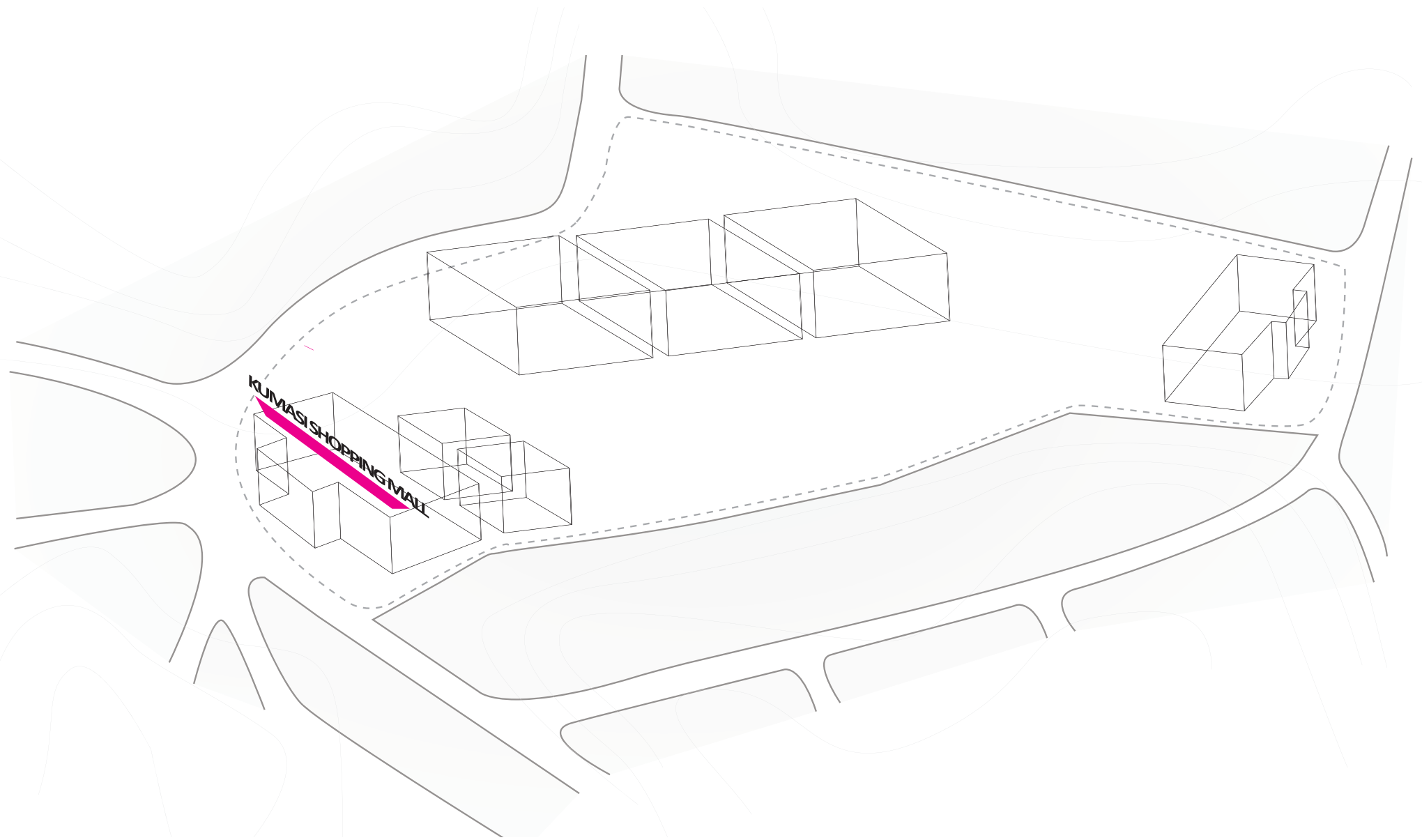
FUTURE PLAN Kumasi Metropolitan Assembly



Kumasi Metropolitan Assembly



KUMASI SHOPPING MALL, THE NEW EXPERIENCE



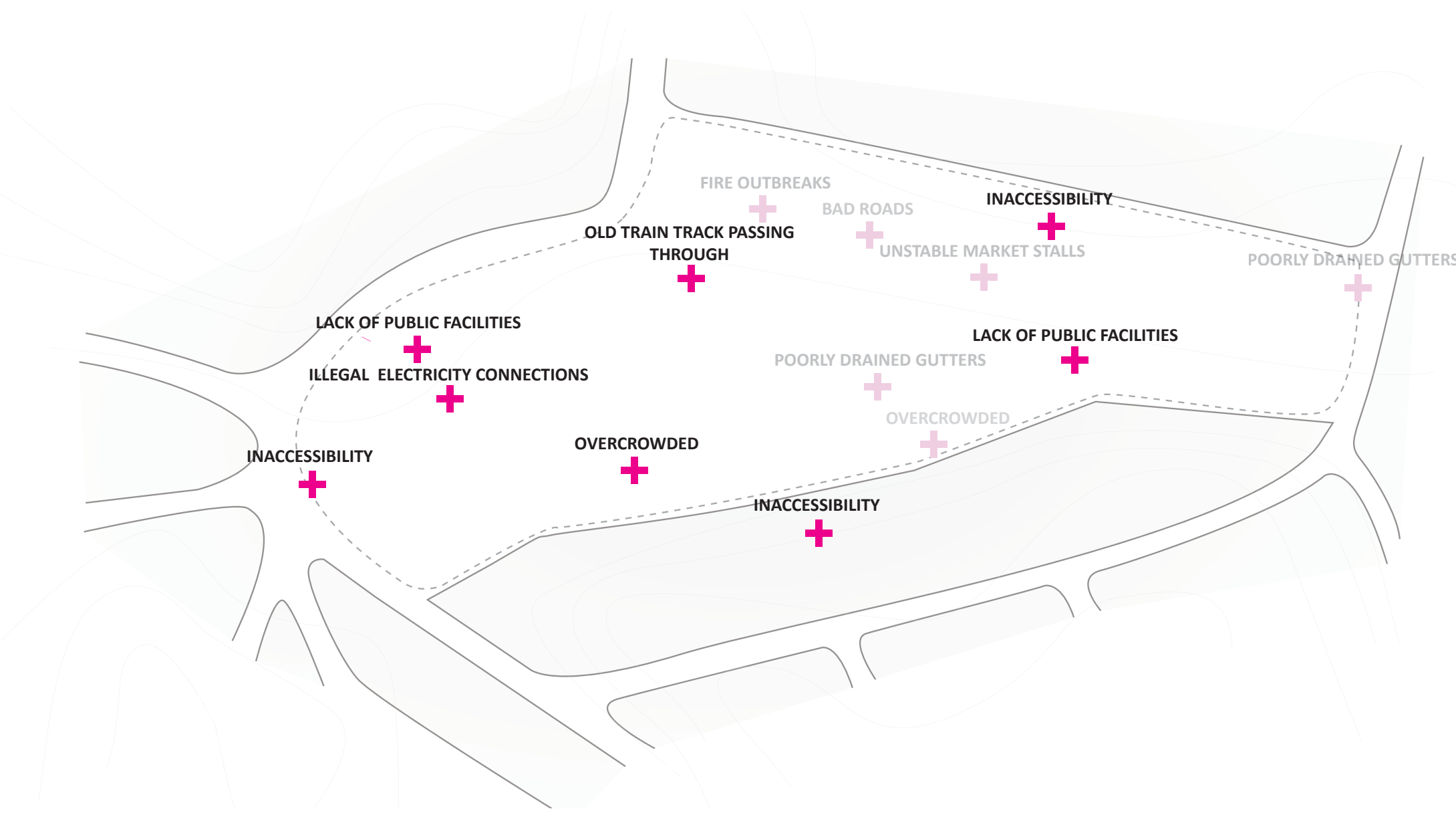
KUMASI CENTRAL MARKET - THE NEW EXPERIENCE



KUMASI CENTRAL MARKET - THE NEW EXPERIENCE



COVERED PROBLEMS



2.1

LESSONS LEARNED.

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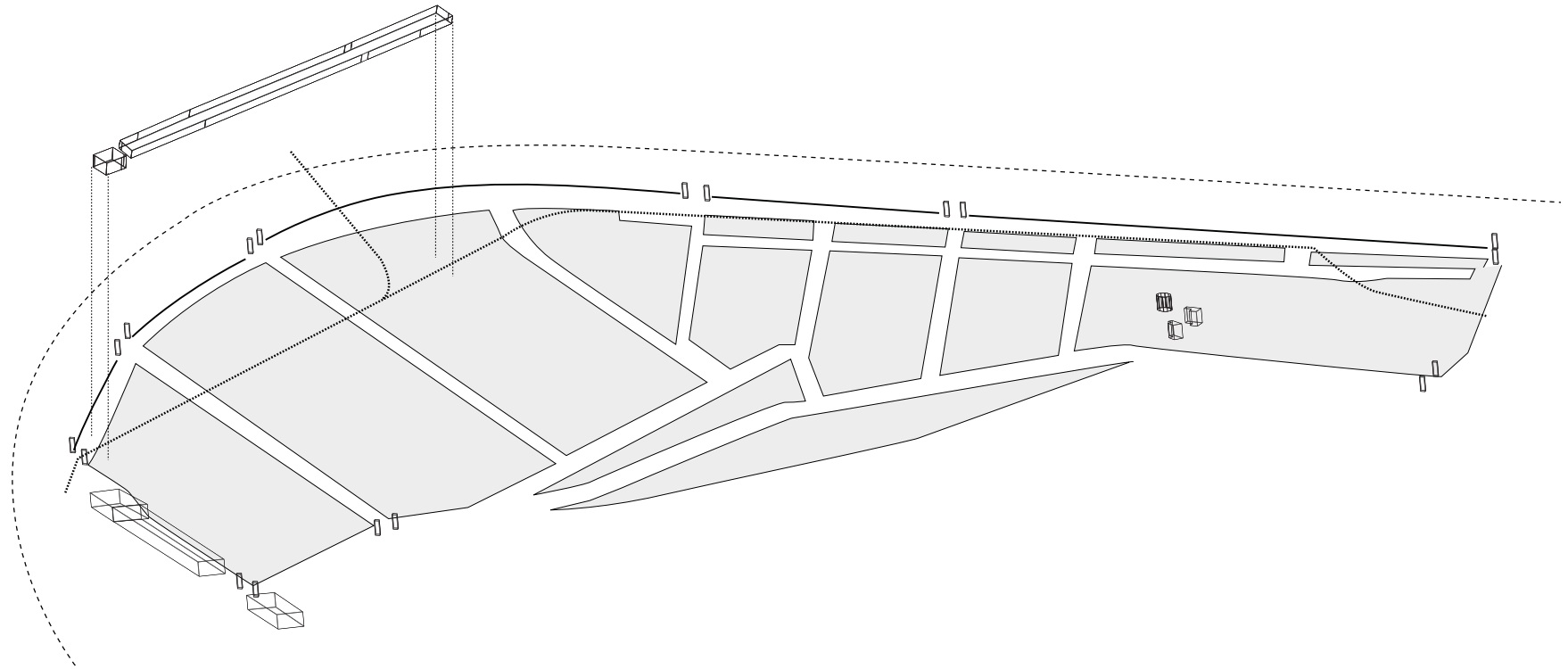
LESSONS LEARNED

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4. Many traders on the market **SURVIVE ON A DAILY WAGE**, therefore interventions have to be extremely cautious with extended displacement or extended closure of market parcels.
5. The market **LACKS BASIC ACCESS TO PUBLIC AMENITIES**, this causes significant **DECREASE IN PRODUCTIVITY** as well as general **DISCOMFORT** for local traders.

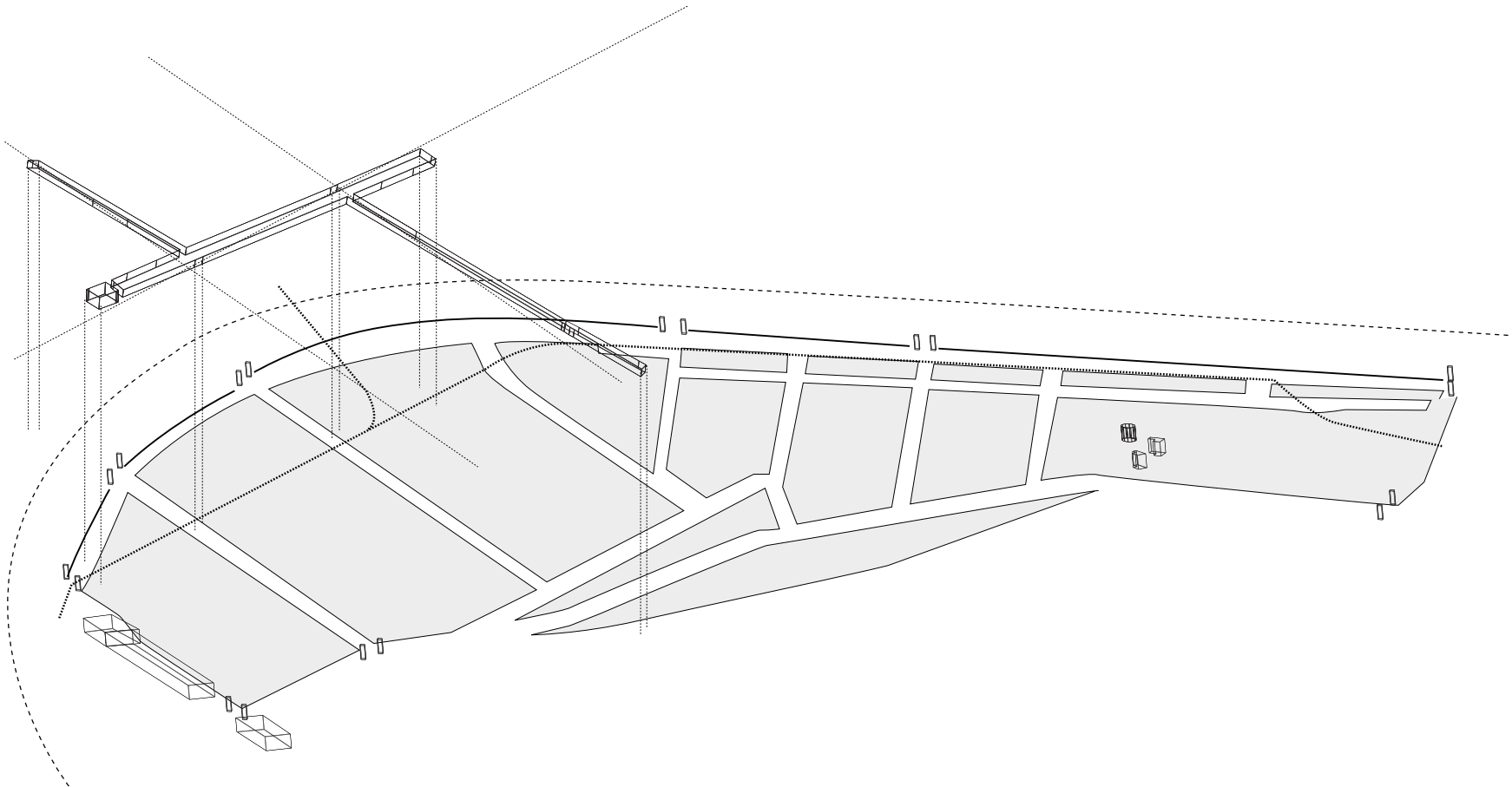
3.

INTERVENTION.

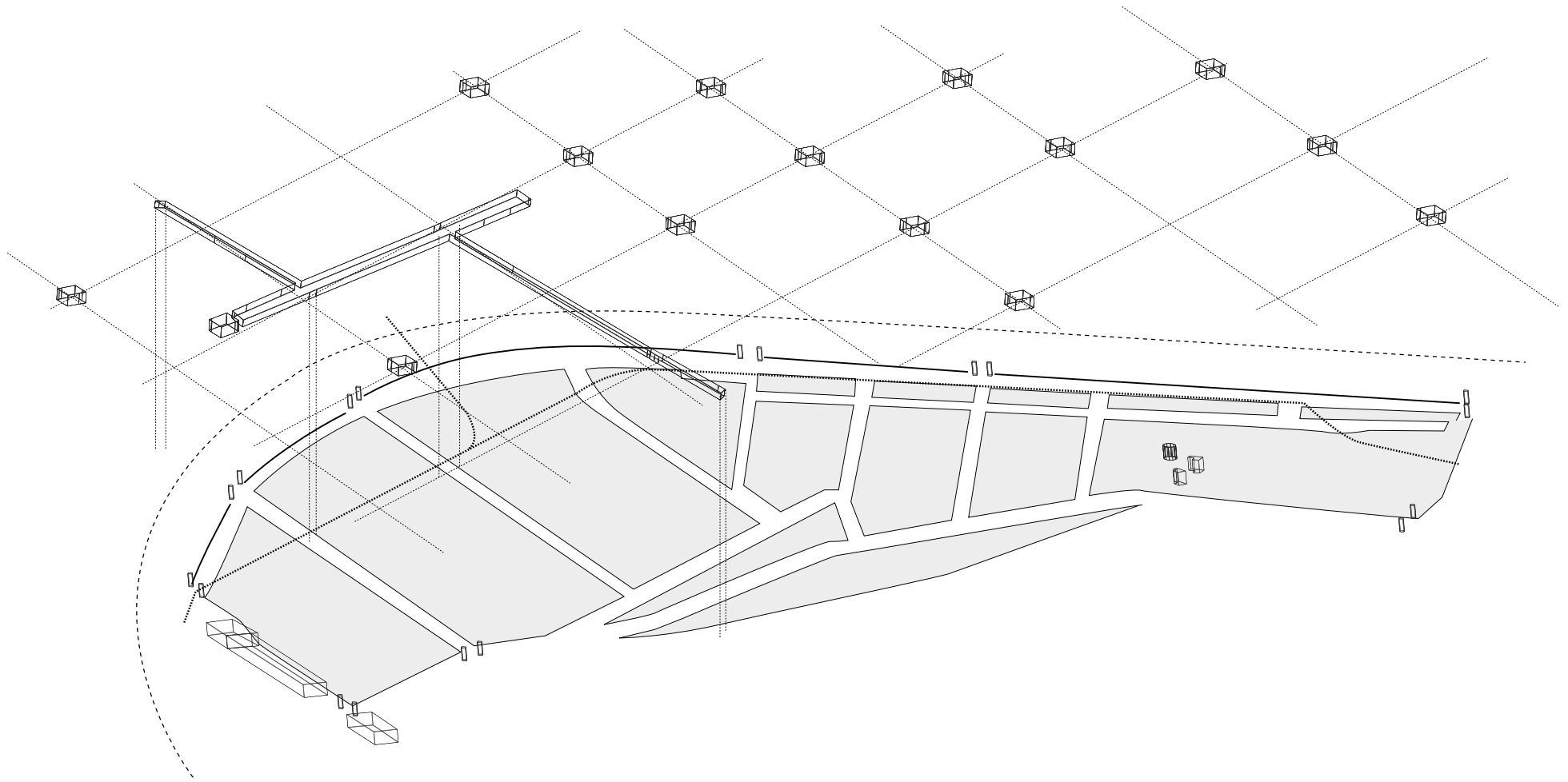
INTERVENTION IN CONTEXT - PLACE FOR PUBLIC AMENITIES



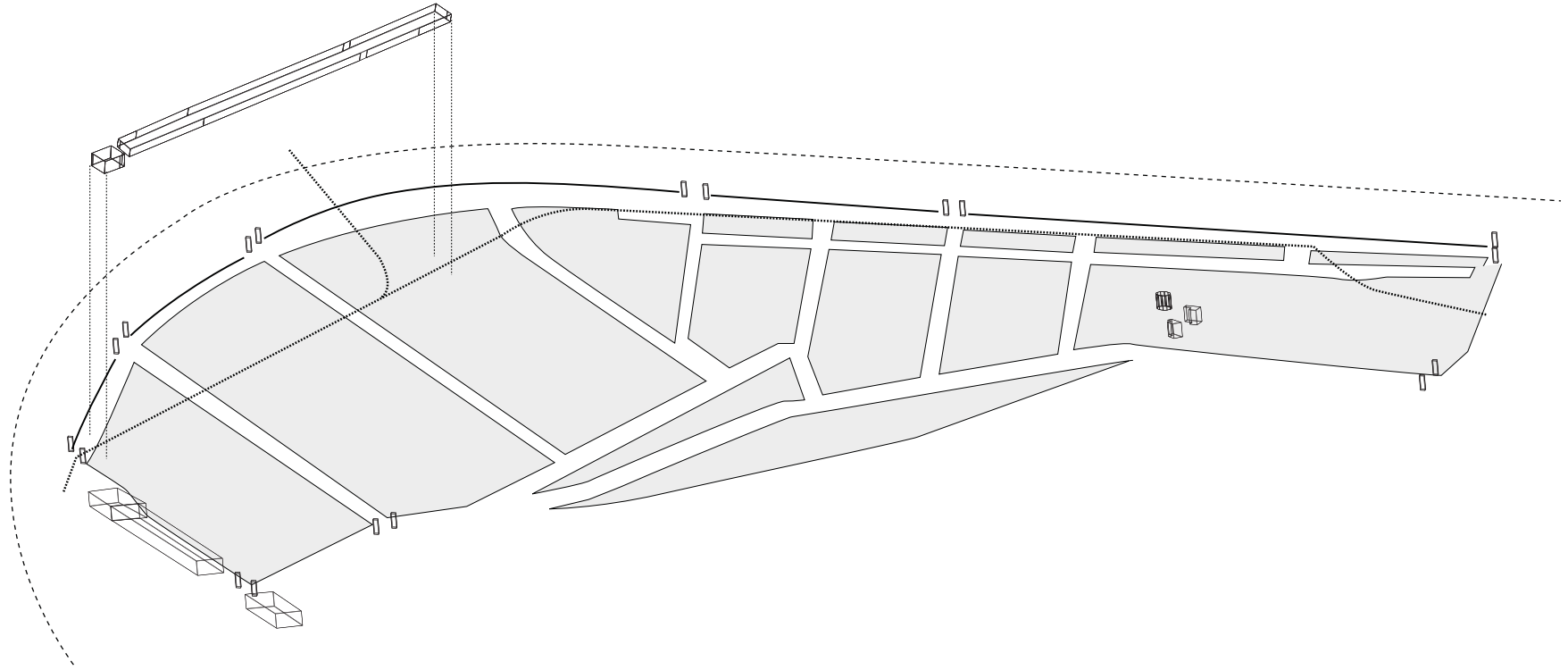
INTERVENTION IN CONTEXT - ACCESSIBILITY



INTERVENTION IN CONTEXT - COVERING OF THE ENTIRE MARKET



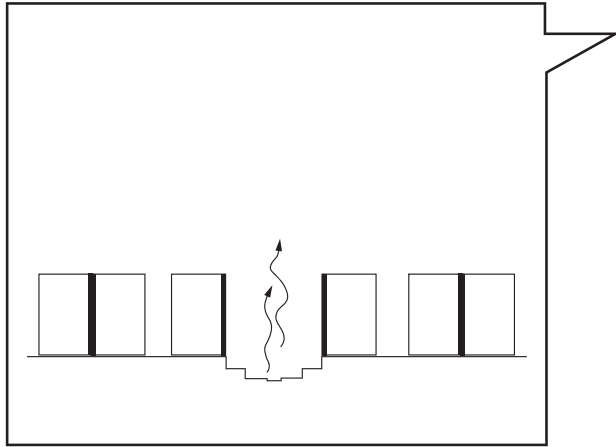
WHY ON THIS LOCATION?



