RAMLET AL-BAIDA
FERRY TERMINAL

Complex Projects
P5
Koen Meijman
24 June 2022
INTRODUCTION
(IM)MOBILITY
DESIGN BRIEF
CONCEPT
FERRY TERMINAL
PASSENGERS
CONCLUSION
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(IM)MOBILITY
DESIGN BRIEF
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INTRODUCTION LEBANON
INTRODUCTION LEBANON

6.8 million inhabitants
INTRODUCTION

BEIRUT

2.2 million inhabitants
Lebanese spend 16% (2,2 hours) of their productive time on the road on average.
Lebanon Among Top 25 Countries with Highest Car Ownership
Traffic congestion adds to Lebanon’s many woes

Sunday 04/12/2016
Congestion costs Lebanon approximately 8% ($3,000,000,000) of its GDP
Lebanon is running out of gas — literally
Fueling car in Lebanon now more than salary
Moving in Lebanon is a luxury, only public transport is the solution
INTRODUCTION

PUBLIC TRANSPORT?
PEDESTRIAN FERRY SERVICE
INTRODUCTION
INTRODUCTION
Beirut Mosaic
Enhance mosaic character
Create pedestrian friendly connections
Develop two key public spaces
Add affordable housing & education
How to create a **public ferry terminal**, that addresses site specific challenges, in a congested coastal city as Beirut?
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30 × more vehicles!
9 out of 10 Lebanese own a car!
1970

8 passengers
1970

8 passengers

SPACE NEEDED
1970
8 passengers

NOW
8 passengers

SPACE NEEDED
Comparison of CO₂ emissions and space per occupant:

- **CO₂ Emissions:**
  - **Average car (1 occupant):** 244 kg CO₂
  - **Tesla Model S (fossil fuel grid):** 9.7 kg CO₂
  - **Average car (2 occupants):** 12.3 kg CO₂
  - **Train:** 1.5 kg CO₂
  - **Tram:** 1.2 kg CO₂
  - **Bus:** 2.5 kg CO₂
  - **Tesla Model S (green grid):** 3.8 kg CO₂
  - **Bicycle:** 0.2 kg CO₂
  - **Walking:** 0.1 kg CO₂

- **Space per Occupant:**
  - **Average car (1 occupant):** 9.7 m²
  - **Average car (2 occupants):** 4.85 m²
  - **Train:** 1.2 m²
  - **Tram:** 1.2 m²
  - **Bus:** 1.2 m²
  - **Tesla Model S (green grid):** 1.2 m²
  - **Bicycle:** 0.1 m²
  - **Walking:** 0.1 m²

Source: Institute for Sensible Transport
Passengers per hour on 3.5m wide lanes in the city

- 1,000 average passengers / hour
- 1,000 potential passengers / hour

Source: Transformative Urban Mobility Initiative
Passengers per hour
on 3.5m wide lanes in the city

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Source: Transformative Urban Mobility Initiative
CHALLENGES

Congestion
Fuel dependance
Space consumption
Deaths and injuries
Pollution
Not inclusive
1. Immobility
2. Privatization of Public Space
‘Mobility is a key condition of access to employment, housing, education, culture and leisure and family.’

‘It is a precondition to other rights.’

Kate Ascher - The Works: Anatomy of a City
Public Transport → Public Space
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**WATER**
The infrastructure (water) is already there and needs no maintenance.

**FLEXIBILITY**
Existing marinas can be used and the network can easily be expanded.

**INDEPENDENCE**
The ferries operate independent from the congestion on land.

**WHY A PEDESTRIAN FERRY SERVICE?**
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Swimming Pools
Swimming Pools  Food  Nightclub
How to create a **public ferry terminal**, that addresses site specific challenges, in a congested coastal city as Beirut?
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TRANSPORT HUB
Proximity to Cola Intersection ensures that passengers can easily travel further.

DISTANCE
Because the terminal is located in between two other terminals, the ferry service is accessible from a bigger area.

PRESERVE BEACH
The location preserves the open vast character of the beach.
TRANSPORT HUB
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PRESERVE BEACH
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46% mobility

+ 54% leisure
MOBILITY

- Mobility: 46%
- Leisure: 54%

Parking: 8,900 m²
Ferry Terminal: 3,300 m²
LEISURE

46% mobility

54% leisure

Parking 8.900 m²
Ferry Terminal 3.300 m²
Swimming Pool 5.1100 m²
Nightclub 2.000 m²
Marina 2.050 m²
Food 1.050 m²
Circulation 4.250 m²

GFA = 26.660 m²
O.C.F.T.C
(Office des Chemins de Fer et des Transports en Commun)
O.C.F.T.C
(Office des Chemins de Fer et des Transports en Commun)

$ 3,000,000,000 subsidy on fuel
O.C.F.T.C
(Office des Chemins de Fer et des Transports en Commun)

$ 3.000.000.000 subsidy on fuel

\[ 3\% = \pm \$ 100.000.000 \]
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CIRCULATION Voids
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COLUMNs
PREFAB ELEMENTS
FERRY TERMINAL

STRUCTURE
- blinds?
- where should the water membrane be?
- what kind of ceiling?
- round corner edge?
- show mechanical ventilation (exposed?)
- afschot
- teken in lijn met vloer!!!
Views

Saline water
Views

Saline water

Wear and tear

MATERIAL REQUIREMENTS
Views
Saline water
Wear and tear
Comfortable climate
Lime stone
Floor

Glazed ceramic tile
Opaque facade

Glass block
Transparent facade

MATERIALS PLATFORM
Lime stone
Floor

Wood
Canopy / structure

Glass
Open facade
Terminal + Leisure
One sided docking
PASSENGERS APPROACH
ALL FLOWS
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54,000 passengers / day
54,000 passengers / day

same as Beirut Football Stadium
54,000 passengers/day
same as Beirut Football Stadium
1/10th of Rotterdam metro
THANK YOU