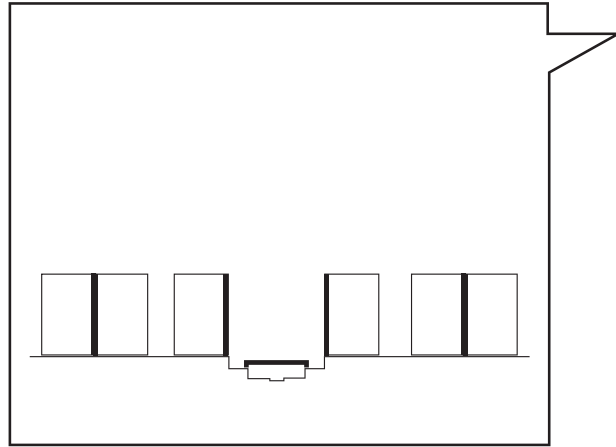


THE ONLY OPEN INFRASTRUCTURE WHICH PROVIDES SPACE TO BUILD

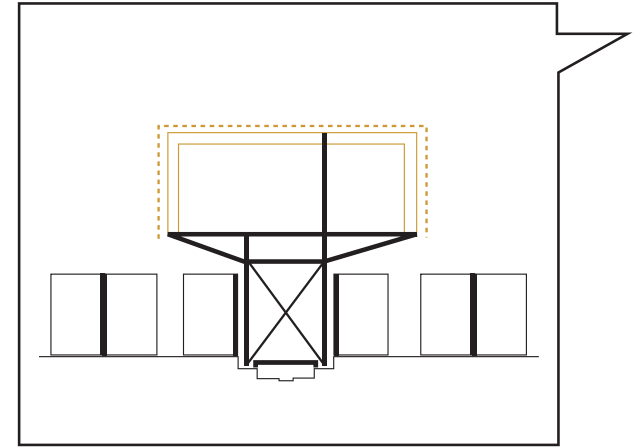
THE SITUATION IN THE DRAINAGE



SMELL

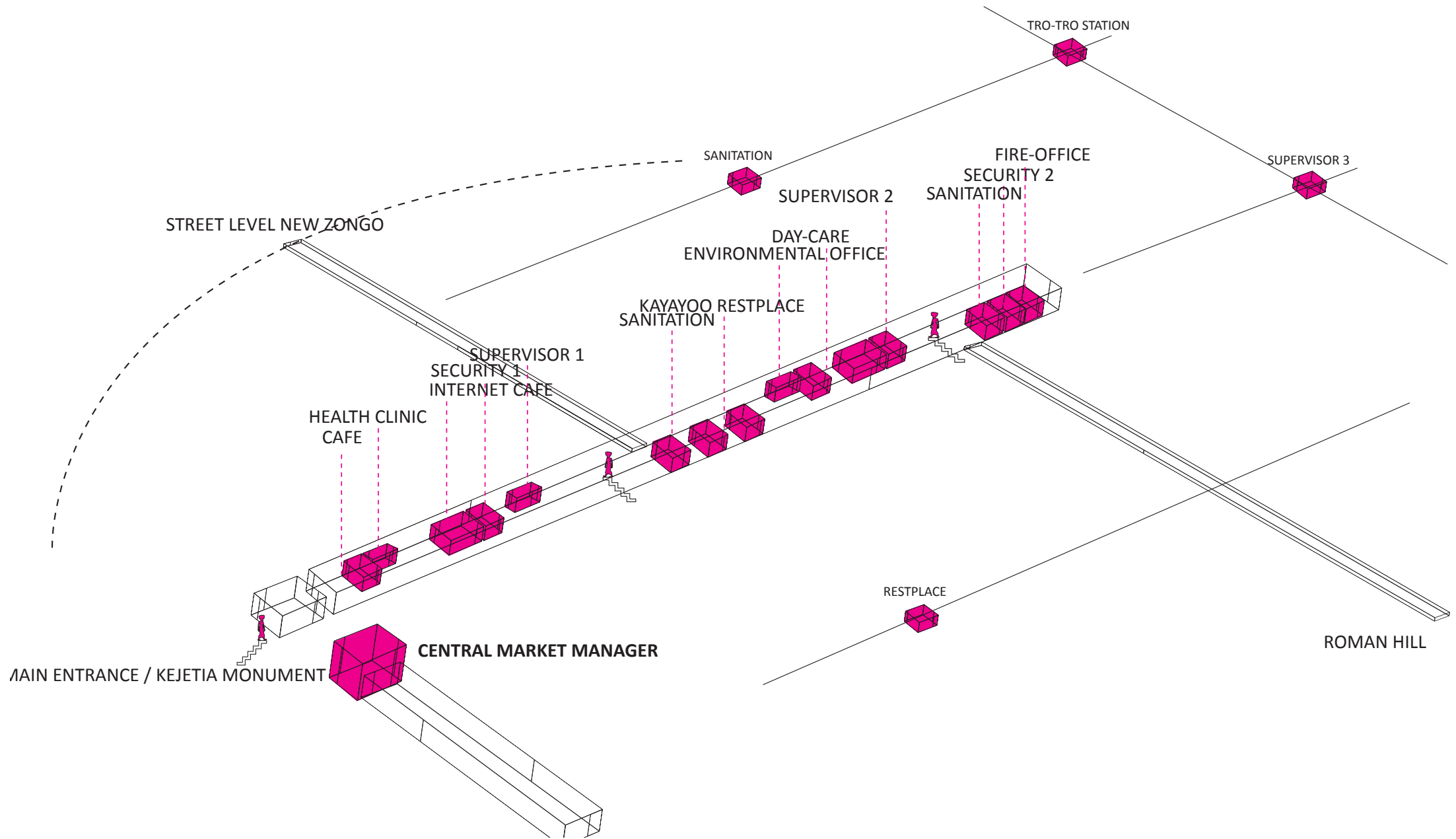


CLOSING DRAIN

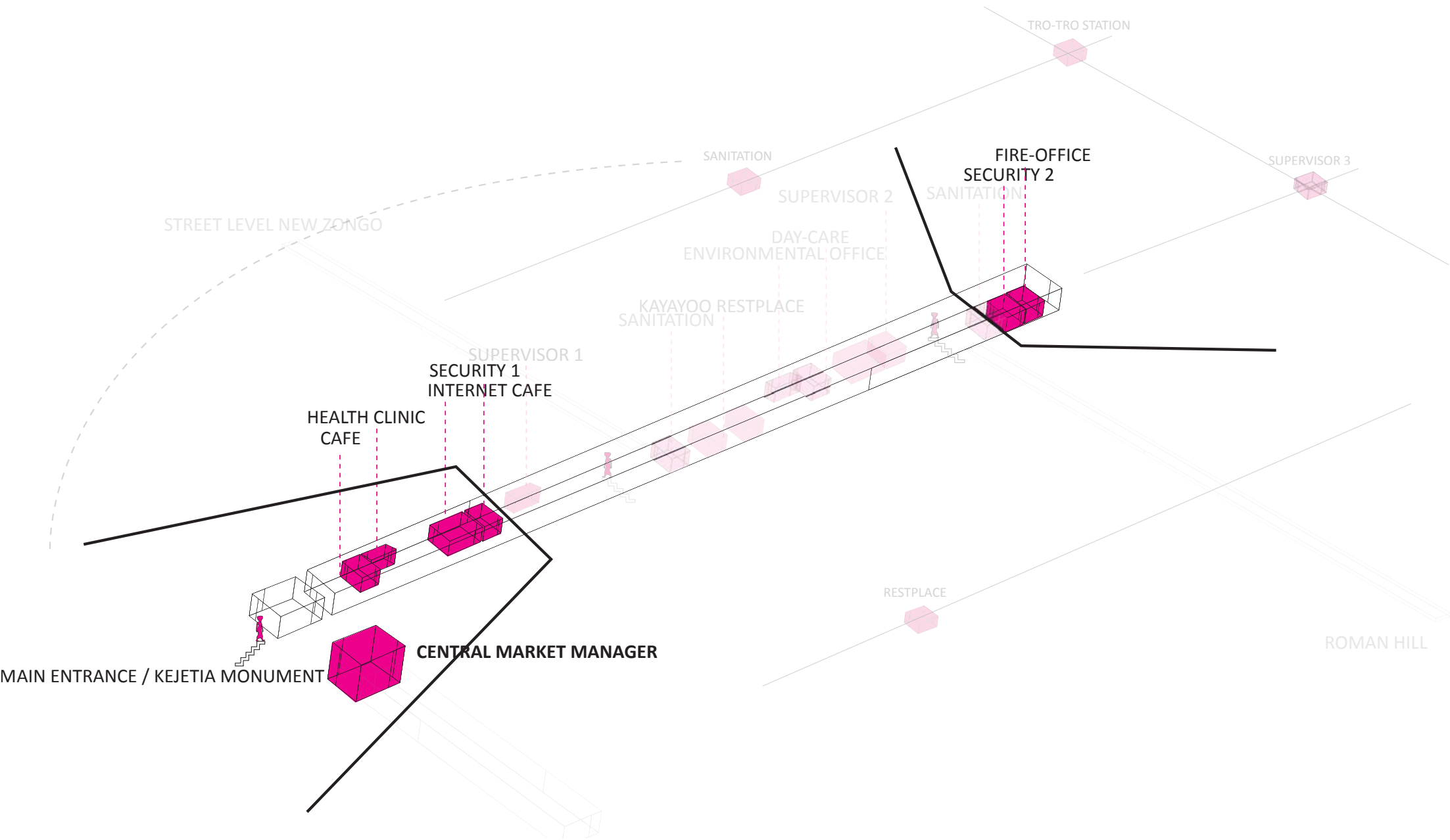


PLACING CONSTRUCTION

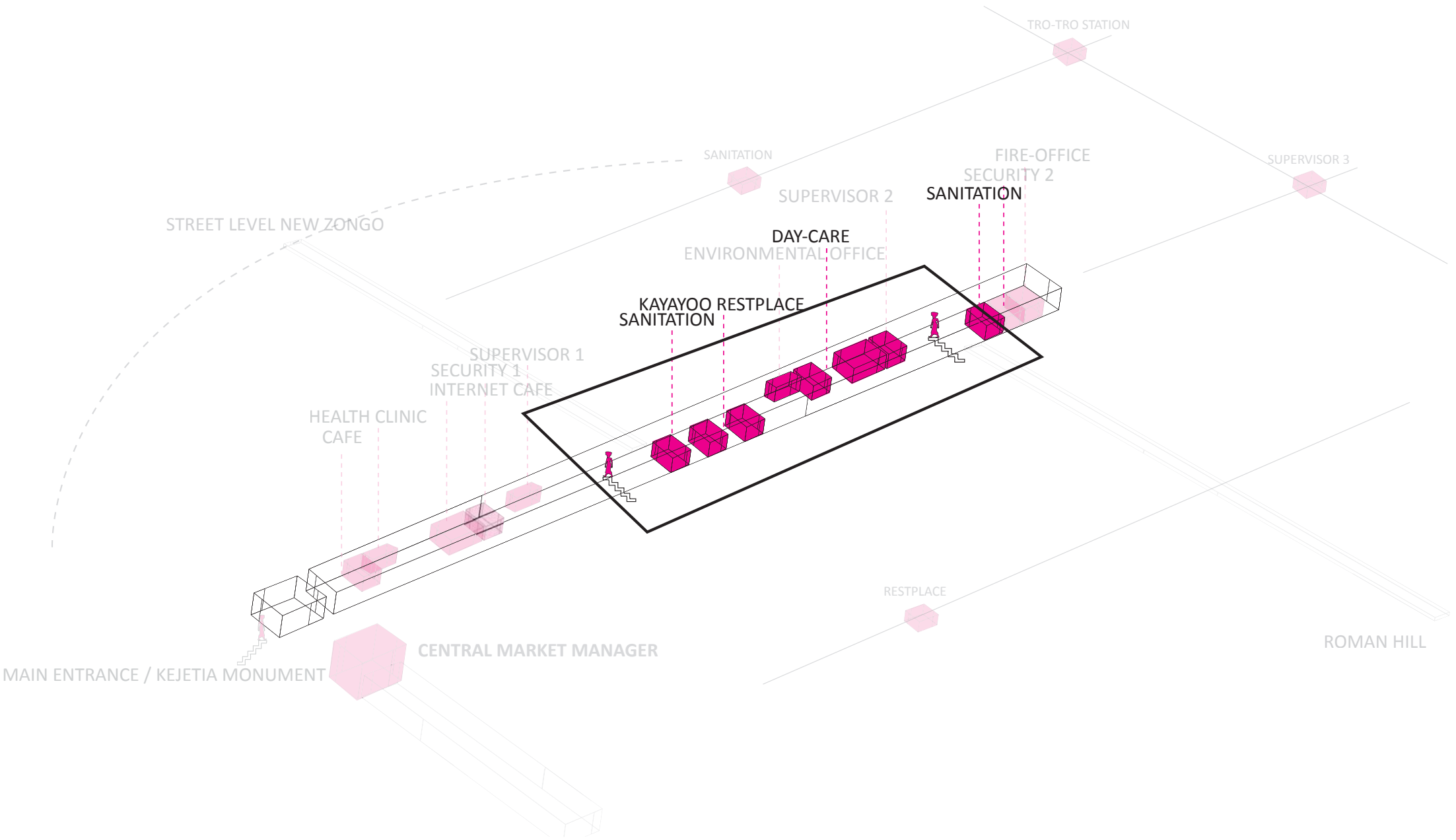
PUBLIC AMENITIES



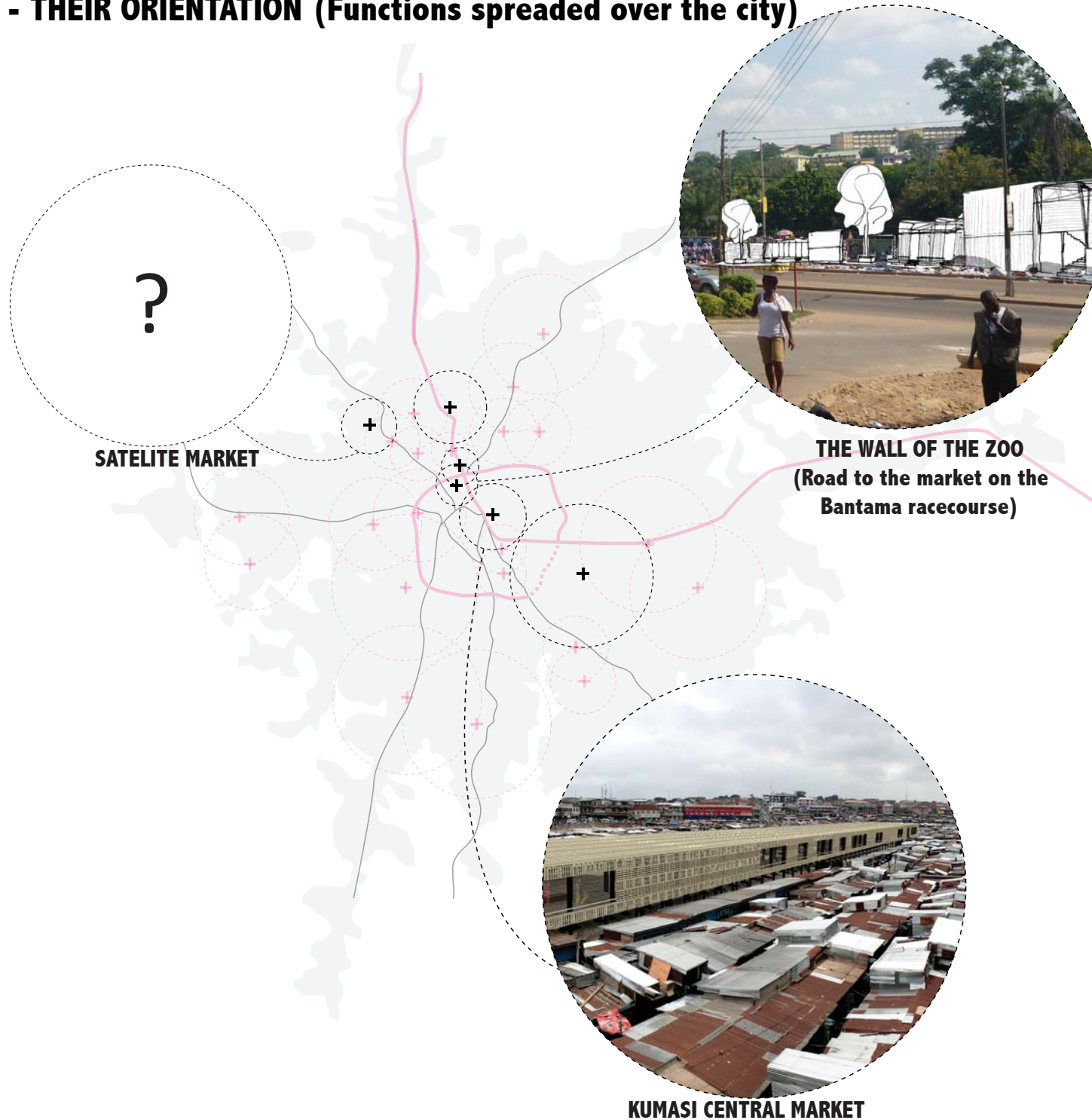
PUBLIC AMENITIES - THEIR ORIENTATION



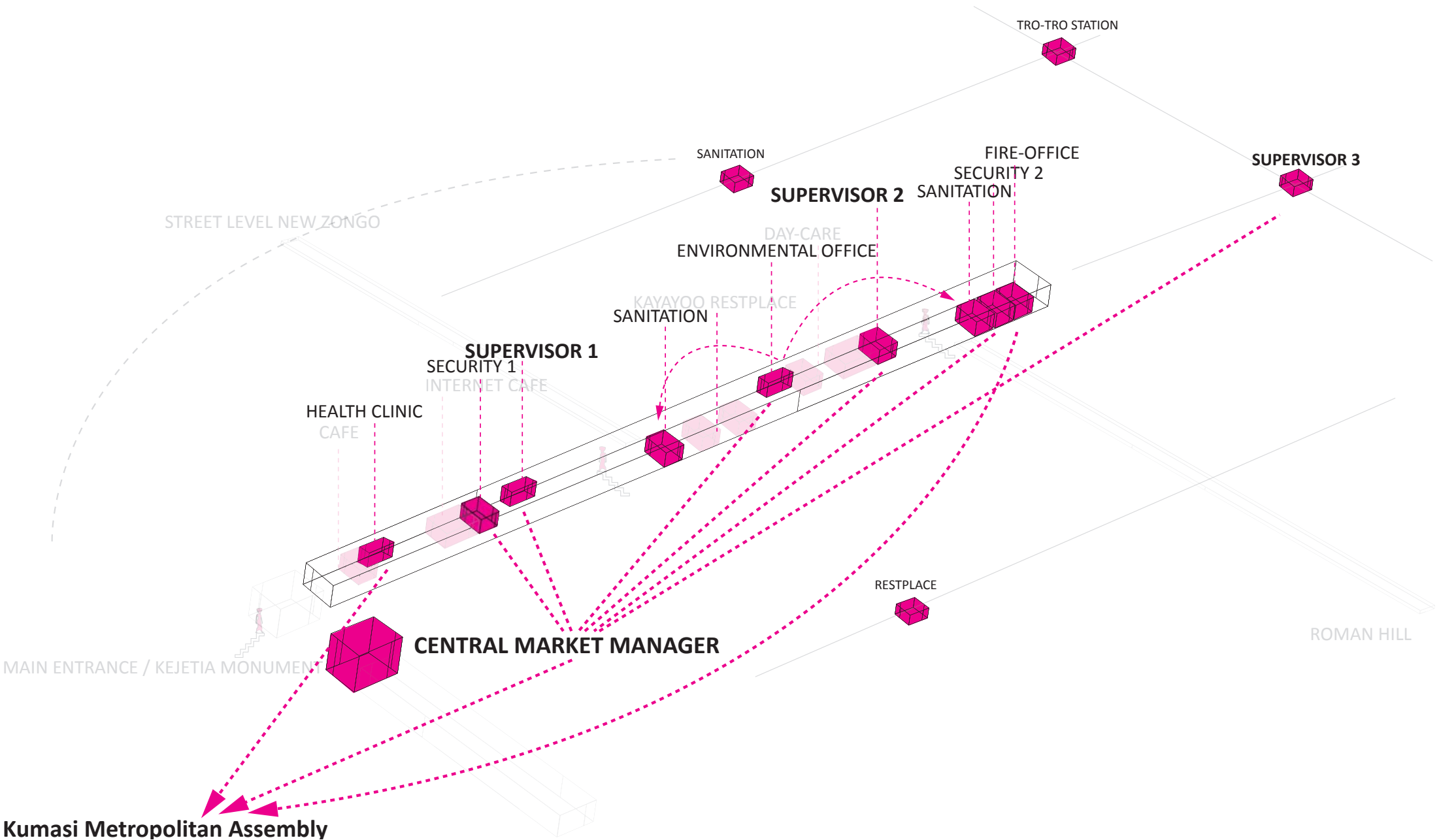
PUBLIC AMENITIES - THEIR ORIENTATION (Functions spreaded over the city)



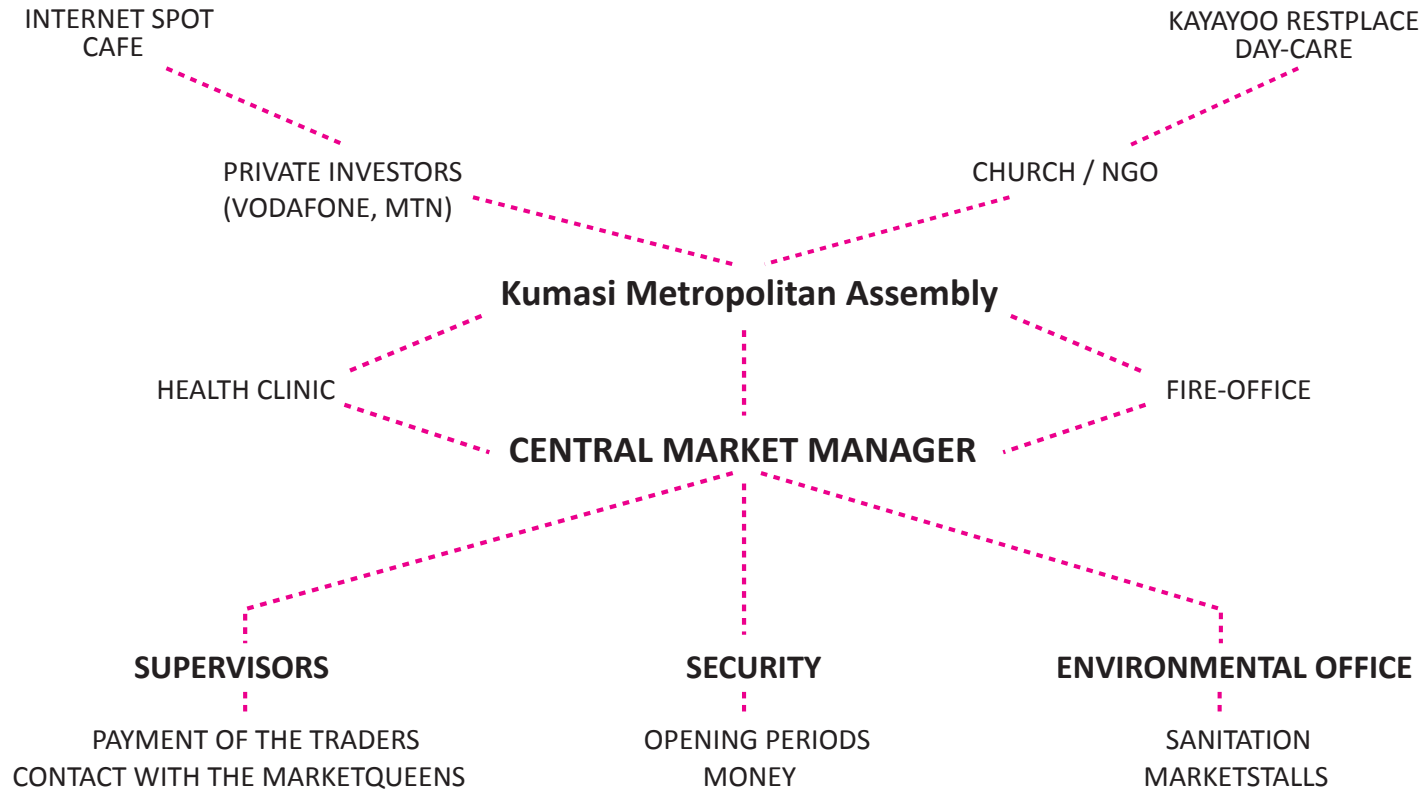
PUBLIC AMENITIES - THEIR ORIENTATION (Functions spreaded over the city)



ORGANIZATION AND RESPONSIBILITY



ORGANIZATION AND RESPONSIBILITY

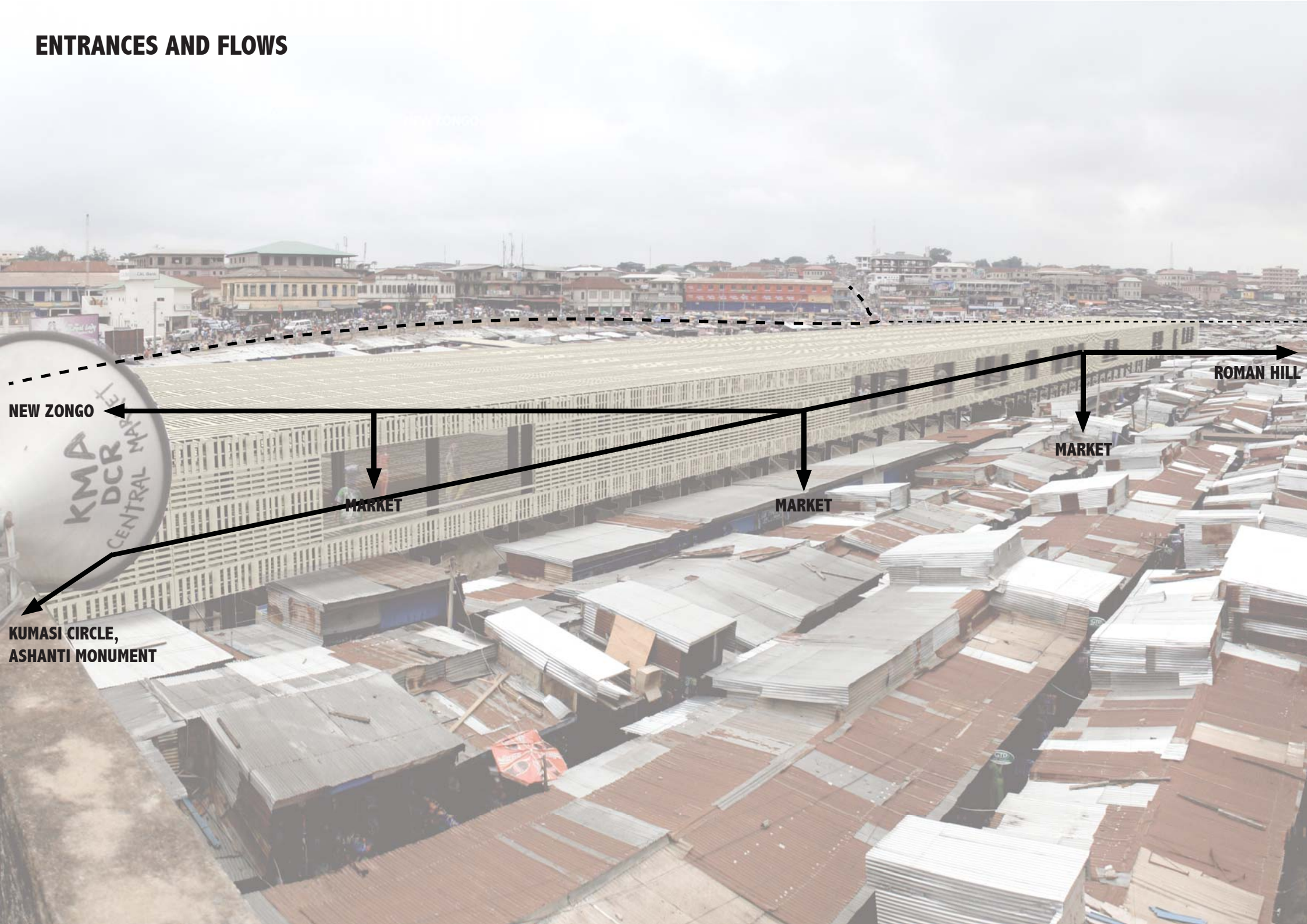


EMBEDDED IN THE ENVIRONMENT

NEW TONGO,



ENTRANCES AND FLOWS



NEW ZONGO



NEW ZONGO

ROMAN HILL

MARKET

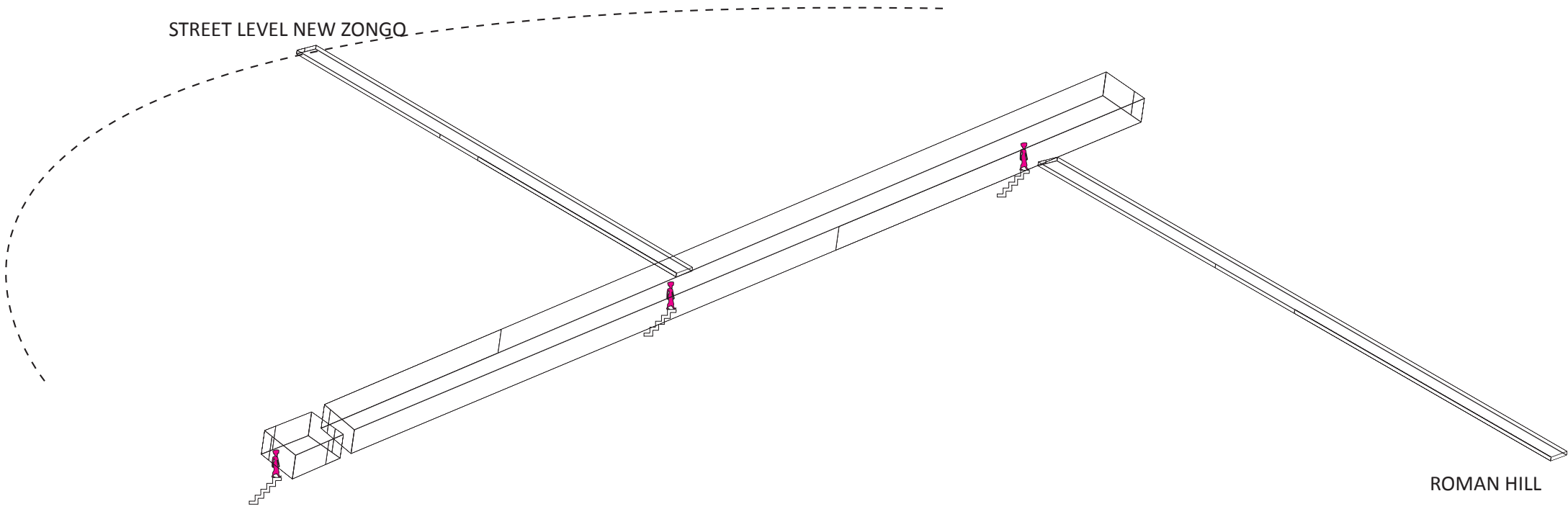
MARKET

MARKET

KUMASI CIRCLE,
ASHANTI MONUMENT

ENTRANCES AND FLOWS

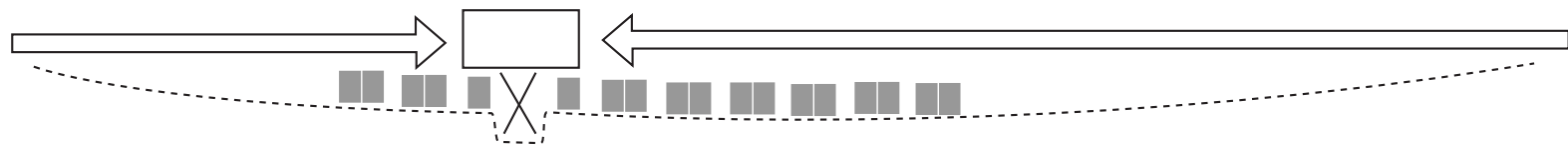
STREET LEVEL NEW ZONGO



ROMAN HILL

MAIN ENTRANCE / KEJETIA MONUMENT

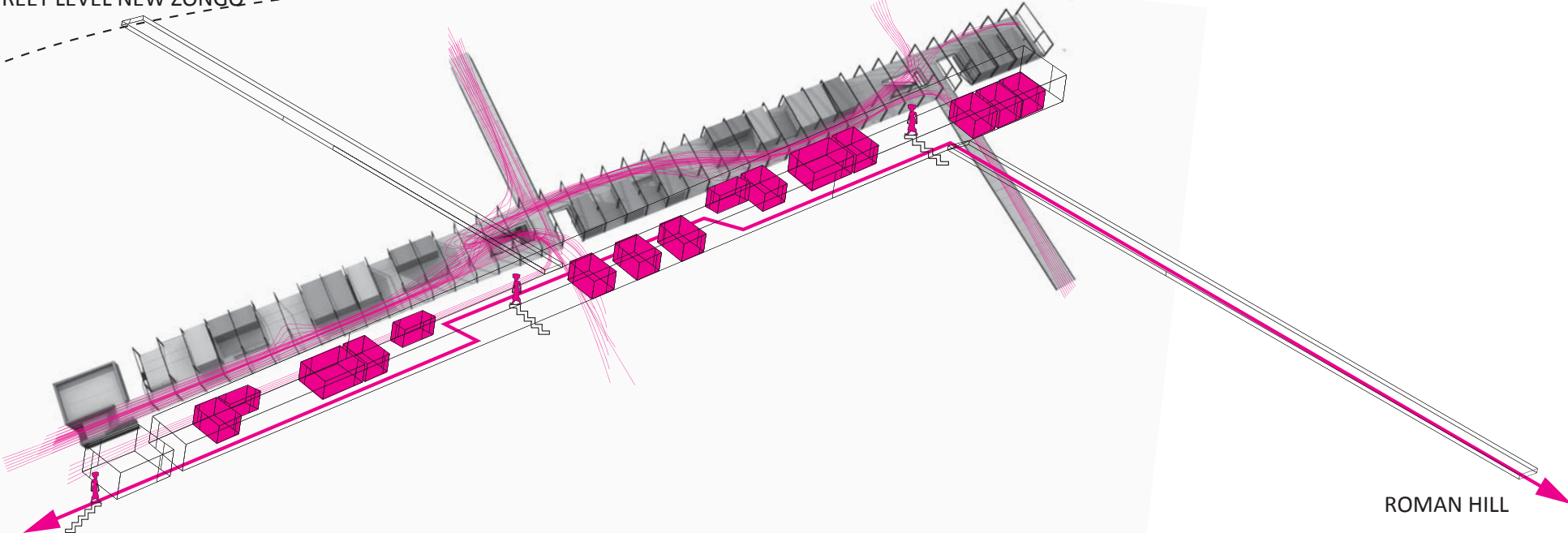
STREET LEVEL NEW ZONGO



ROMAN HILL

ENTRANCES AND FLOWS

STREET LEVEL NEW ZONGO



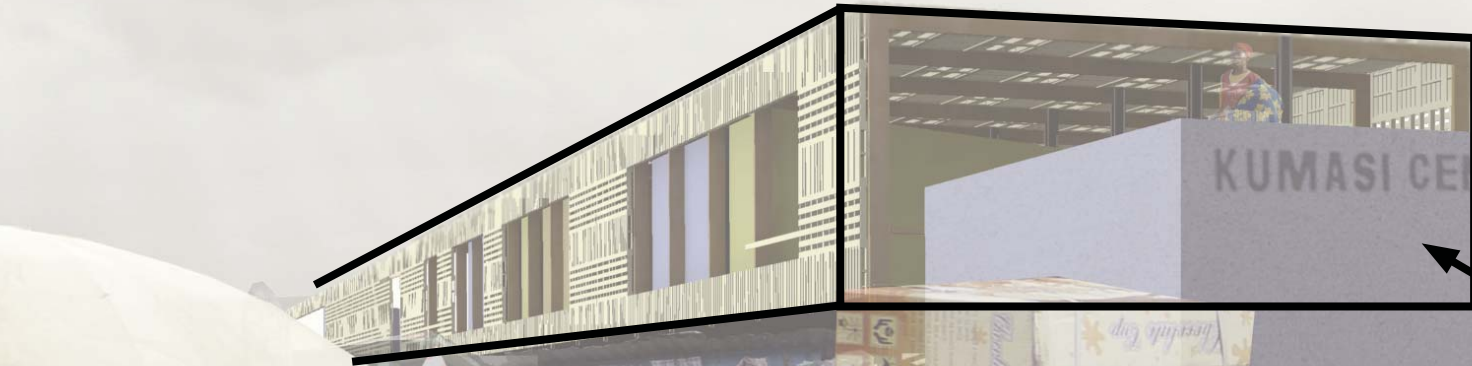
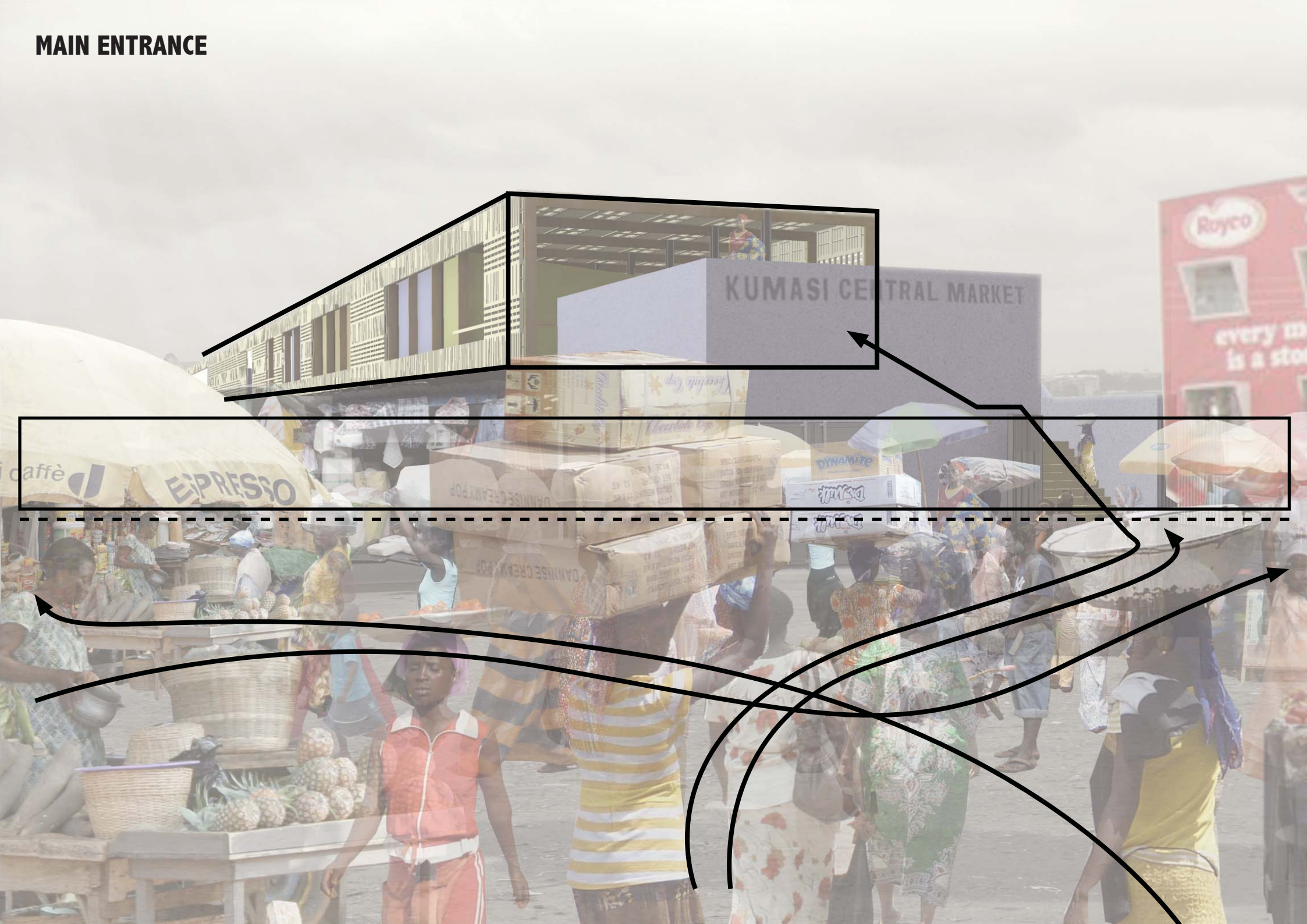
MAIN ENTRANCE / KEJETIA MONUMENT

ROMAN HILL

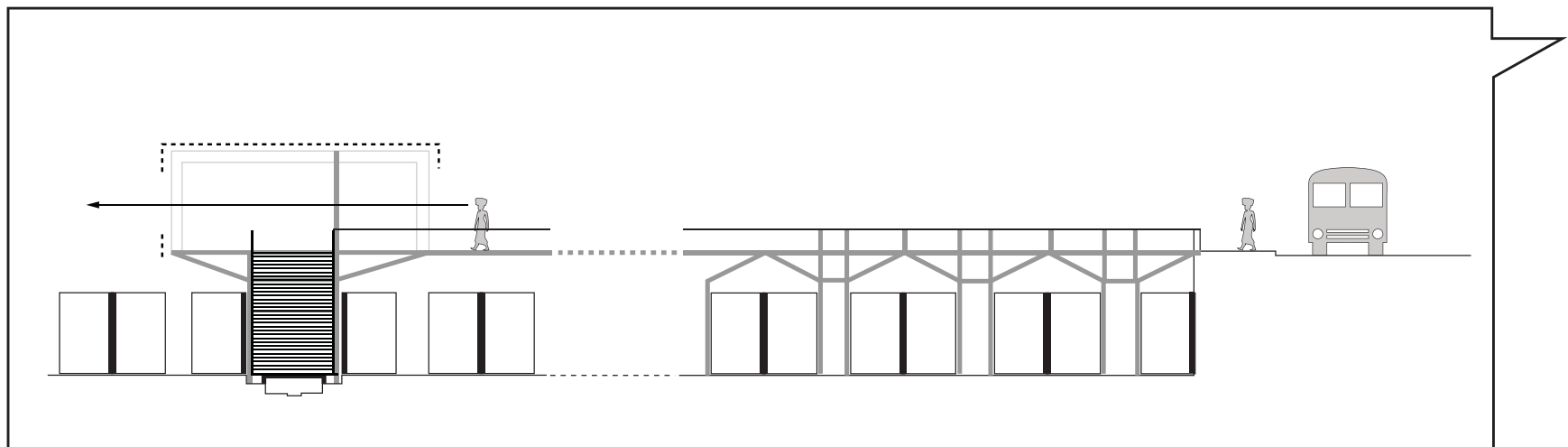
MAIN ENTRANCE



MAIN ENTRANCE



ROMAN HILL AND NEW ZONGO - ENTRANCES

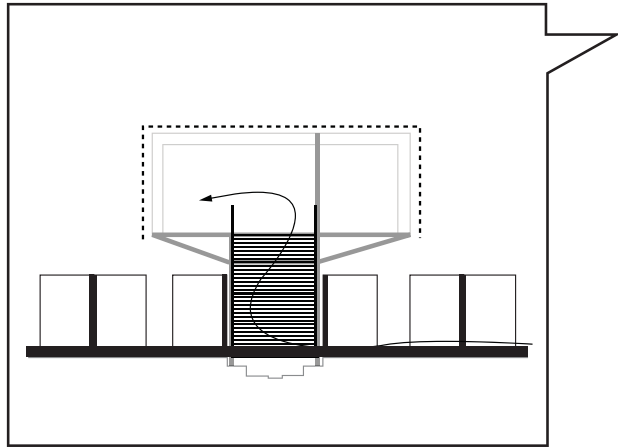


NEW-ZONGO CONNECTION

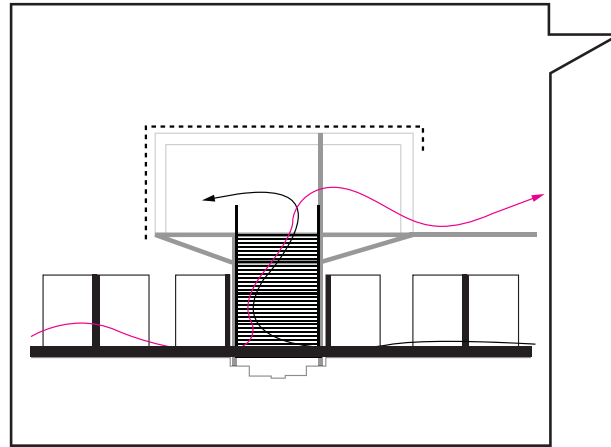
ROMAN HILL AND NEW ZONGO - ENTRANCES



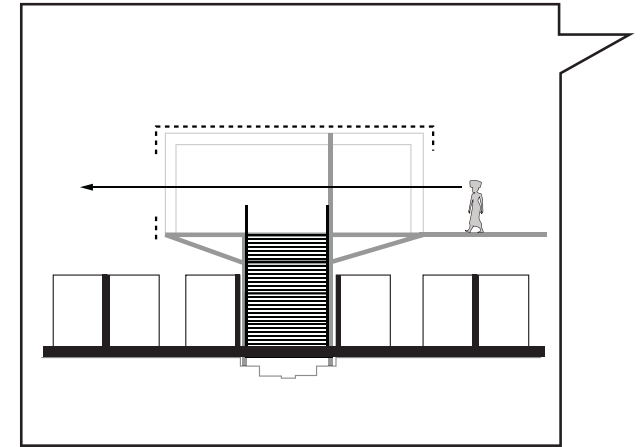
INSIDE THE MARKET ENTRANCES



STAIRS



BY PASS ROMAN HILL

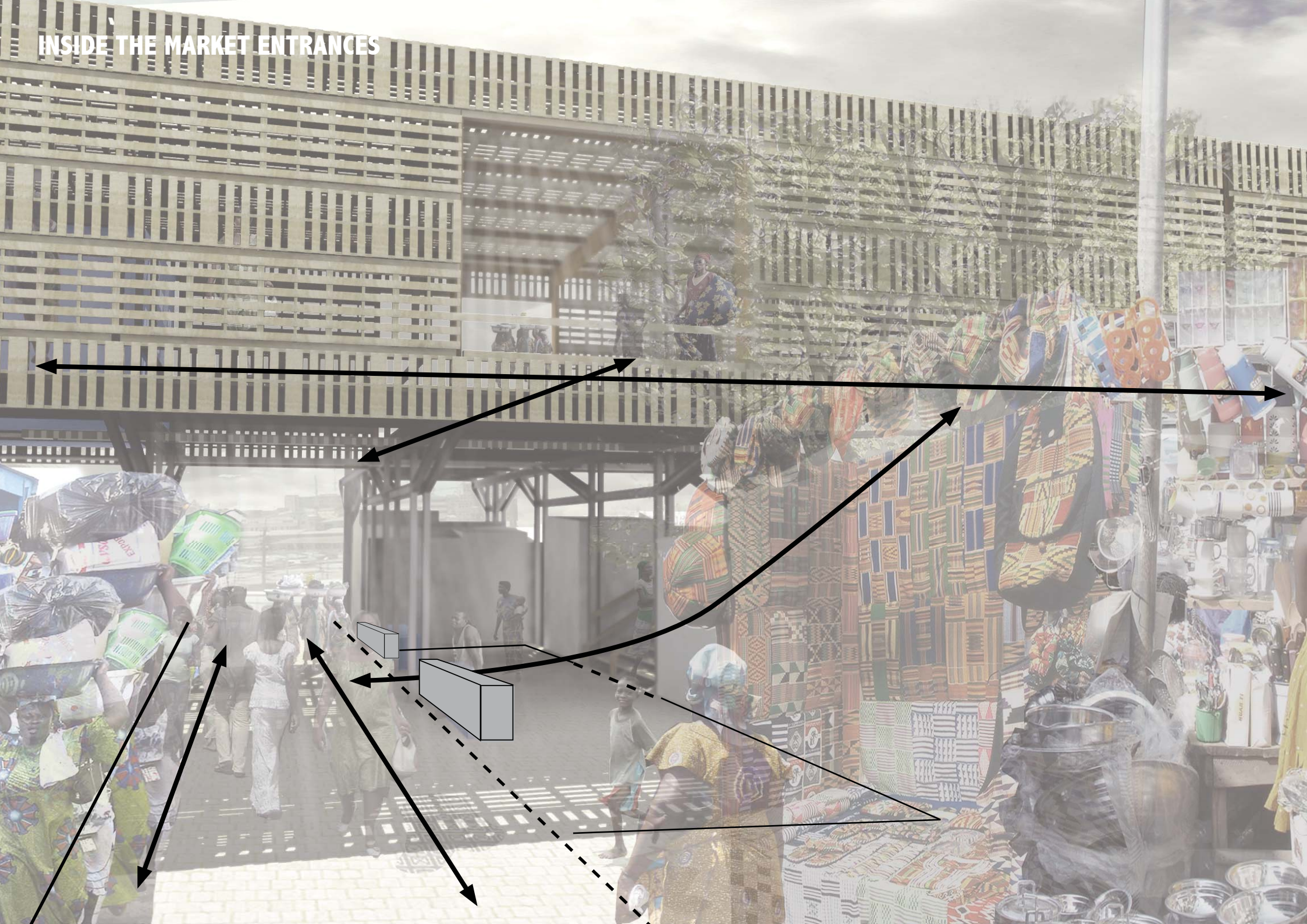


OVERVIEW MARKET

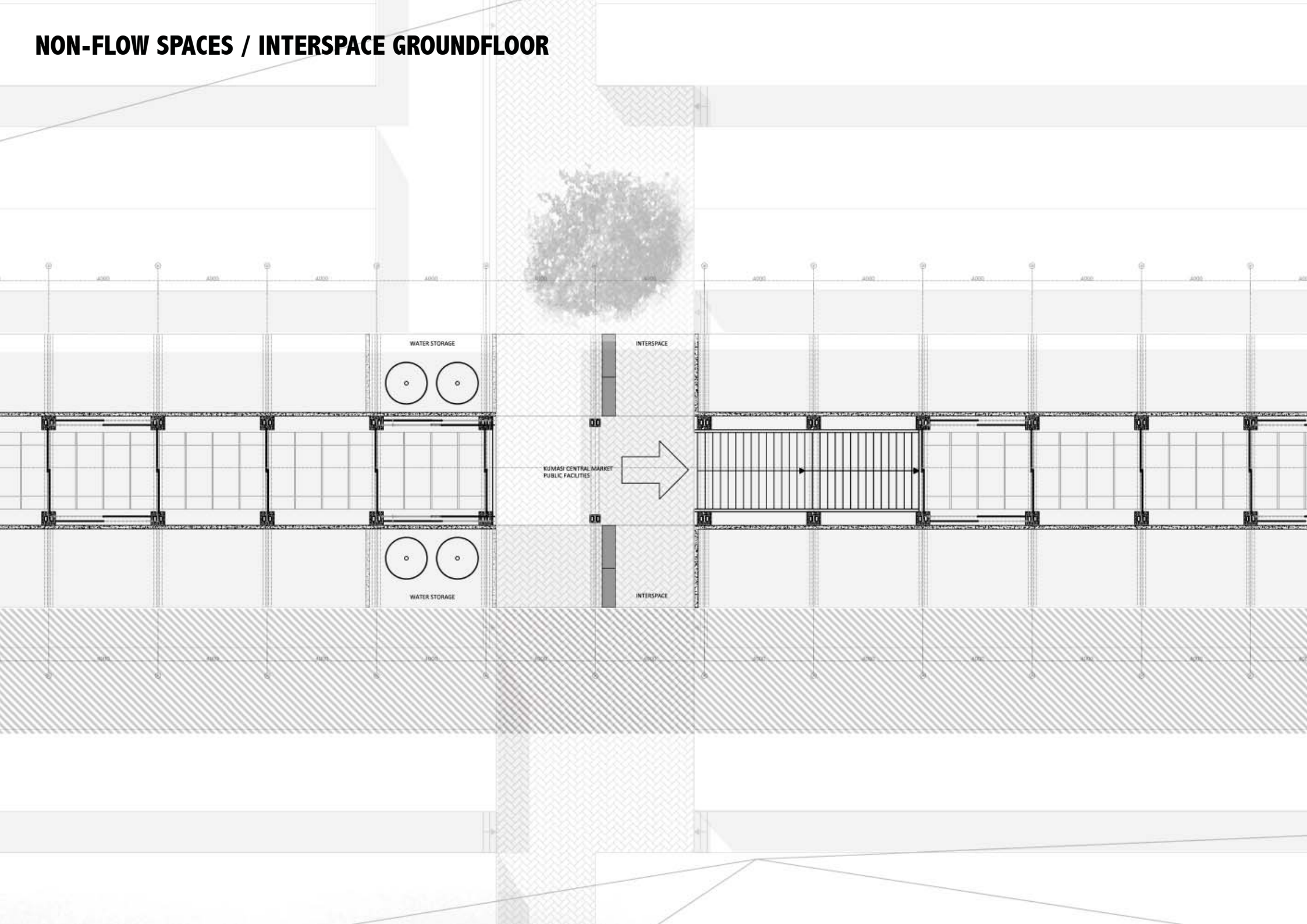
INSIDE THE MARKET ENTRANCES



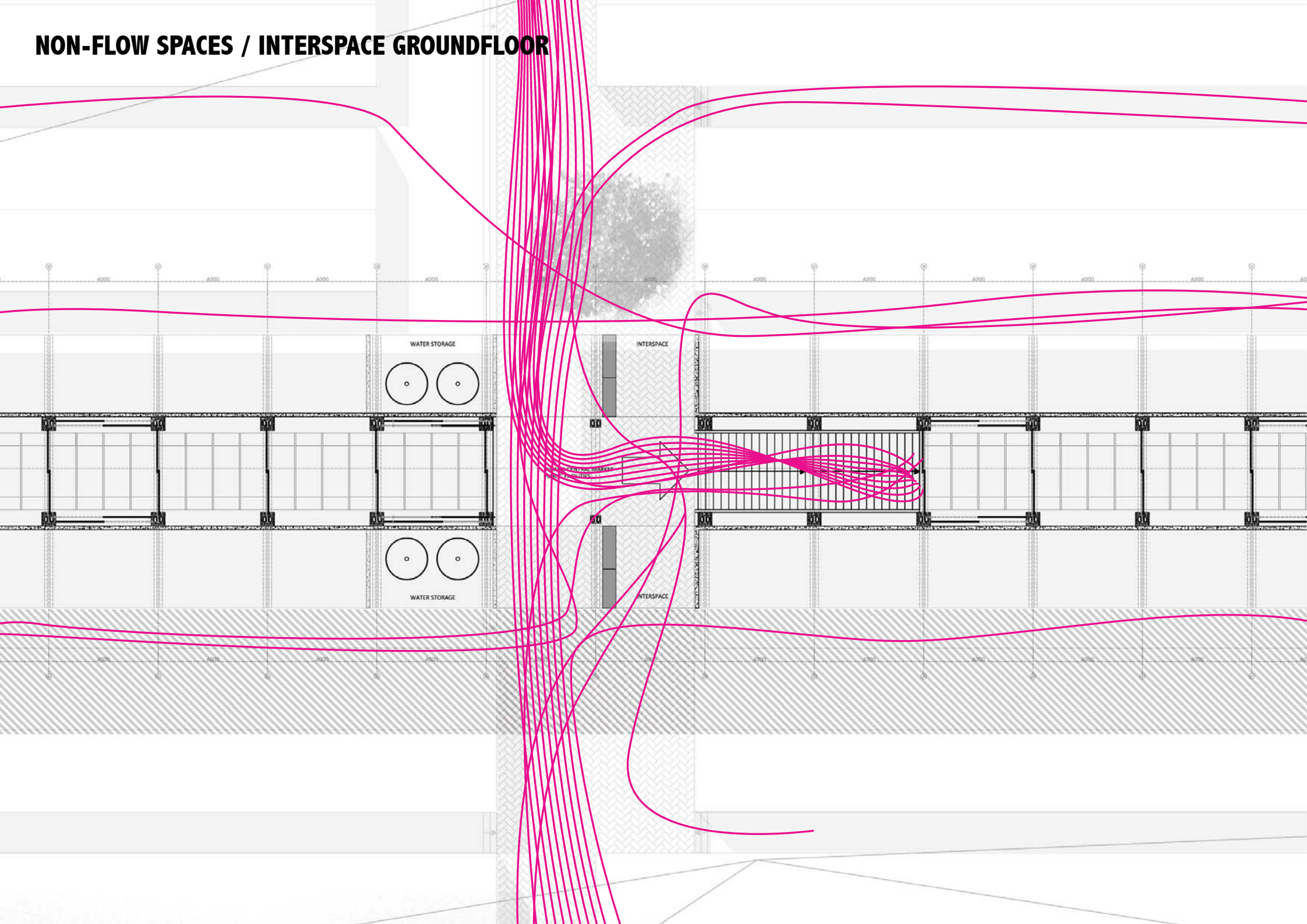
INSIDE THE MARKET ENTRANCES



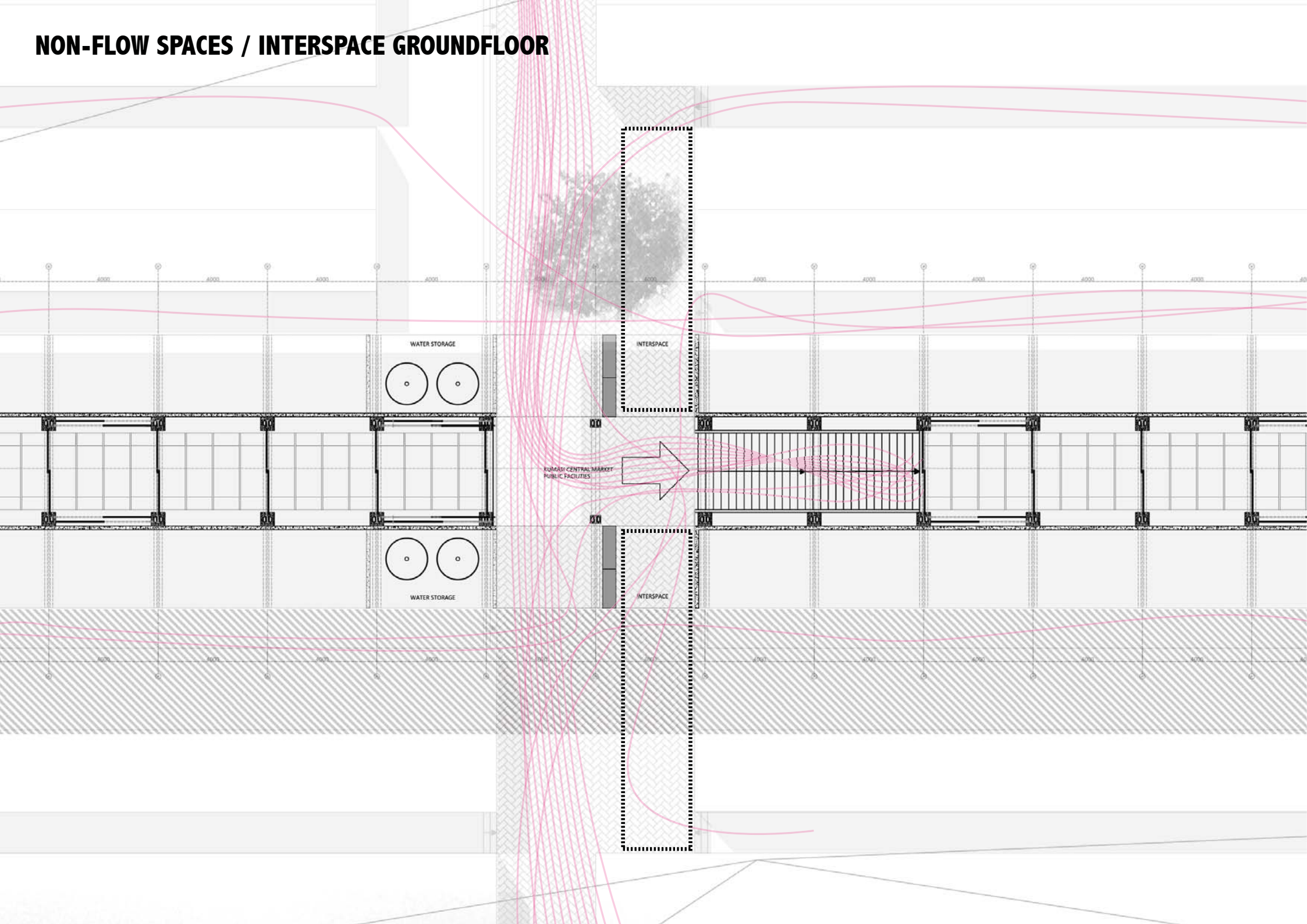
NON-FLOW SPACES / INTERSPACE GROUND FLOOR



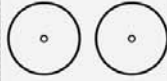
NON-FLOW SPACES / INTERSPACE GROUND FLOOR



NON-FLOW SPACES / INTERSPACE GROUND FLOOR

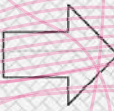


WATER STORAGE



INTERSPACE

KUMASI CENTRAL MARKET
PUBLIC FACILITIES



WATER STORAGE

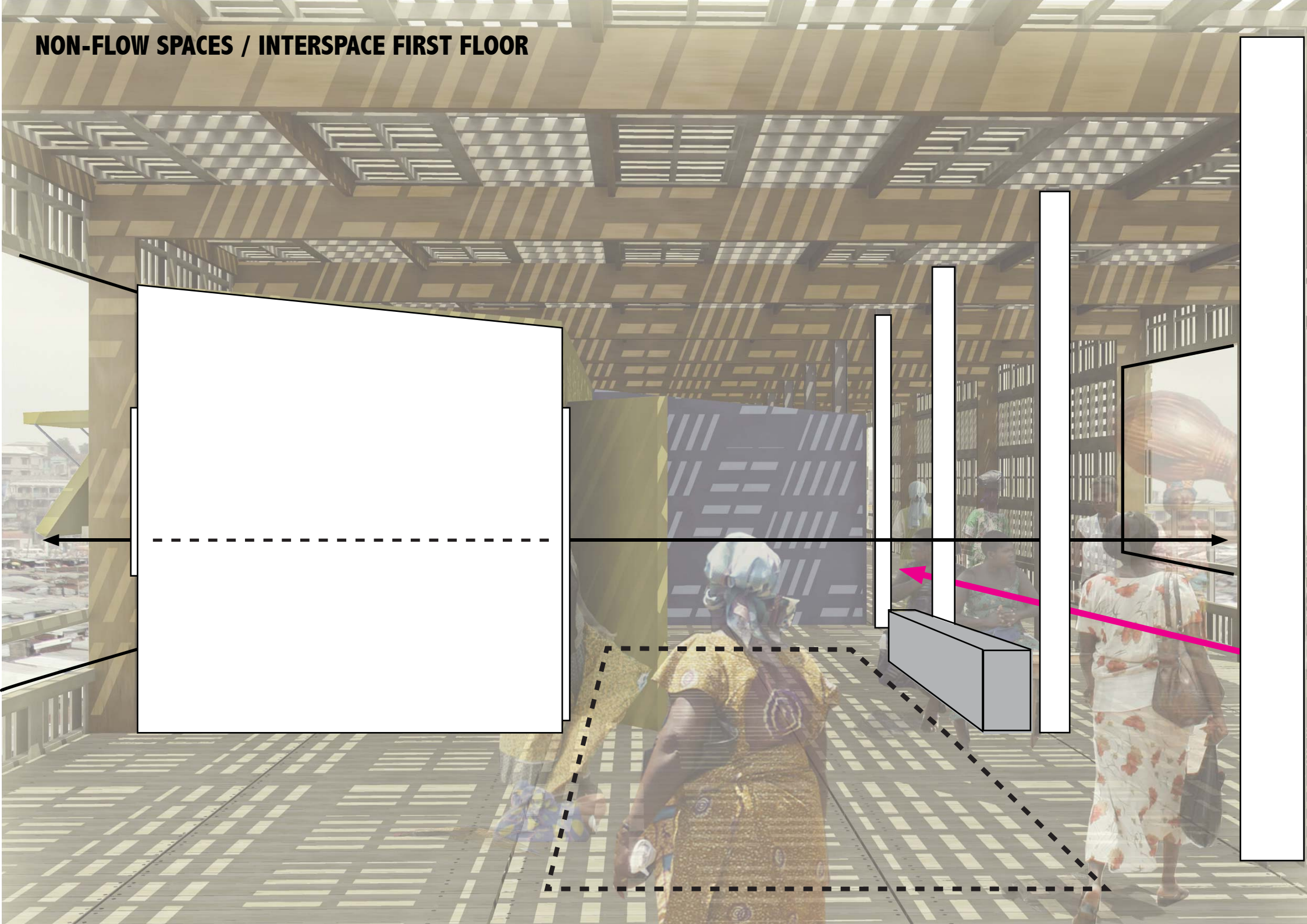


INTERSPACE

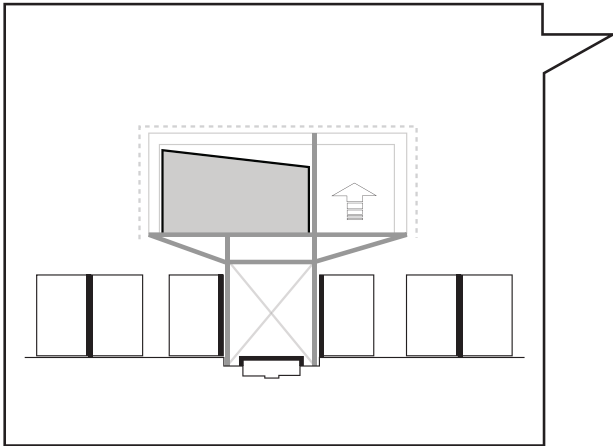
NON-FLOW SPACES / INTERSPACE FIRST FLOOR



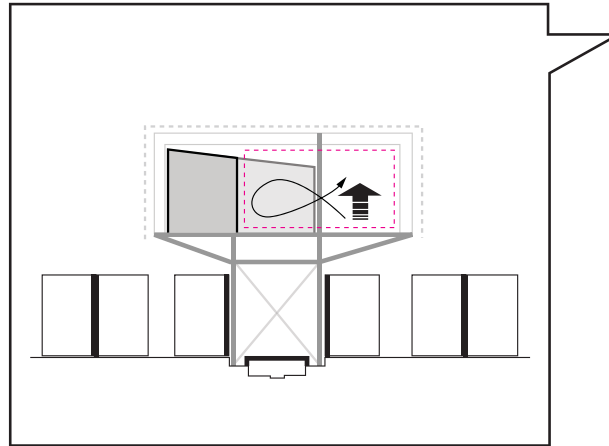
NON-FLOW SPACES / INTERSPACE FIRST FLOOR



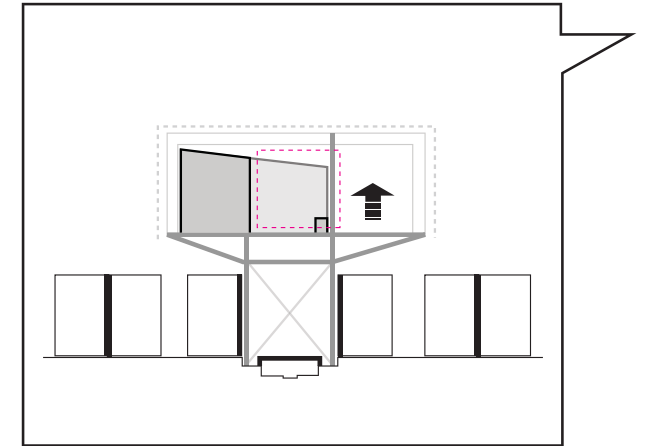
NON-FLOW SPACES / INTERSPACE FIRST FLOOR



BY-PASS

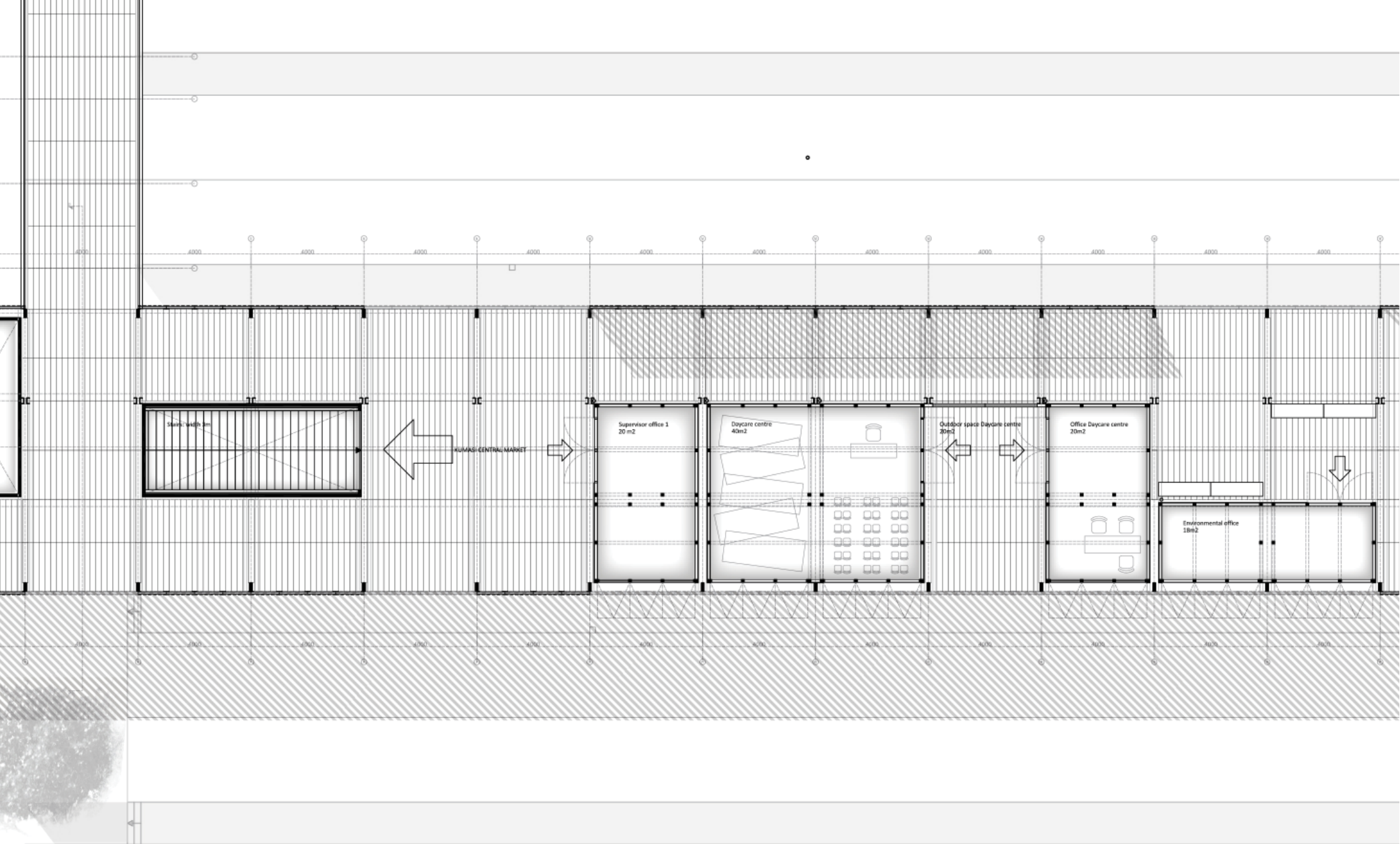


NON-FLOW-SPACE
TAKE A STEP AWAY

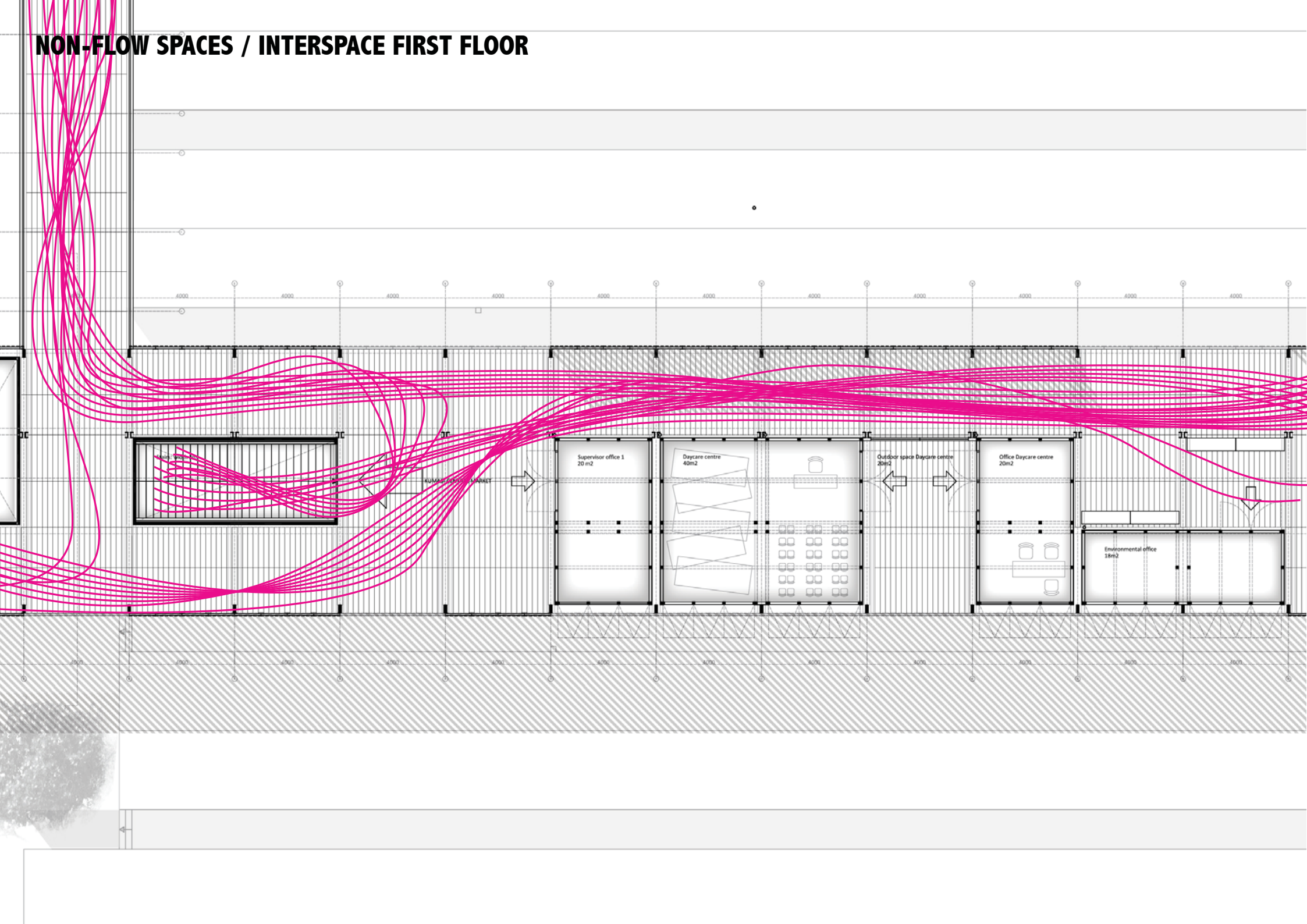


PRIVATE NON-FLOW-SPACE

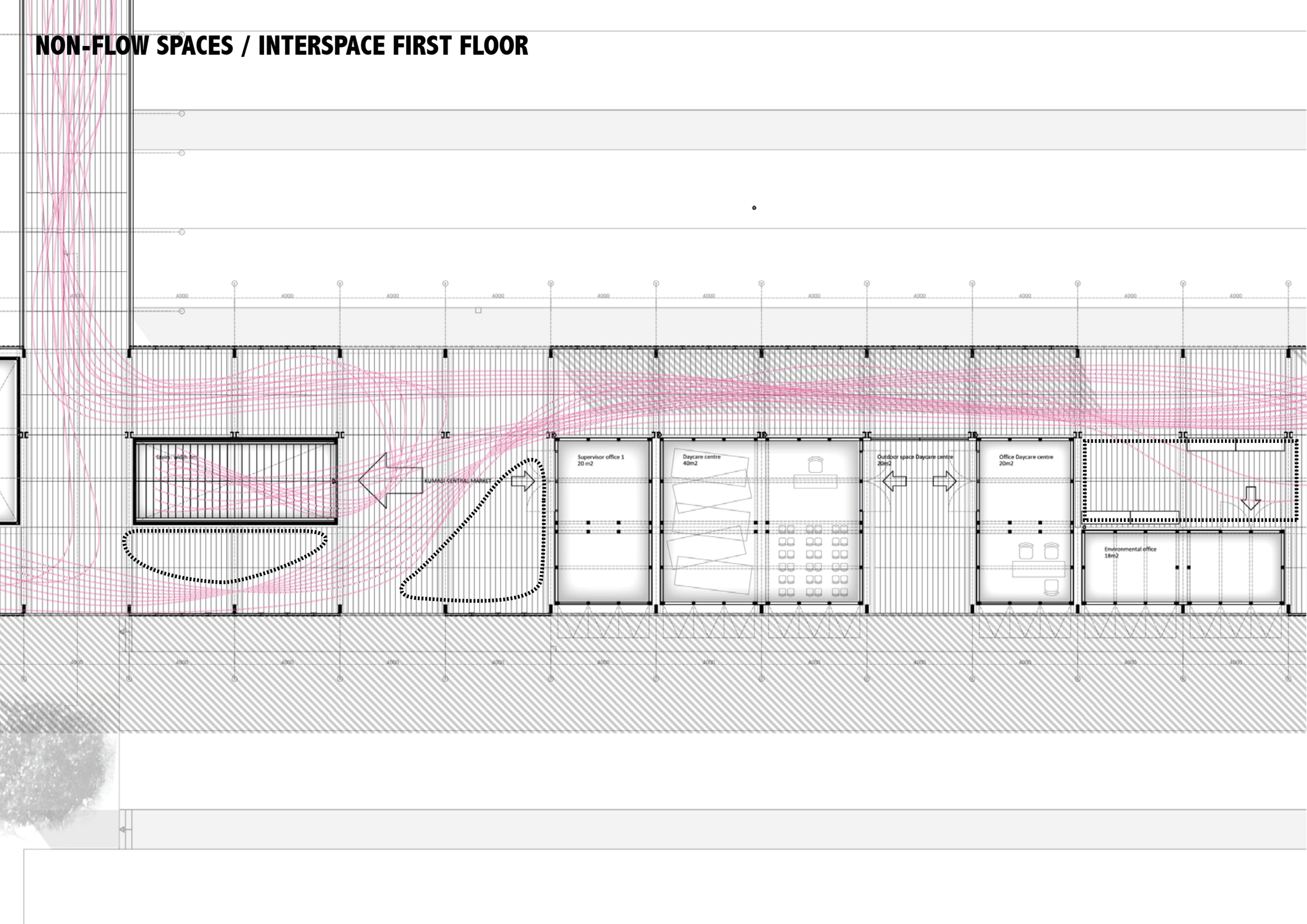
NON-FLOW SPACES / INTERSPACE FIRST FLOOR



NON-FLOW SPACES / INTERSPACE FIRST FLOOR



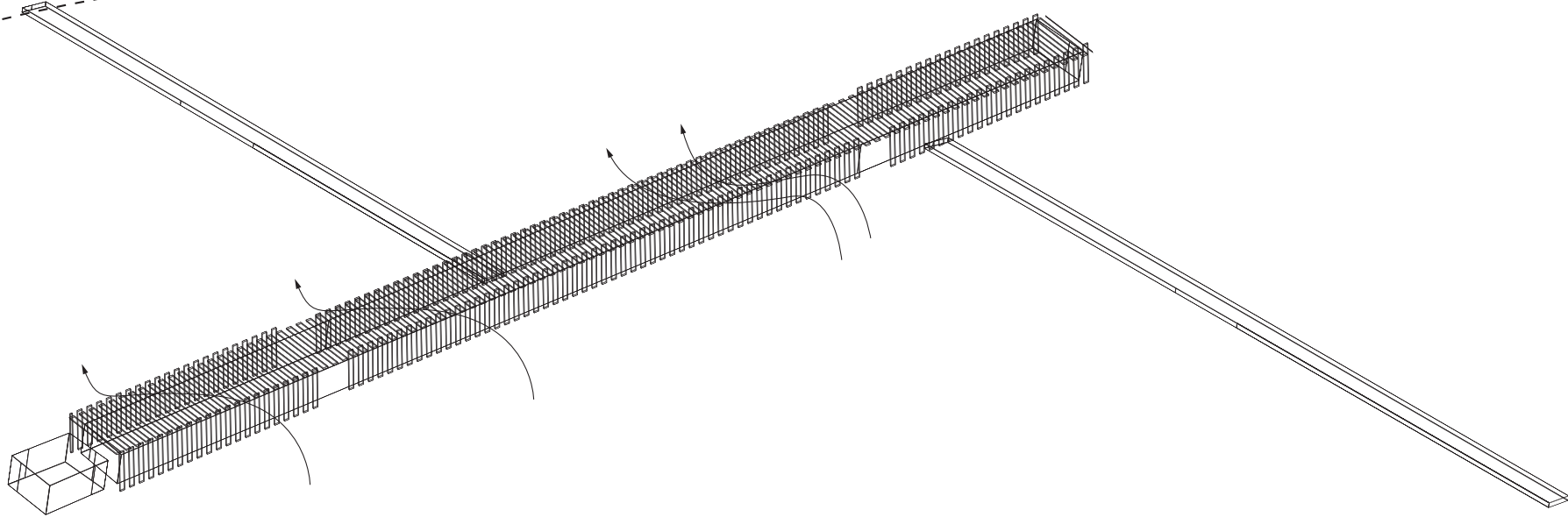
NON-FLOW SPACES / INTERSPACE FIRST FLOOR



ATMOSPHERE



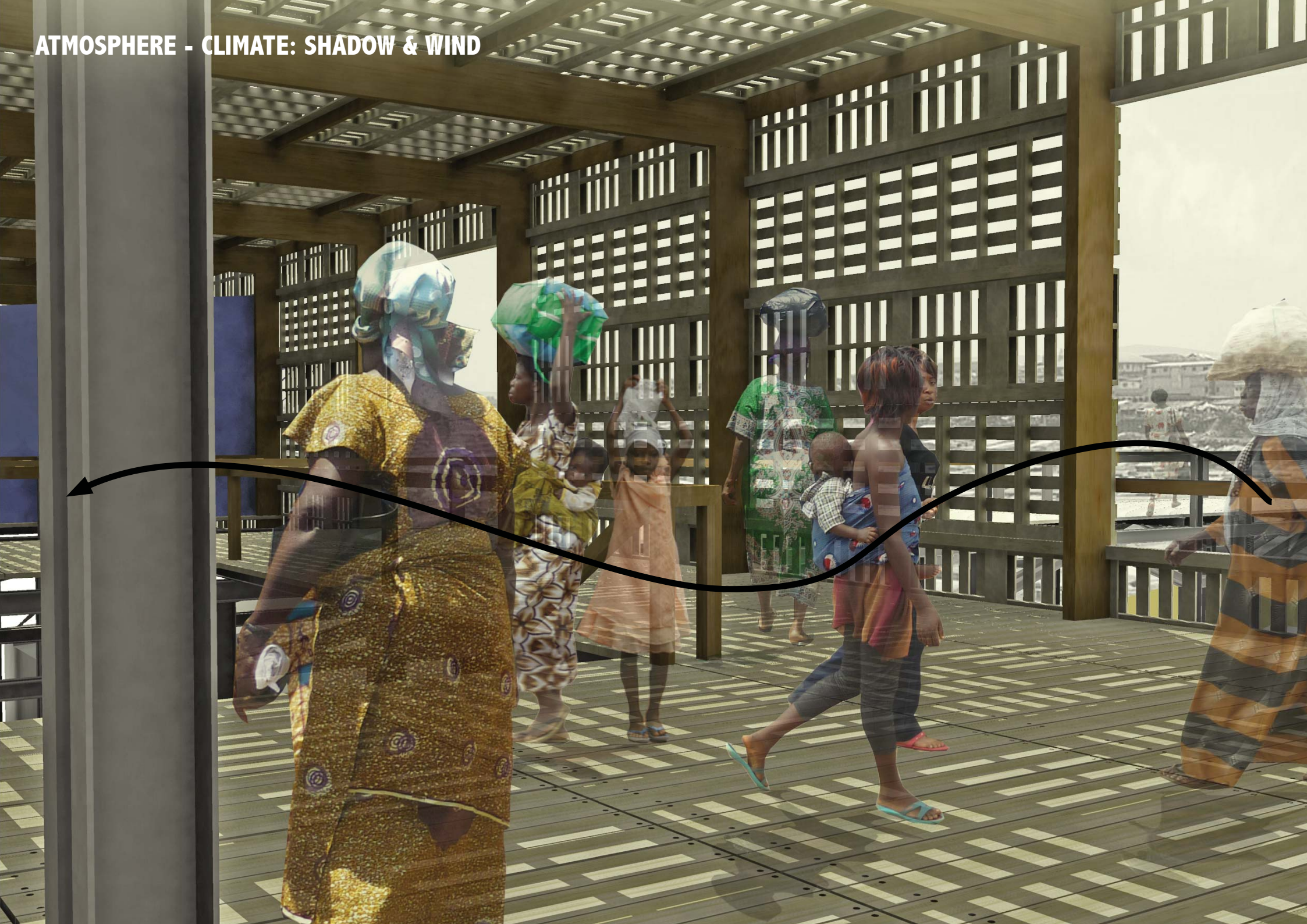
STREET LEVEL NEW ZONGO



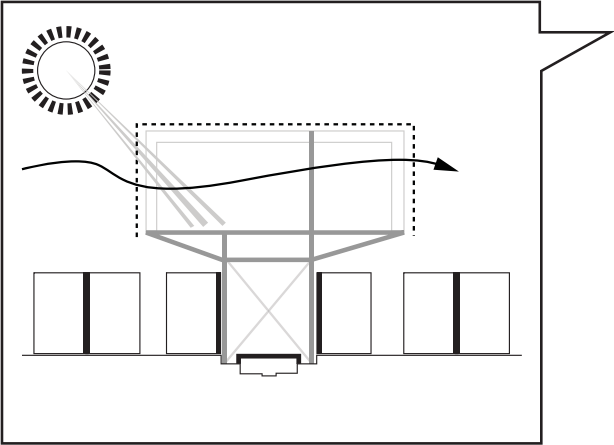
MAIN ENTRANCE / KEJETIA MONUMENT

ROMAN HILL

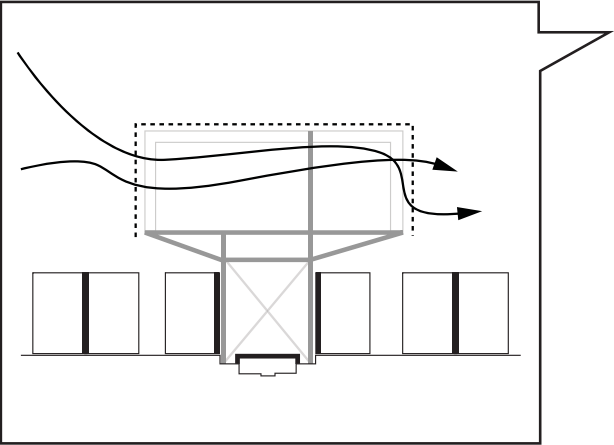
ATMOSPHERE - CLIMATE: SHADOW & WIND



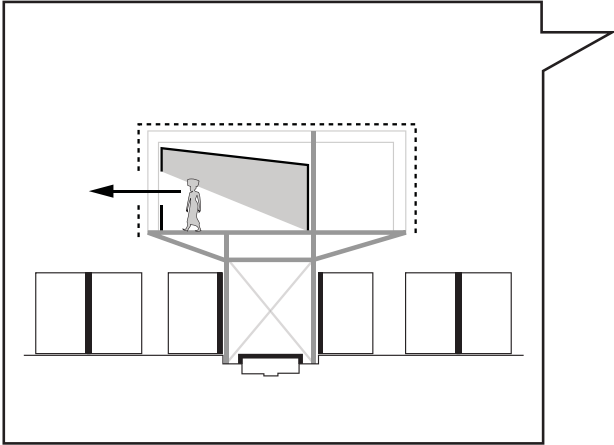
ENVIRONMENTAL ATMOSPHERE



SUNSHADING



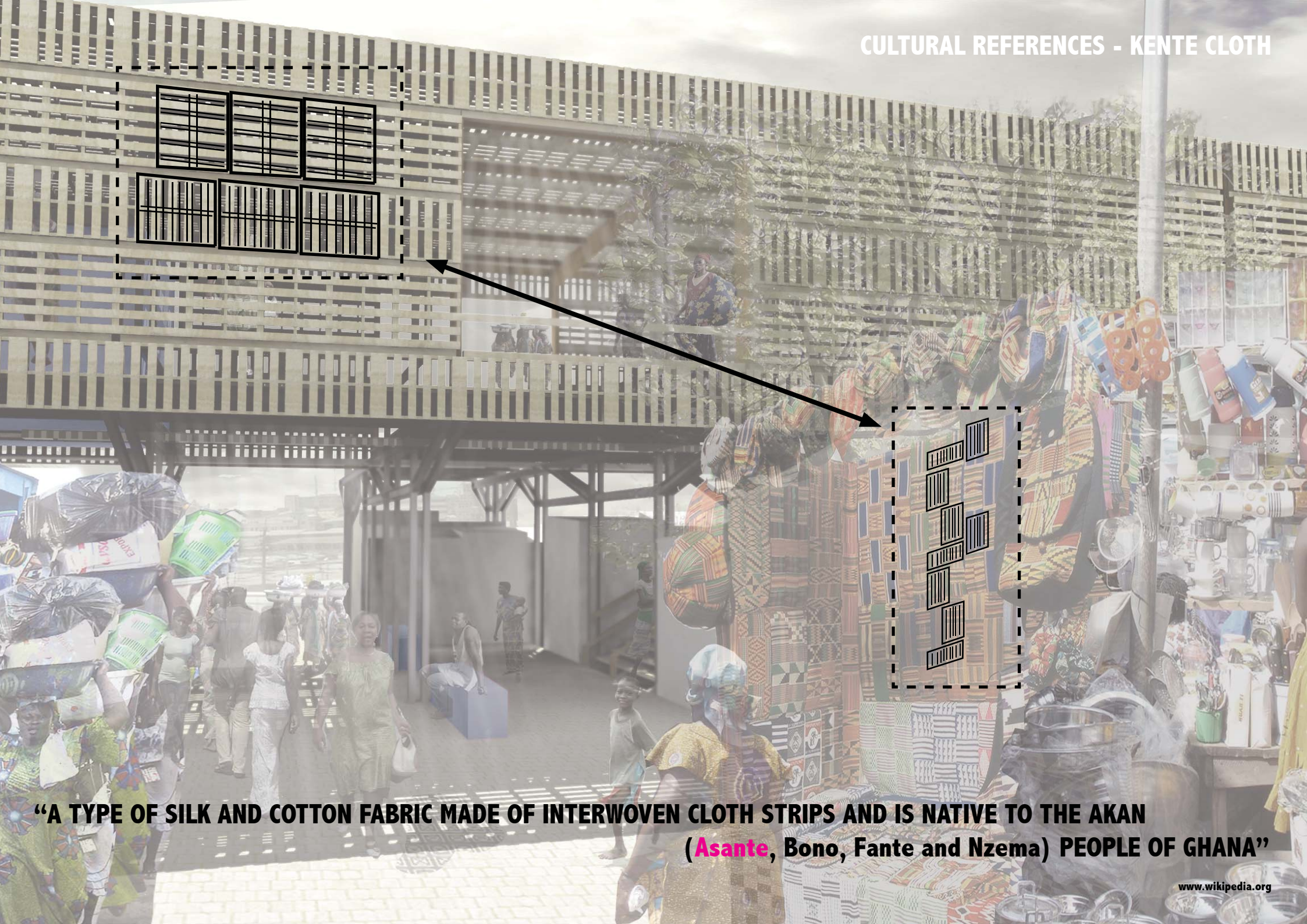
WIND FLOW



VIEW

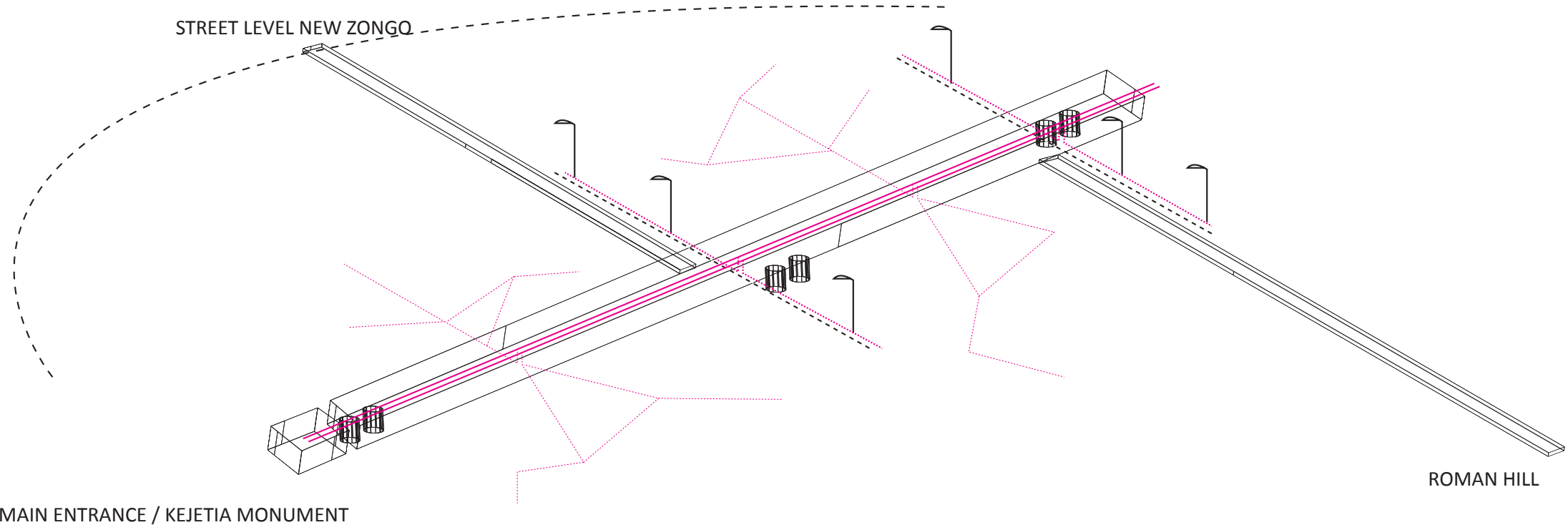
CULTURAL REFERENCES - KENTE CLOTH



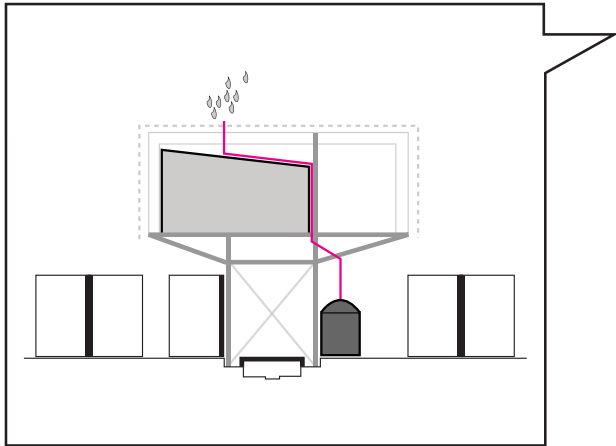


“A TYPE OF SILK AND COTTON FABRIC MADE OF INTERWOVEN CLOTH STRIPS AND IS NATIVE TO THE AKAN (Asante, Bono, Fante and Nzema) PEOPLE OF GHANA”

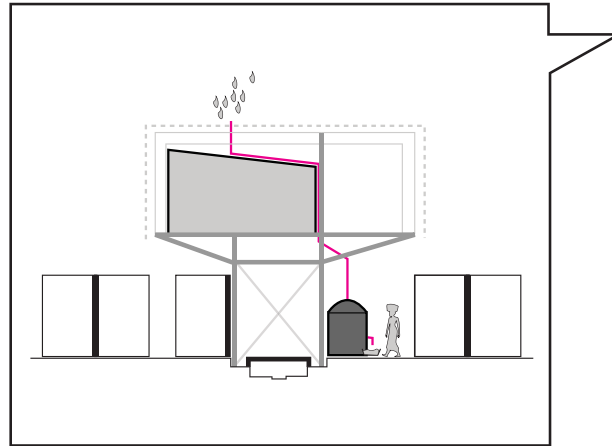
BUILDING SERVICES



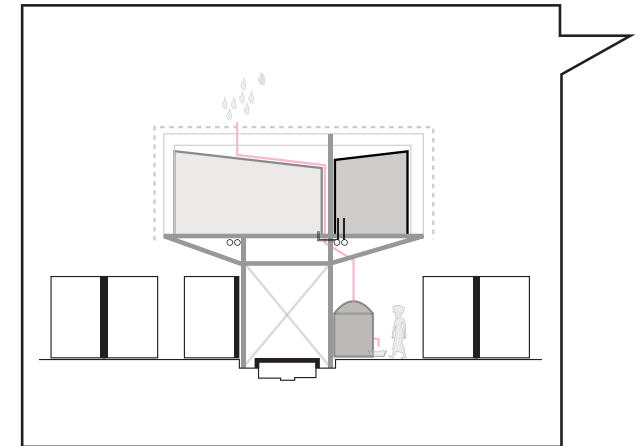
BUILDING SERVICES



WATER STORAGE

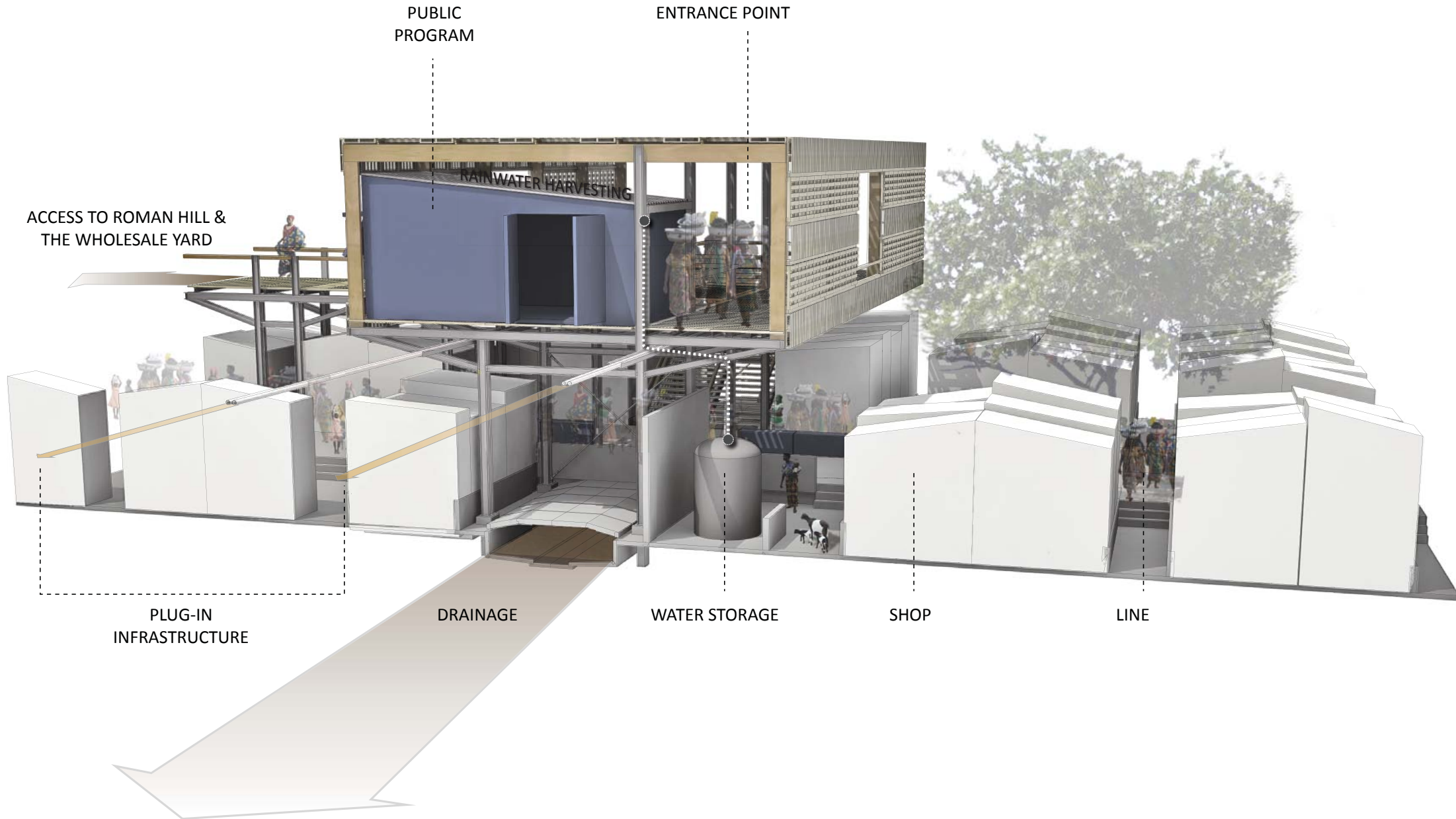


ACCESS WATER
STORAGE

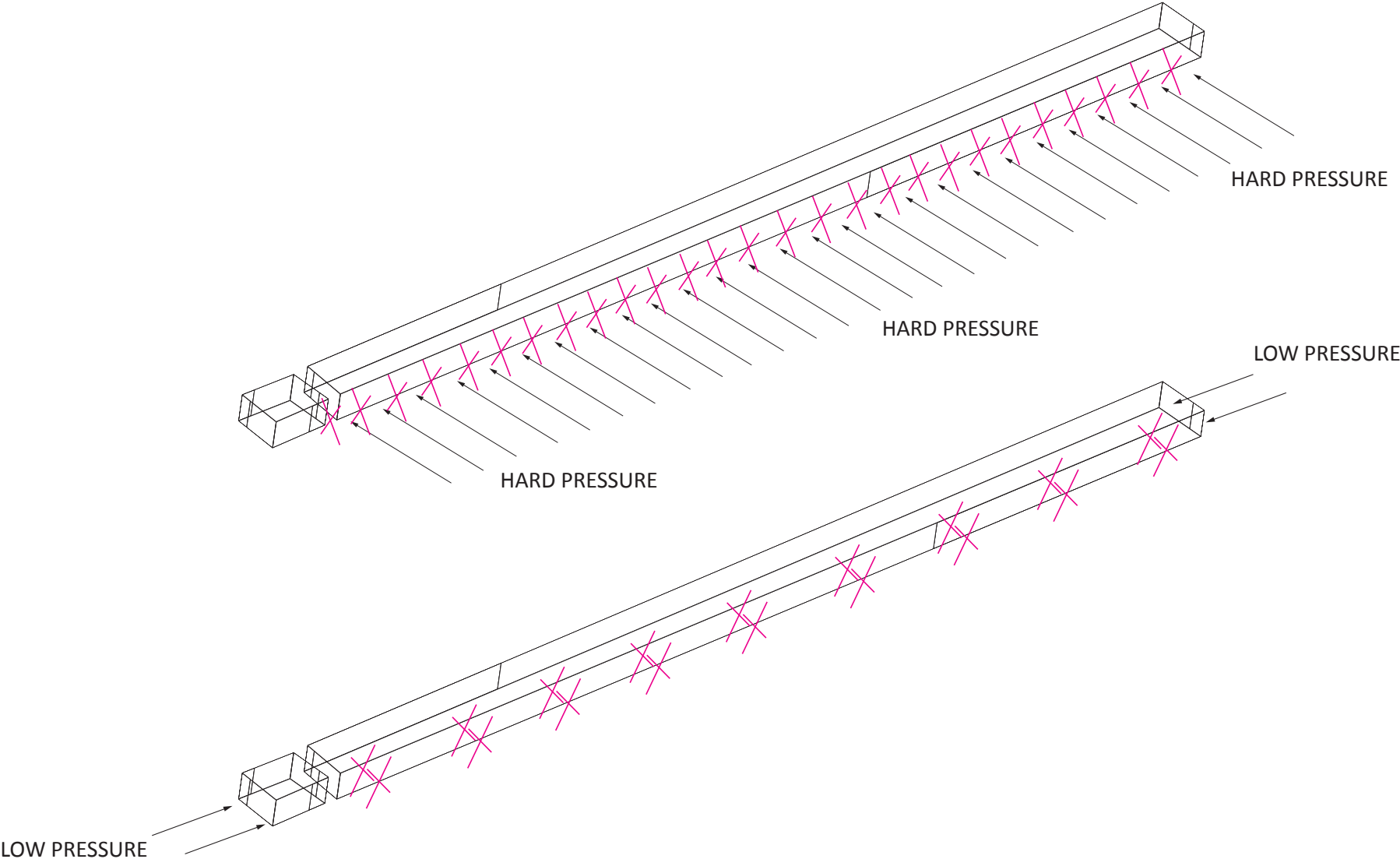


INSTALLATION

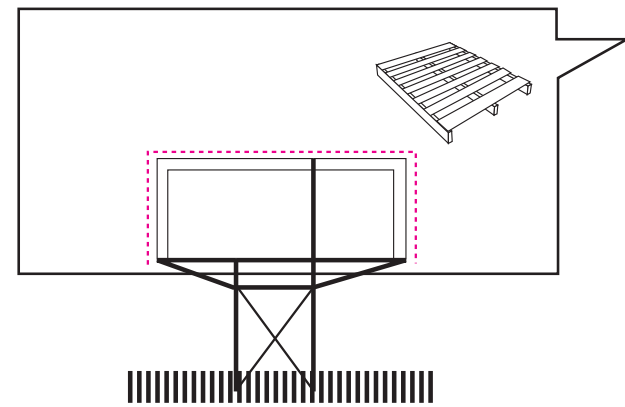
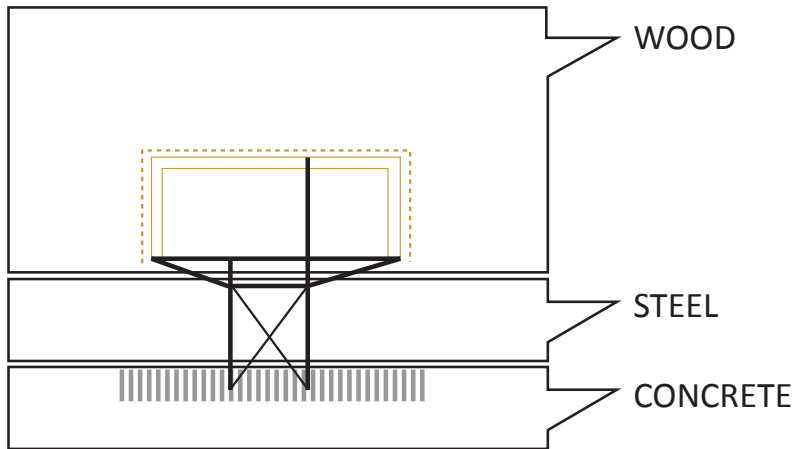
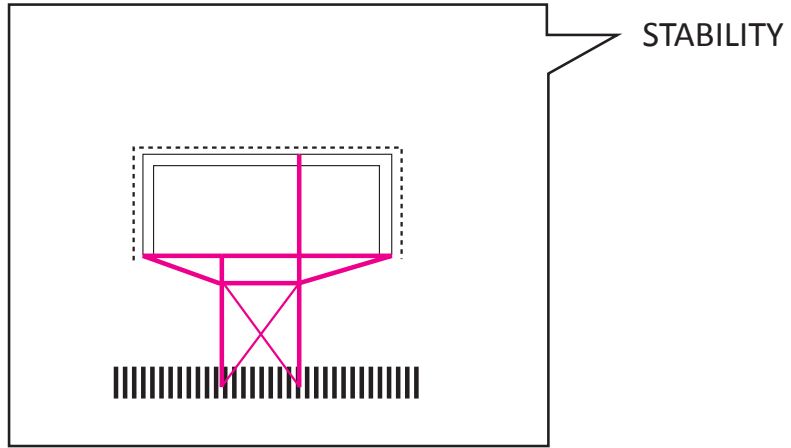
BUILDING SERVICES



BUILDING TECHNOLOGY



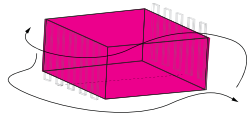
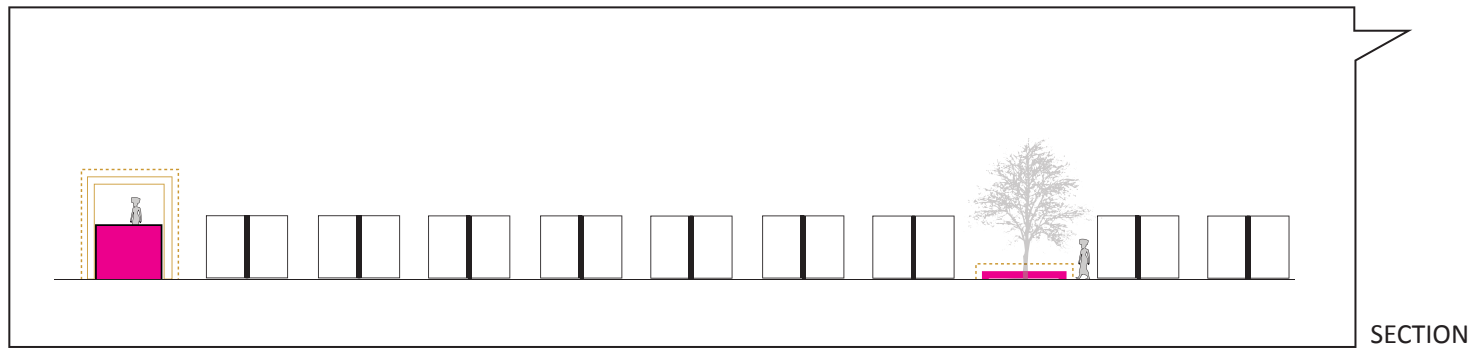
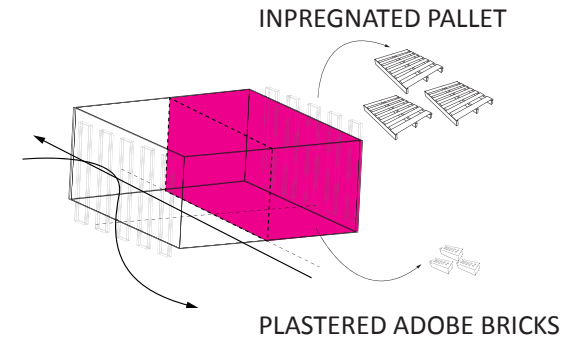
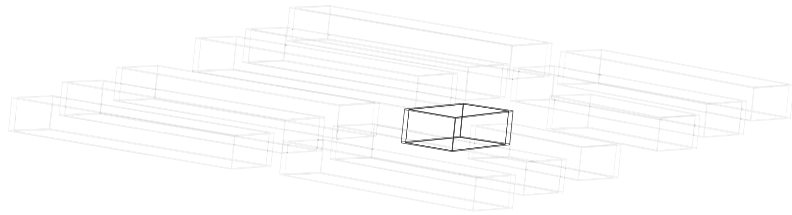
BUILDING TECHNOLOGY



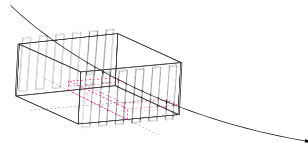
INPREGNATED PALLET:

MODULAR
EASY TO REPLACE
ABSTRACT KENTE PATTERN

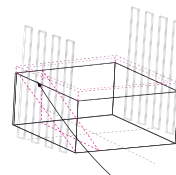
THE GRID - CUBES



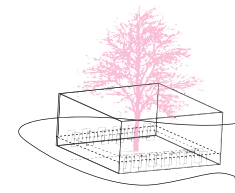
SANITATION / WATER STORAGE



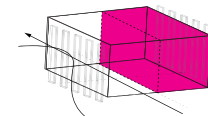
TRO-TRO



RESTPLACE



SHADOW

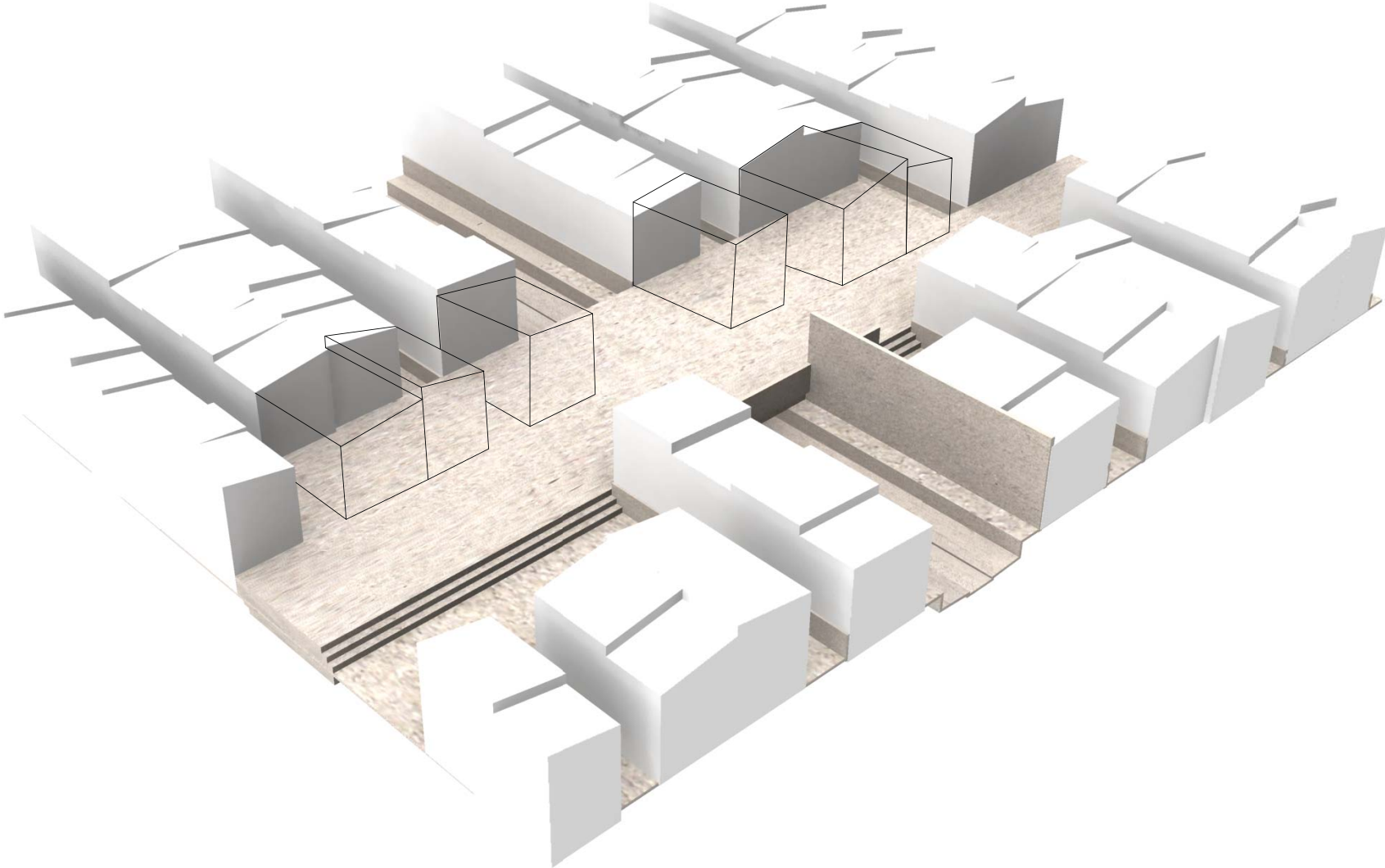


OFFICE

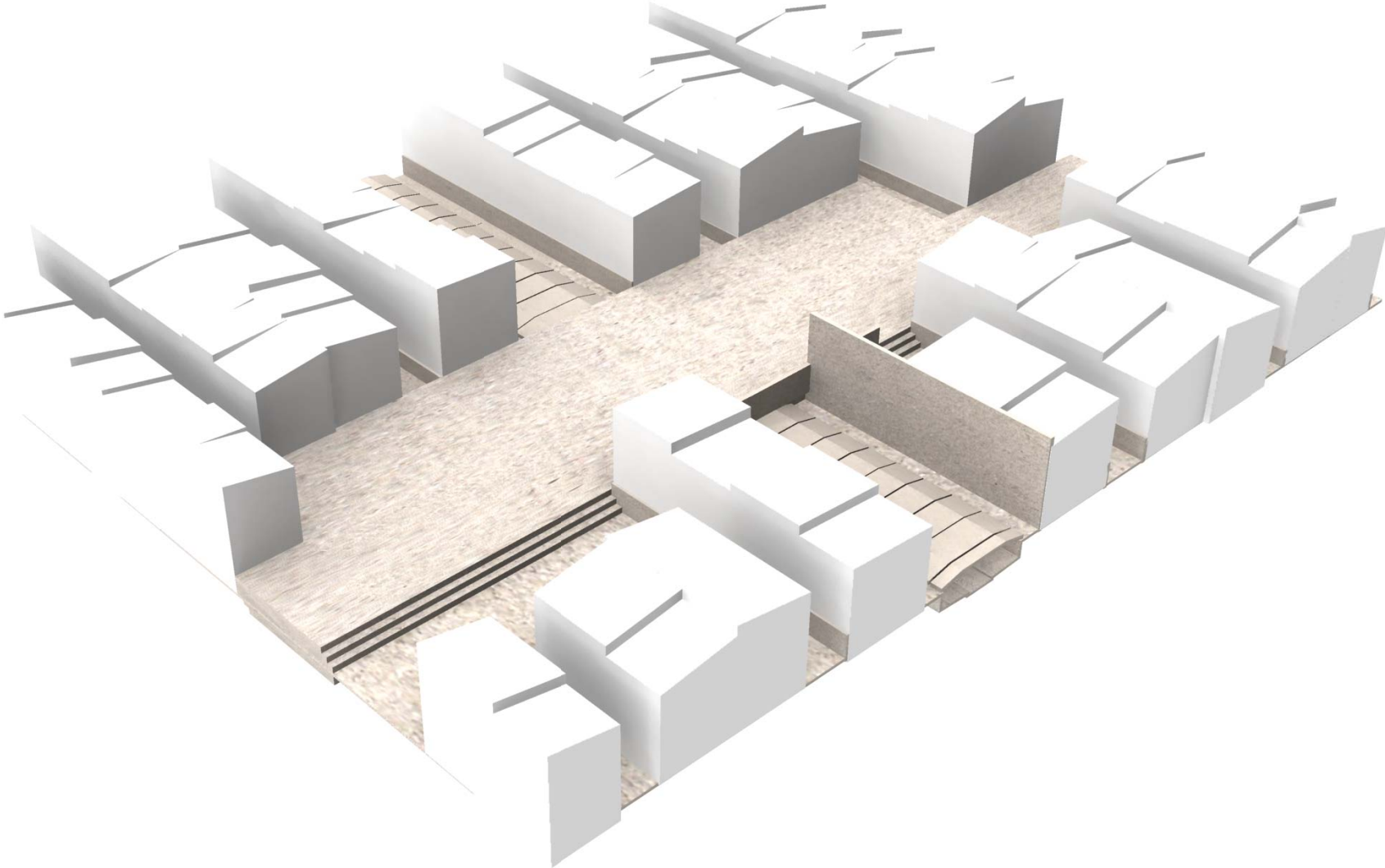
THE GRID - CUBES



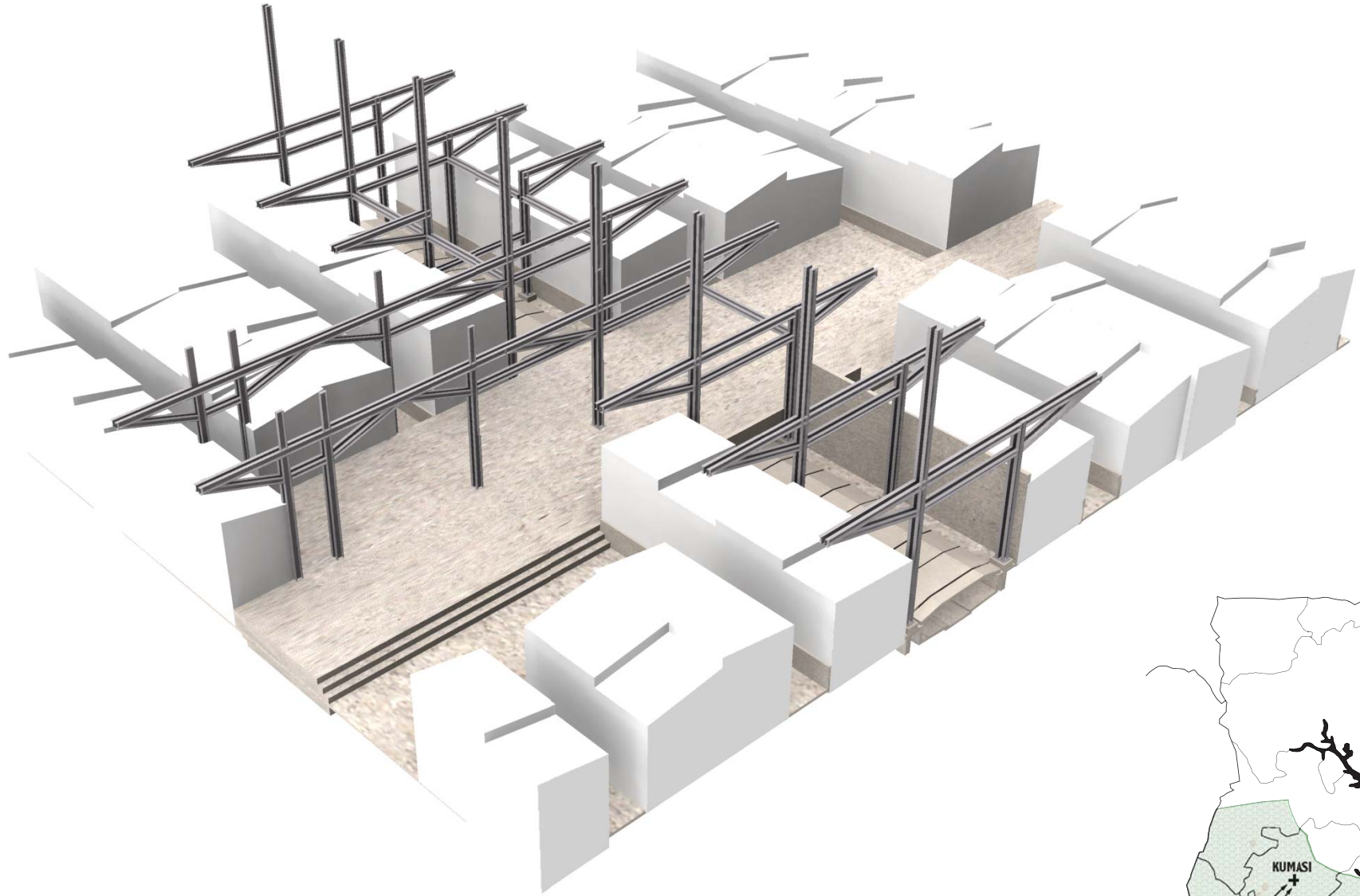
DEMOLISHING A FEW MARKET STALLS



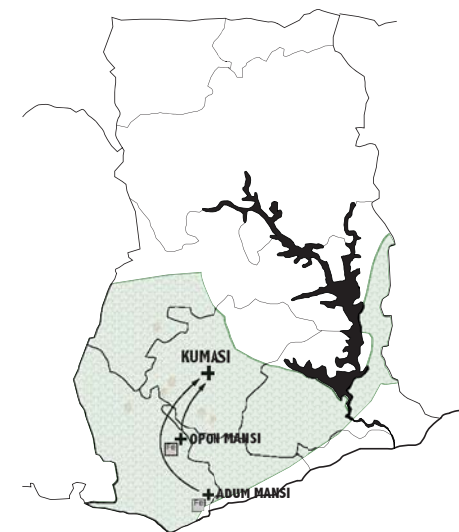
COVERING THE DRAINAGE



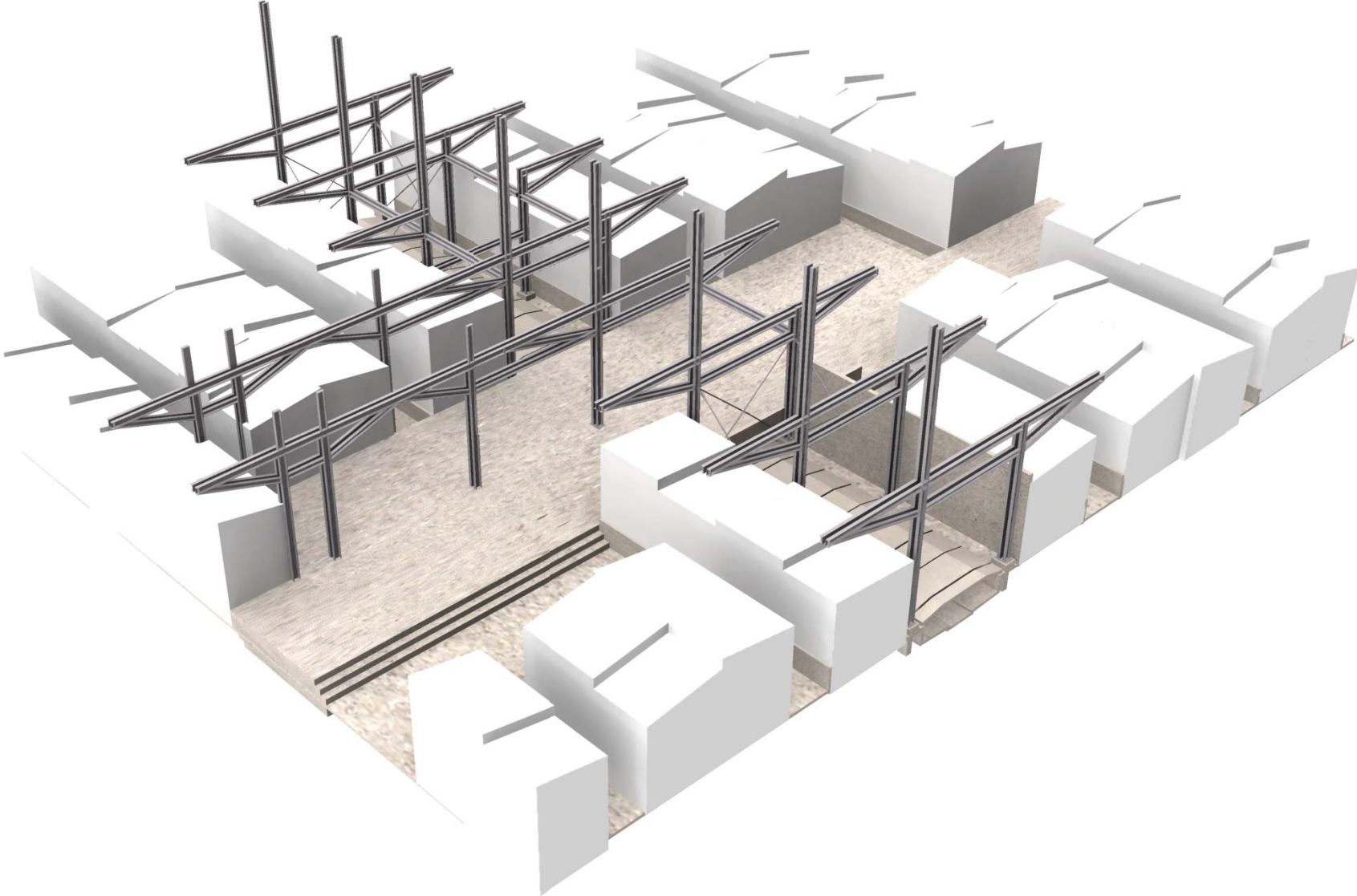
PLACING THE MAIN STEEL STRUCTURE with a 4M GRID



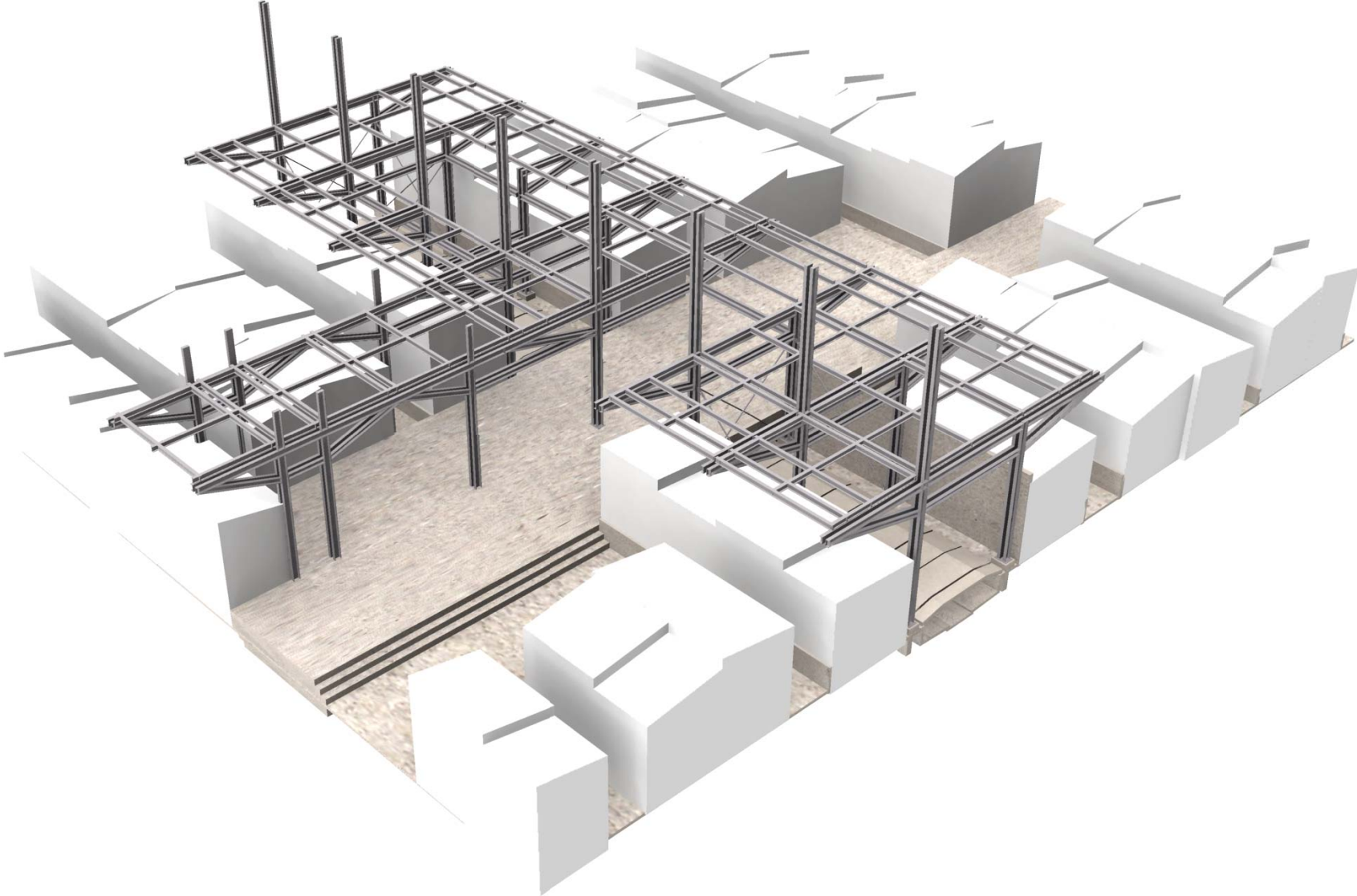
IRON MINERALS ARE AVAILABLE IN GHANA, 4 MAIN DEPOSITS



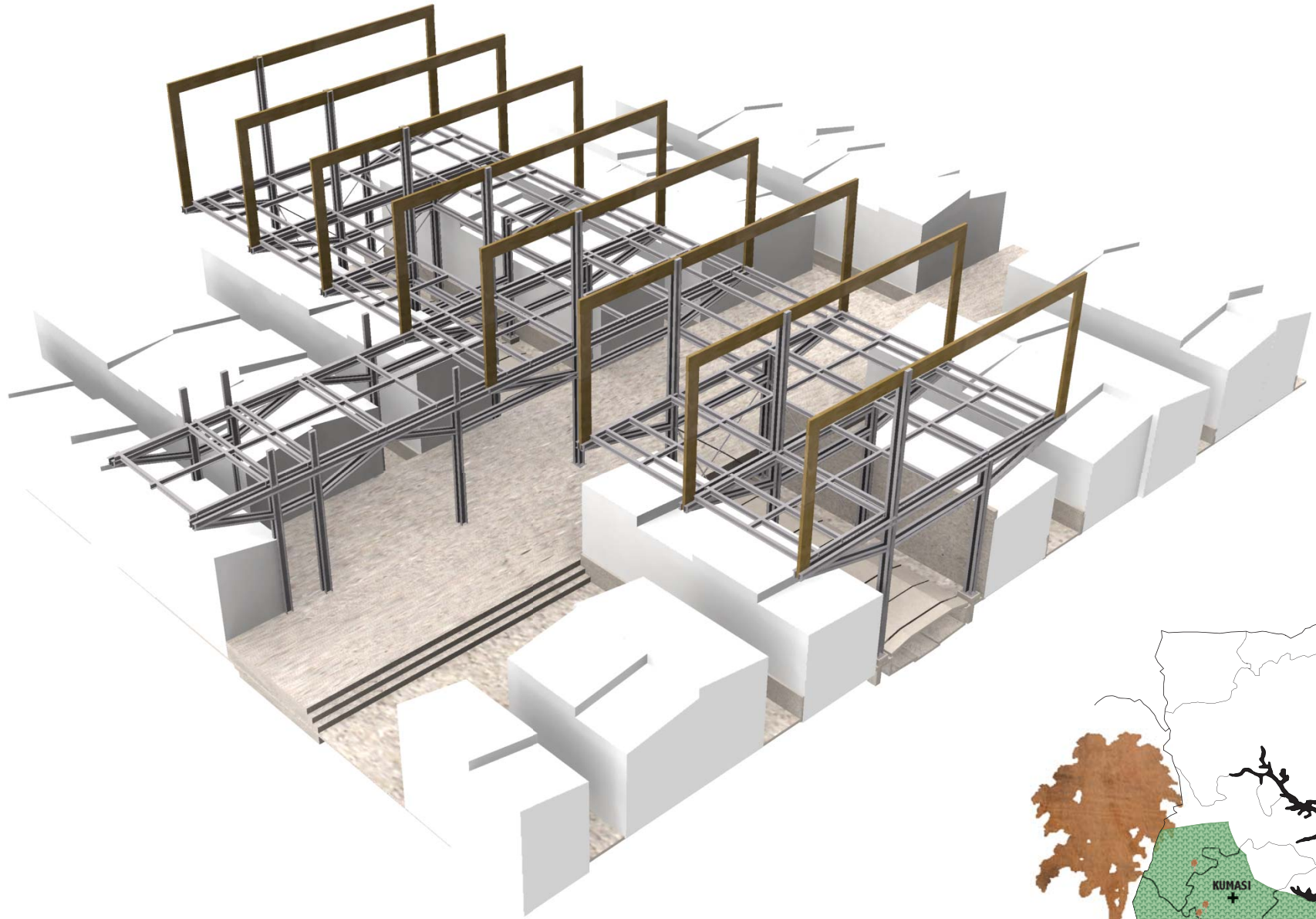
PLACING THE BRACES



PLACING THE STEEL SUBSTRUCTURE



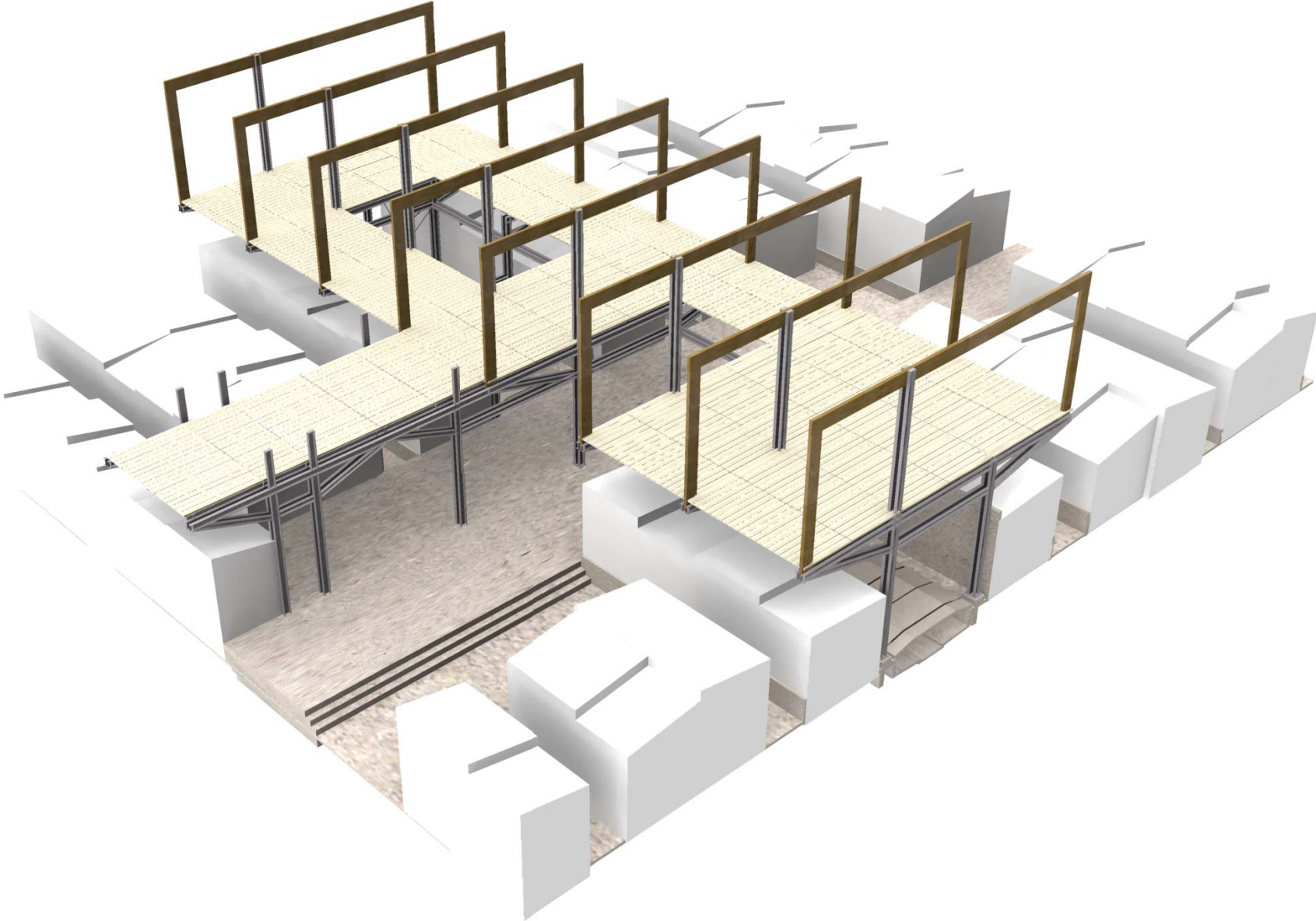
PLACING THE AZOBE / KAKU (RED IRONWOOD) TRUSSES



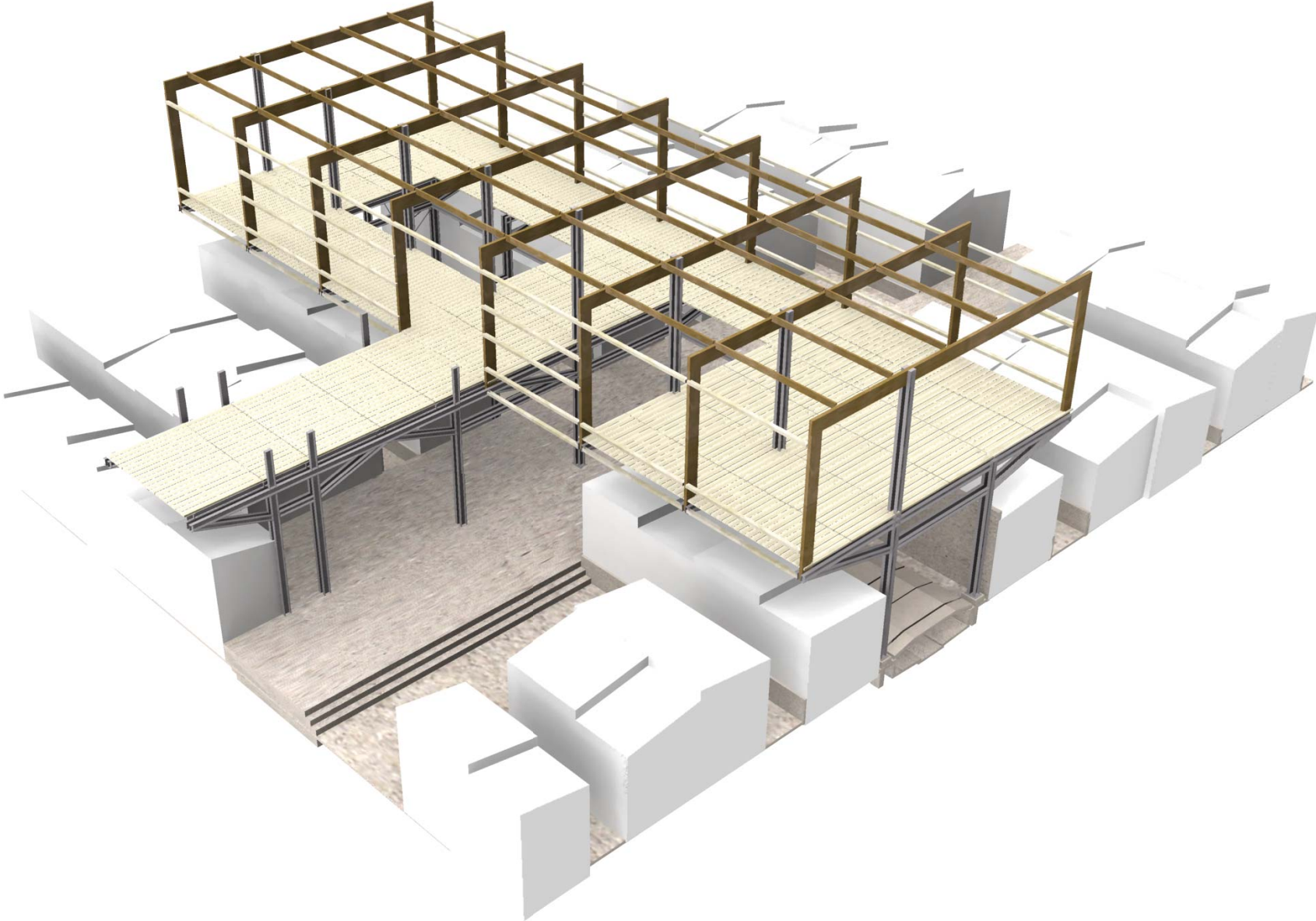
EXTREMELY HARD, MAXIMUM LENGTH 50 M and SUSTAINABLE IN WATER CONDITIONS



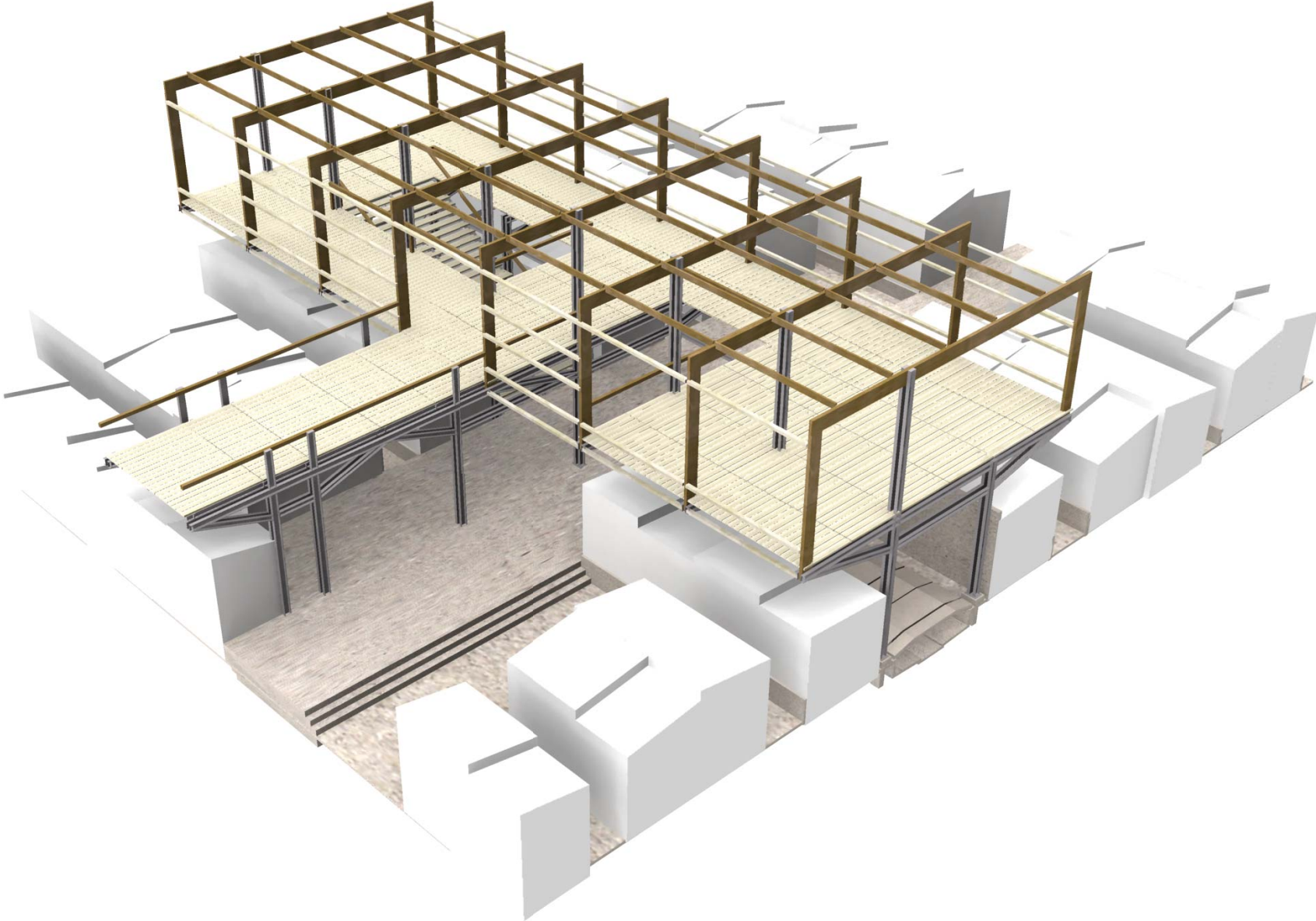
FLOORING



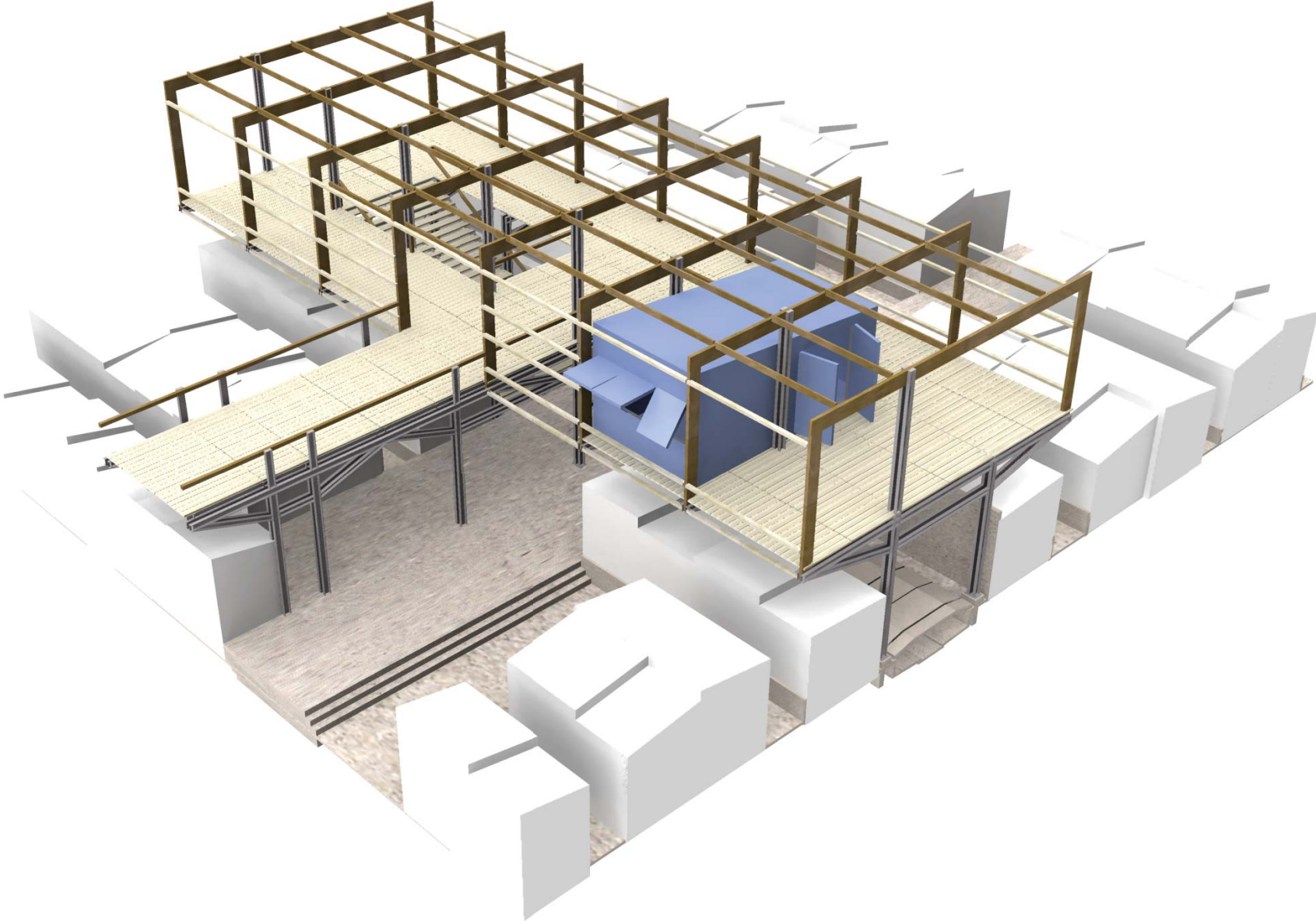
PLACING THE BEAMS



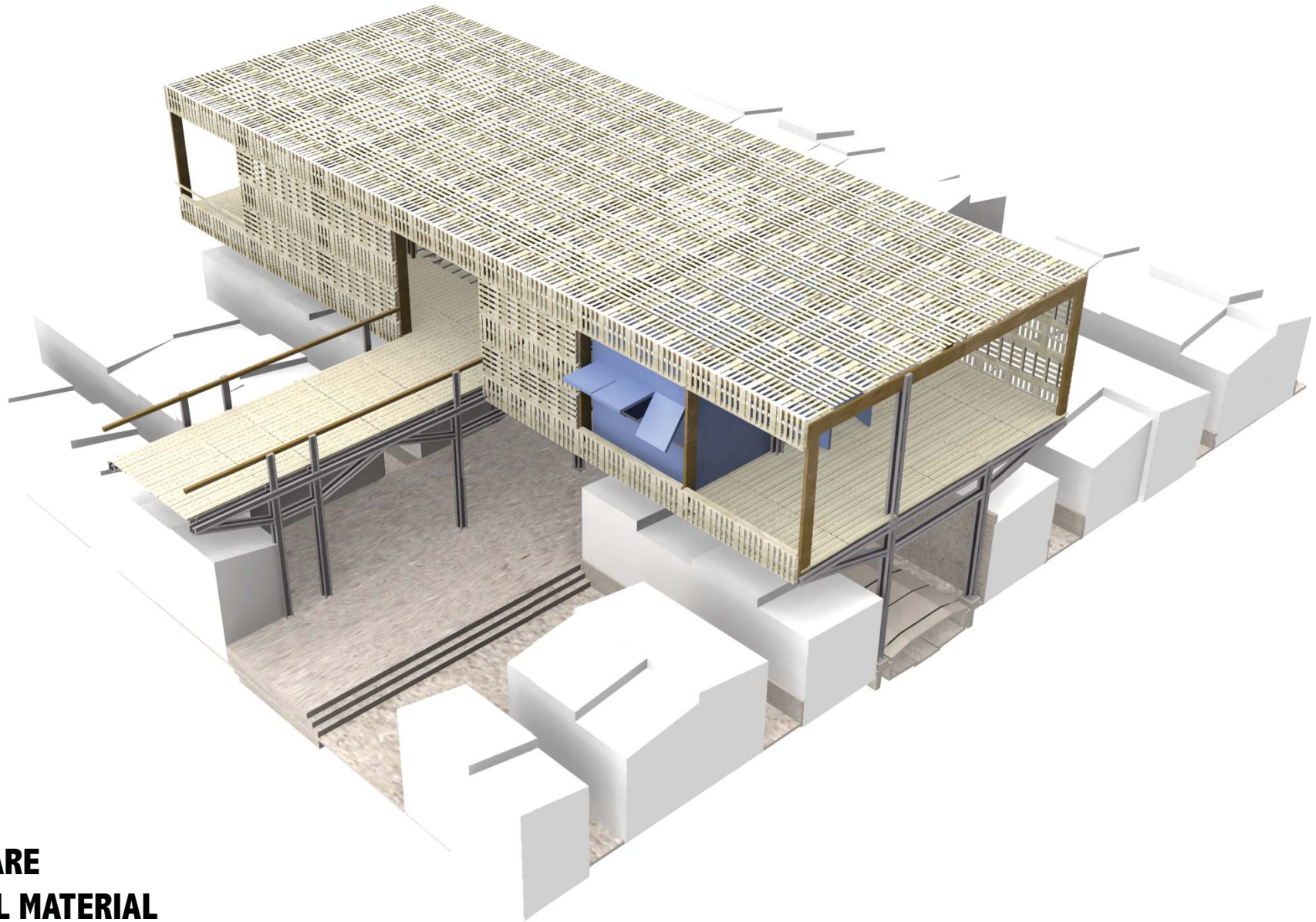
PLACING THE STAIRS AND HANDRAILS



PLACING THE VOLUMES



PLACING THE LIGHT TYPOLOGY PALLETS



EASY TO PREPARE

INTERNATIONAL MATERIAL

LIFETIME WITH INTENSIVE USE AROUND THE 3 YEARS

POSSIBLE IN SOFT AND HARDWOOD (DEPANDS ON THE AVAILABILITY OF WOOD)

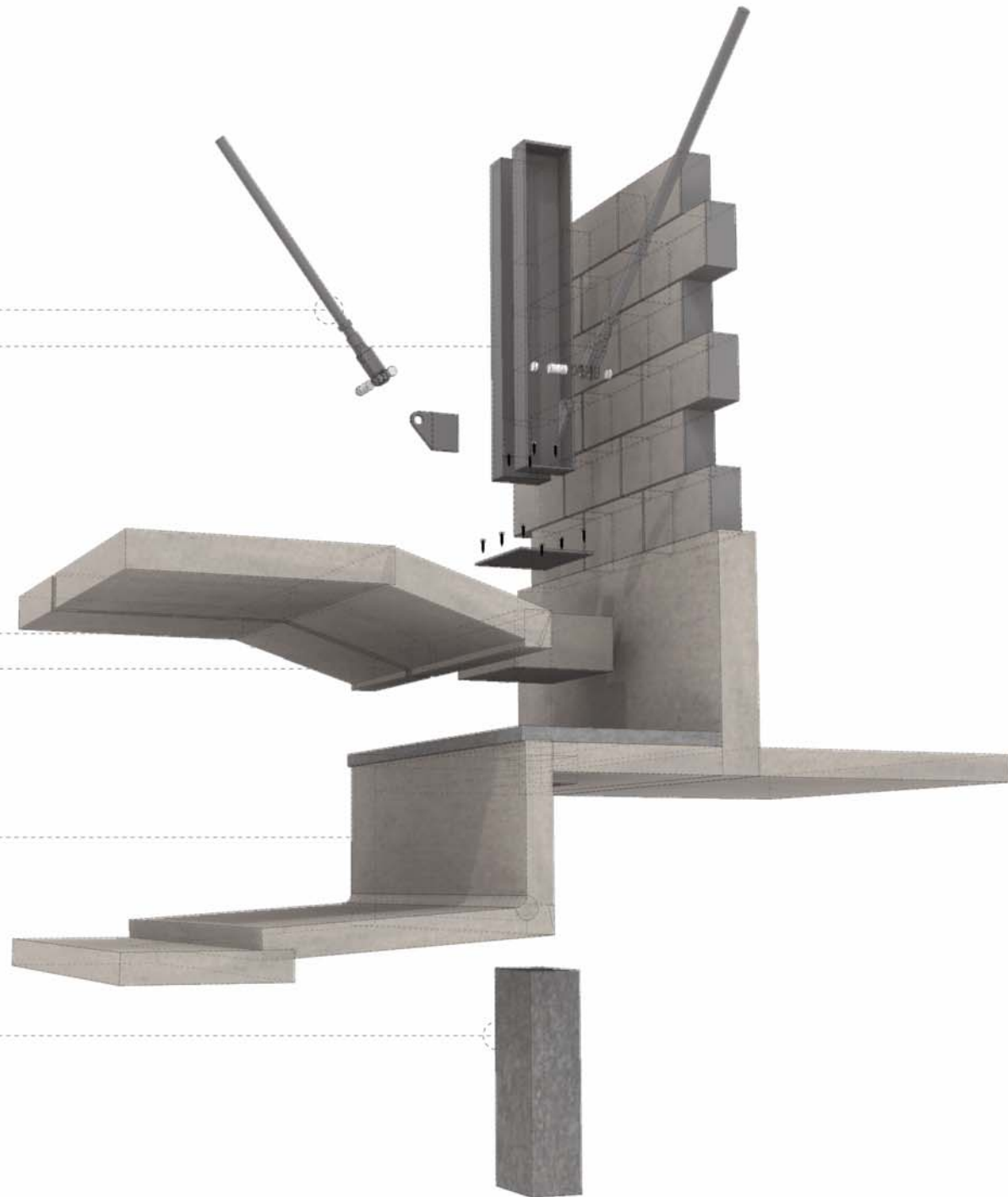
THE SITUATION IN THE OPEN DRAIN

- Buttress steel
- (Existing) Cement block 460mm x 130mm x 230mm

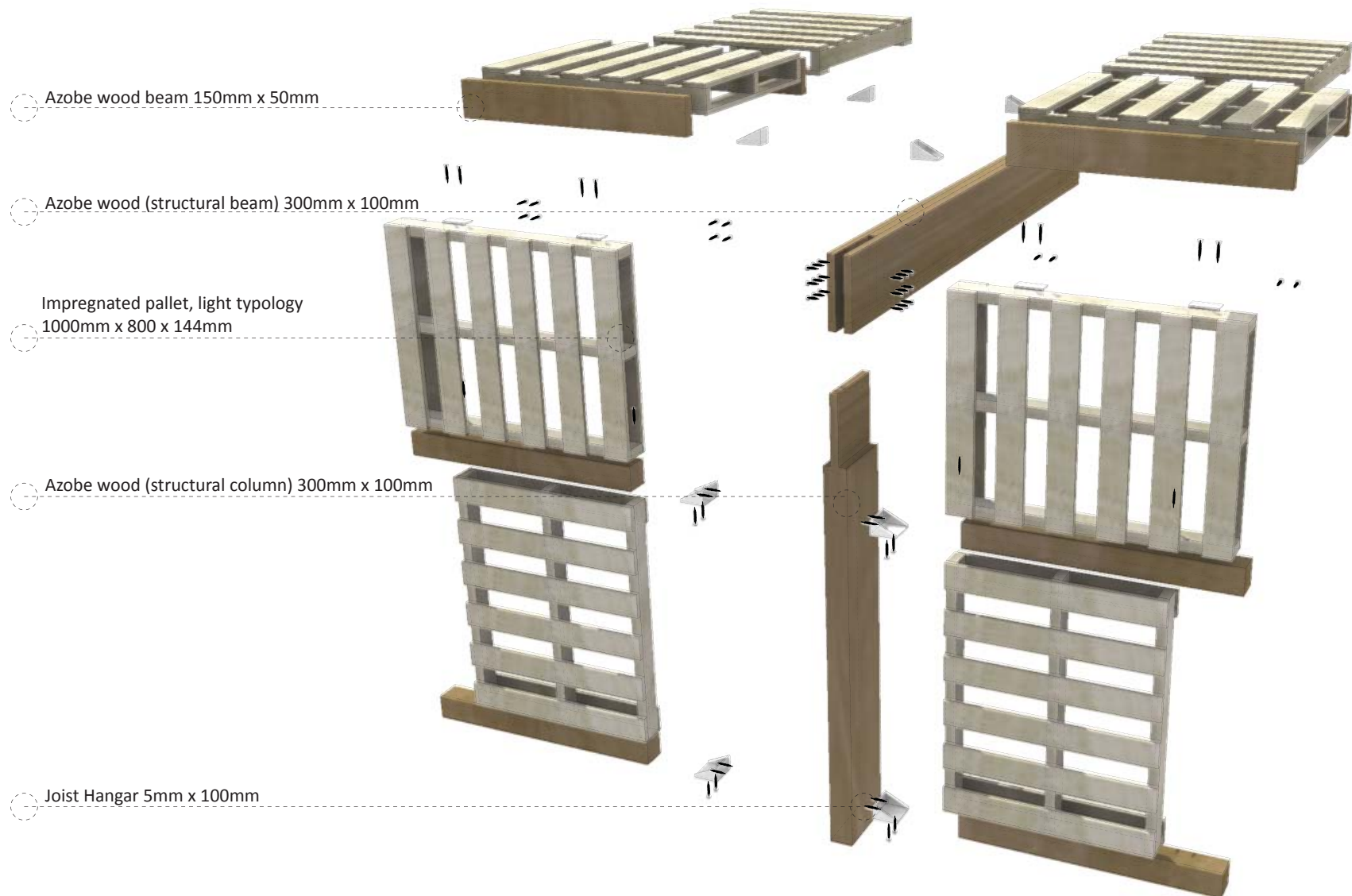
- Concrete cover 100mm
- Concrete base 500mm x 400mm

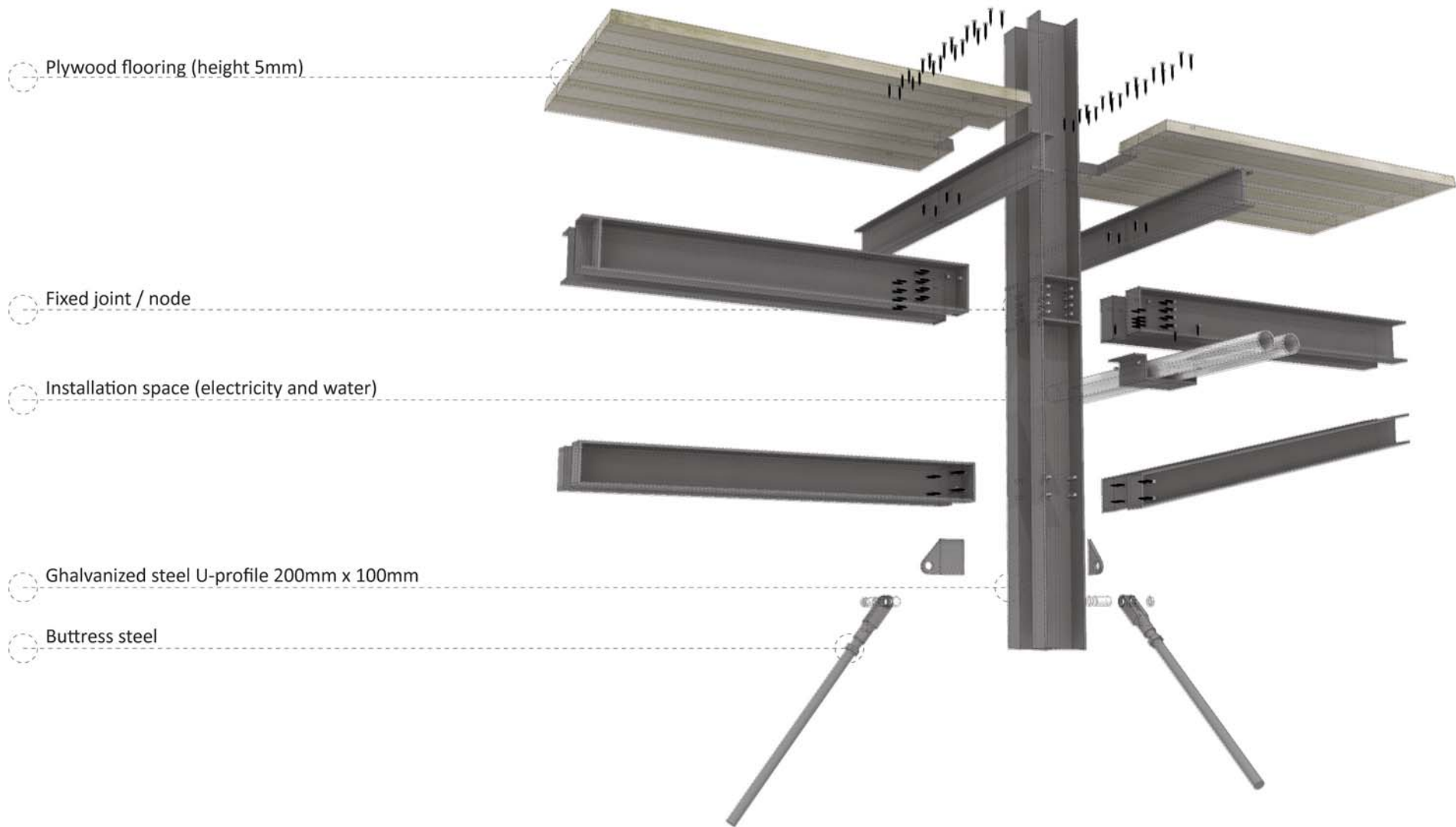
- (Existing) Open drain (concrete)

- Concrete foundation pile 300mm x 200mm



CONSTRUCTION - PALLETS





Plywood flooring (height 5mm)

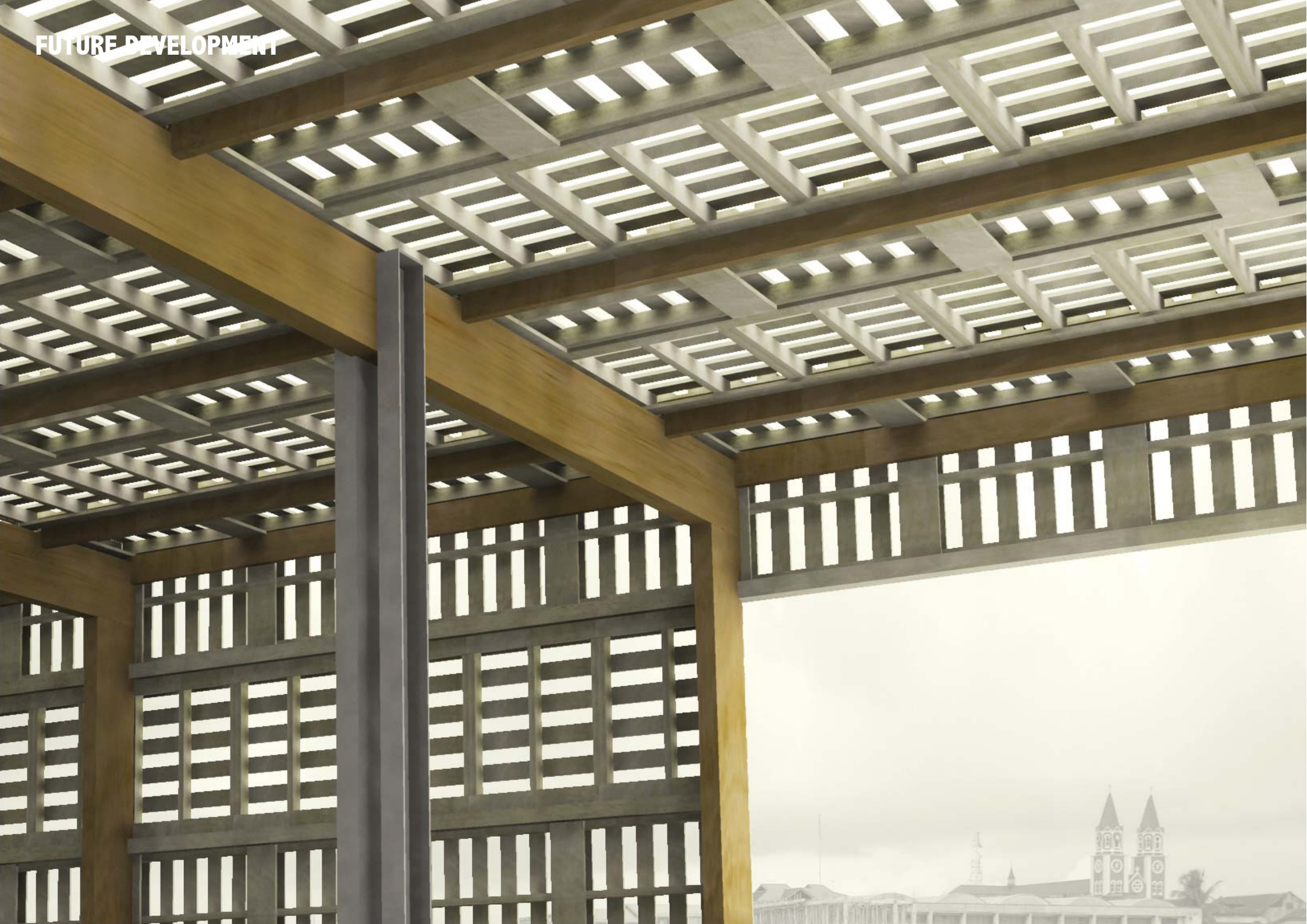
Fixed joint / node

Installation space (electricity and water)

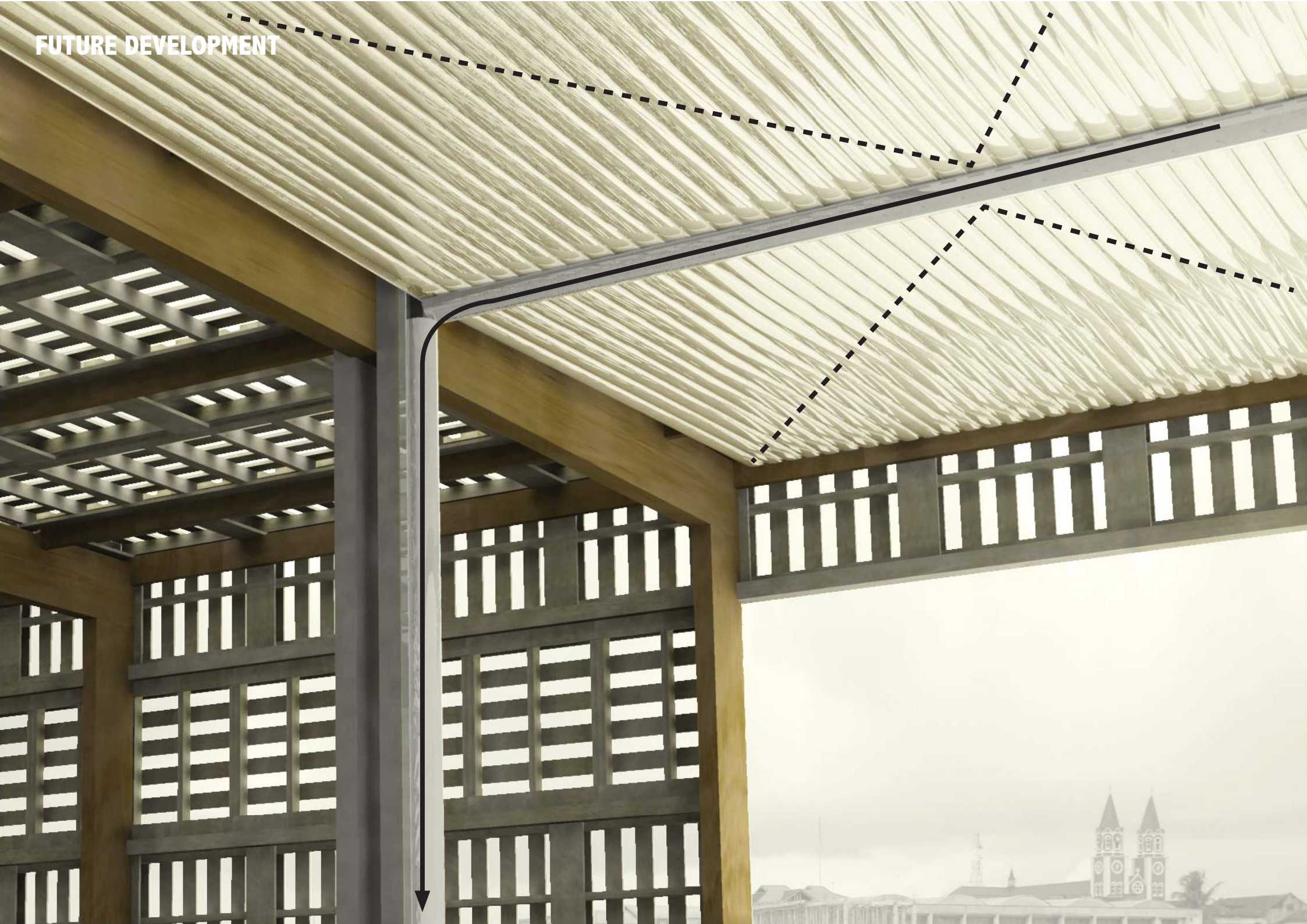
Ghalvanized steel U-profile 200mm x 100mm

Buttress steel

FUTURE DEVELOPMENT



FUTURE DEVELOPMENT



FUTURE DEVELOPMENT

PHOTO: JONAS



4.

REFLECTION.

STRENGTH -

INTERCULTURAL EXCHANGE - Confluence of Western and African design culture

URBAN ACUPUNCTURE - Respect to the existing patterns, networks and systems

PUBLIC AMENITIES - Meet some of the needs and demands of the locals

ARCHITECTURAL AESTHETIC - Organizational, Kente structure, Autonomous but Integrated and Modular

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CONSIDERATIONS -

HOW SHOULD WE DEAL WITH ADAPTATION AND MODIFICATION IN ARCHITECTURAL DESIGN?

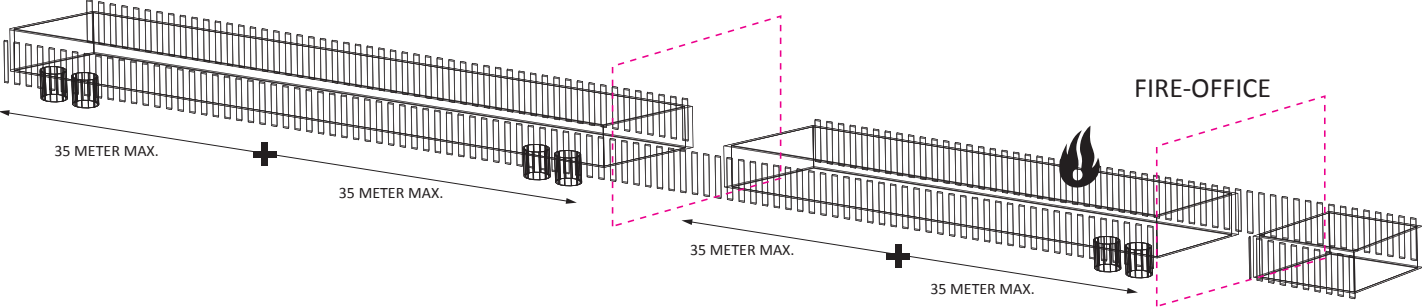
HOW SHOULD WE TAKE POSITION AS 'WESTERN' ARCHITECTS IN AFRICAN COUNTRIES?

SHOULD WE USE ARCHITECTURE TO SOLVE AFRICAN 'PROBLEMS'?

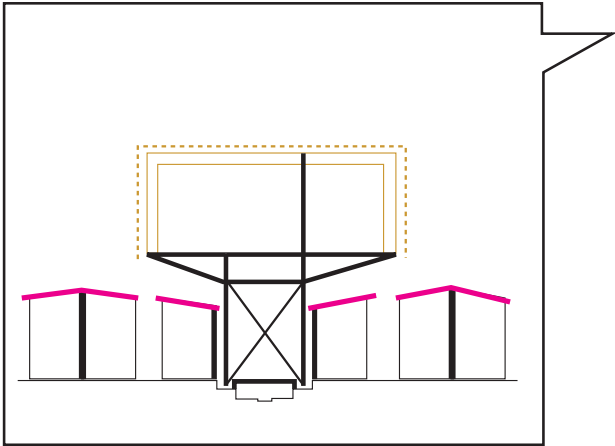
MEDA WO ASE!
QUESTIONS?



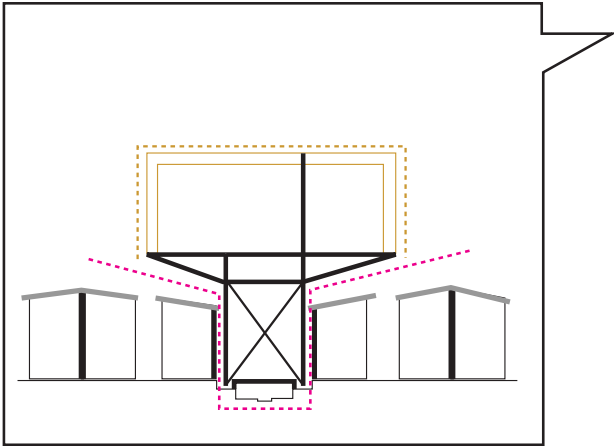
CONSTRUCTION IN RELATION WITH FIRE



CONSTRUCTION IN RELATION WITH FIRE



STEEL CORRUGATED SHEET



CONCRETE DRAIN

Galvanized steel U-profile 200mm x 100mm

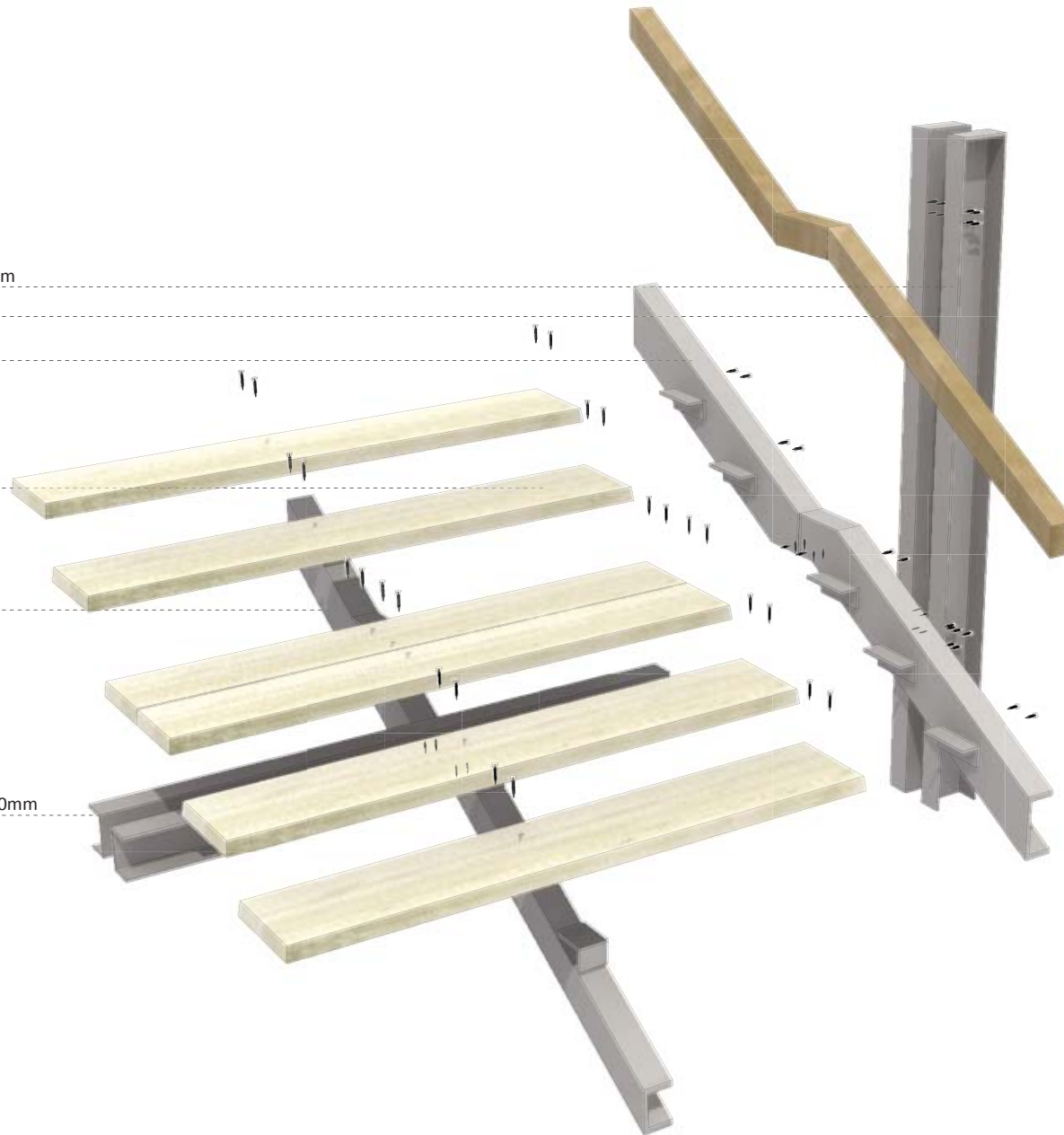
Azobe wood handrail 100mm x 100mm

Galvanized steel stair frame

Azobe Plywood stair step (height 5mm)

Galvanized Steel supporting beam

2x Galvanized steel U-profile 200mm x 100mm



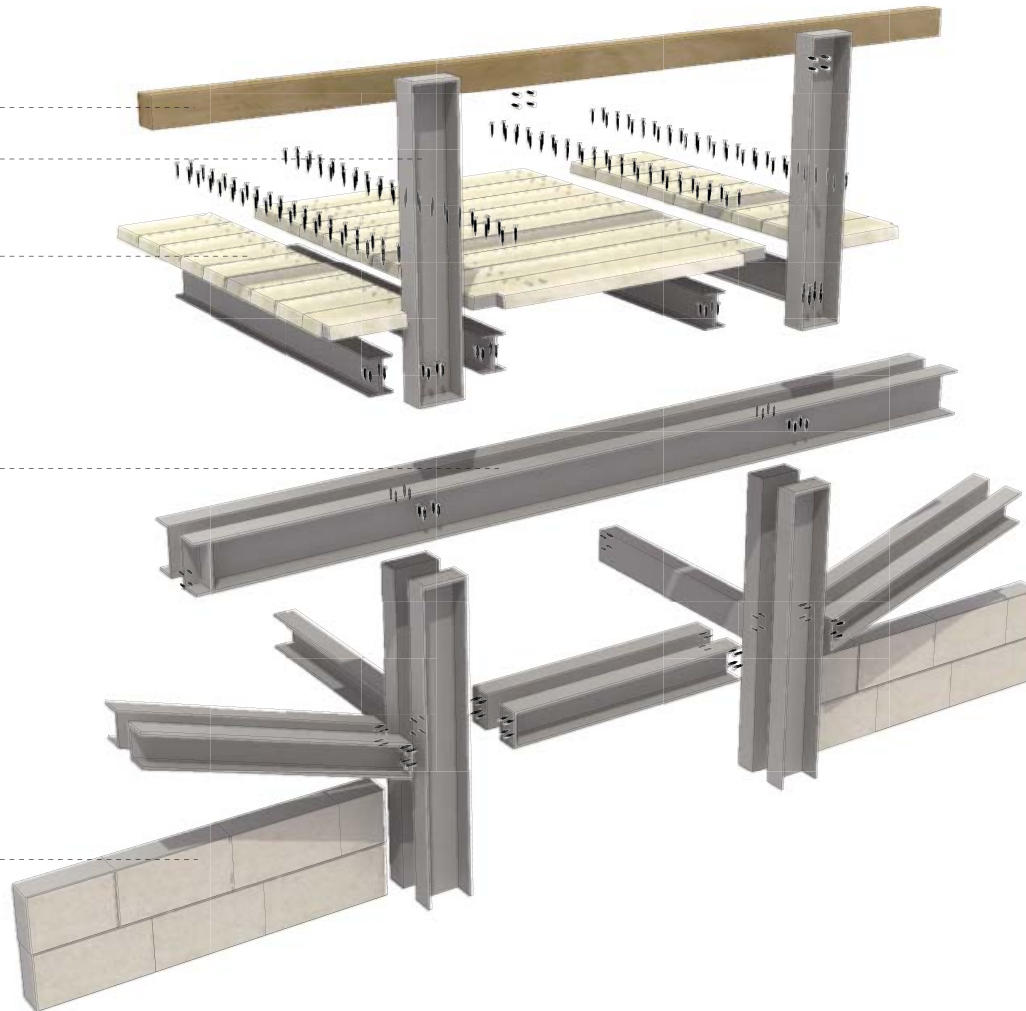
○ Azobe wood handrail 100mm x 100mm

○ Galvanized steel railing frame 200mm x 100mm

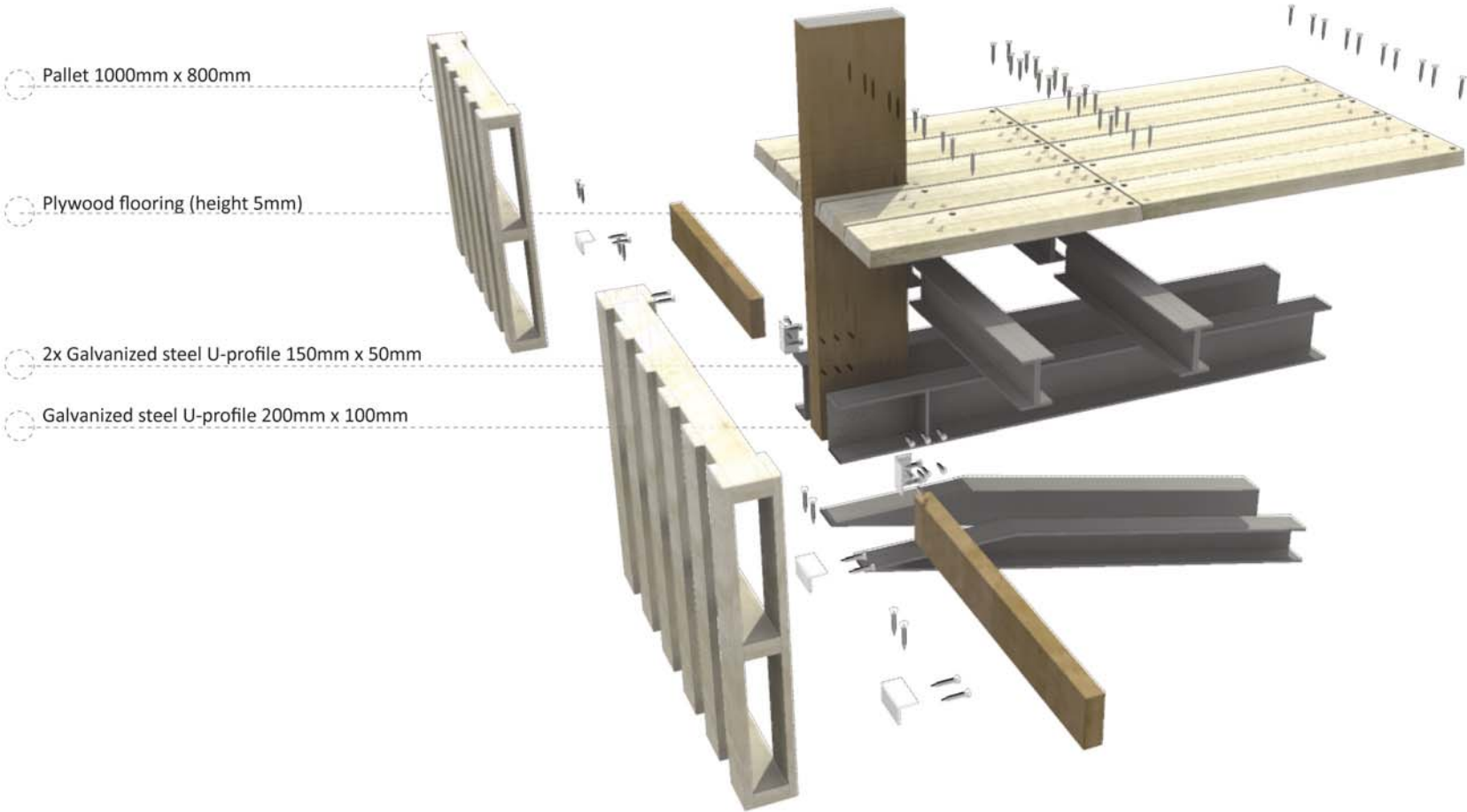
○ Azobe Plywood flooring (height 5mm)

○ 2x Galvanized steel U-profile 200mm x 100mm

○ (New) Cement block 460mm x 130mm x 230mm

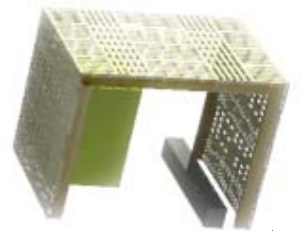
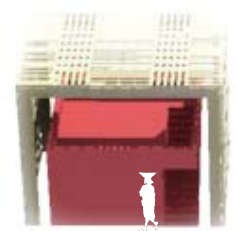


CONSTRUCTION - STEEL AND WOOD



**ENVIRONMENTAL
OFFICE.**

SANITATION



**SUPERVISOR
OFFICE.**

**KAYAYOO
RESTPLACE.**

RESTPLACE.

**TRO-TRO
WAITING SPACE.**

CONSTRUCTION - AZOBÉ WOOD

AZOBÉ WOOD = RED IRONWOOD or IN GHANA **KAKU**

EXTREMELY HARD, and used for railroad ties and **BRIDGE PLANKING**

It's natural habitat is **SUBTROPICAL OR TROPICAL MOIST LOWLAND FOREST**

maximum length of a tree is up to **50 METER**

Also **SUSTAINABLE** in **WATER CONDITIONS**

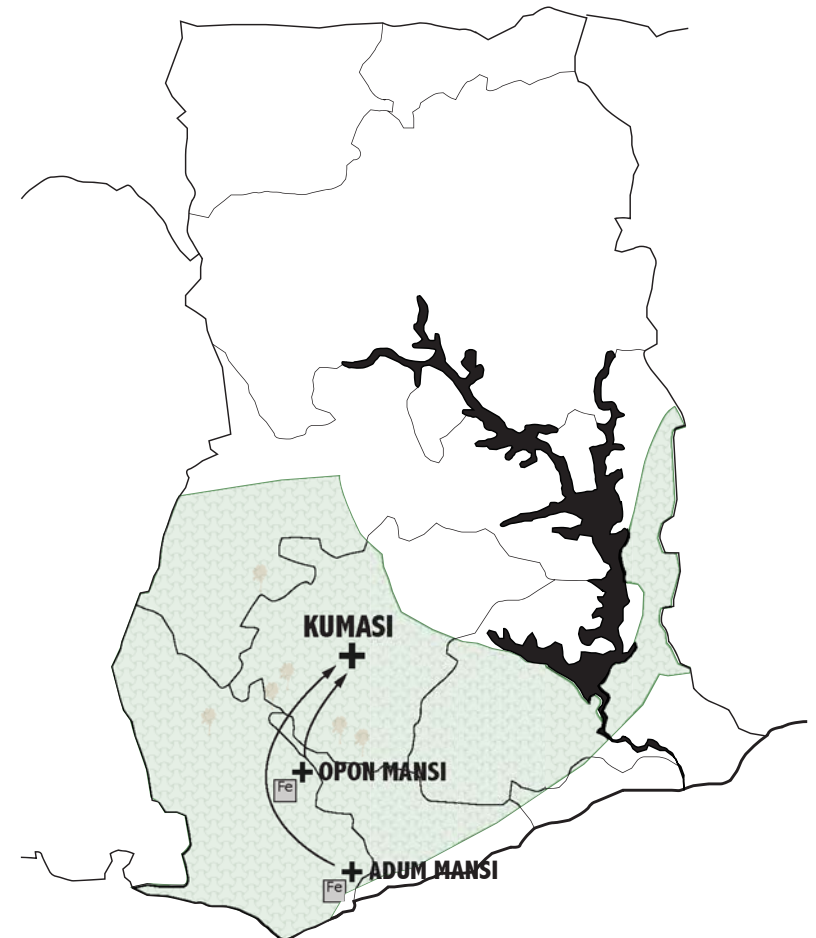


CONSTRUCTION - IRON

Minerals presented in Ghana are: gold, **BAUXITE**, manganese and **IRON**

4 main **DEPOSIT** in Ghana: **OPON MANSI**, Shieni, Pudo and Adum Bansa

Located on 15 **HILLS** over 24 km **STRIKE**



EXPERIENCE - ADAPTATION OF SPACE

ADAPTATION IS AN EVOLUTIONARY PROCESS WHEREBY A SPACE BECOMES BETTER SUITED TO THE NEEDS OF THE USERS