



INTERNAL

# **EXAMPLES OF AFFORDABLE HOUSING AND SHELTERS IN FINLAND**

Marko Nokkala

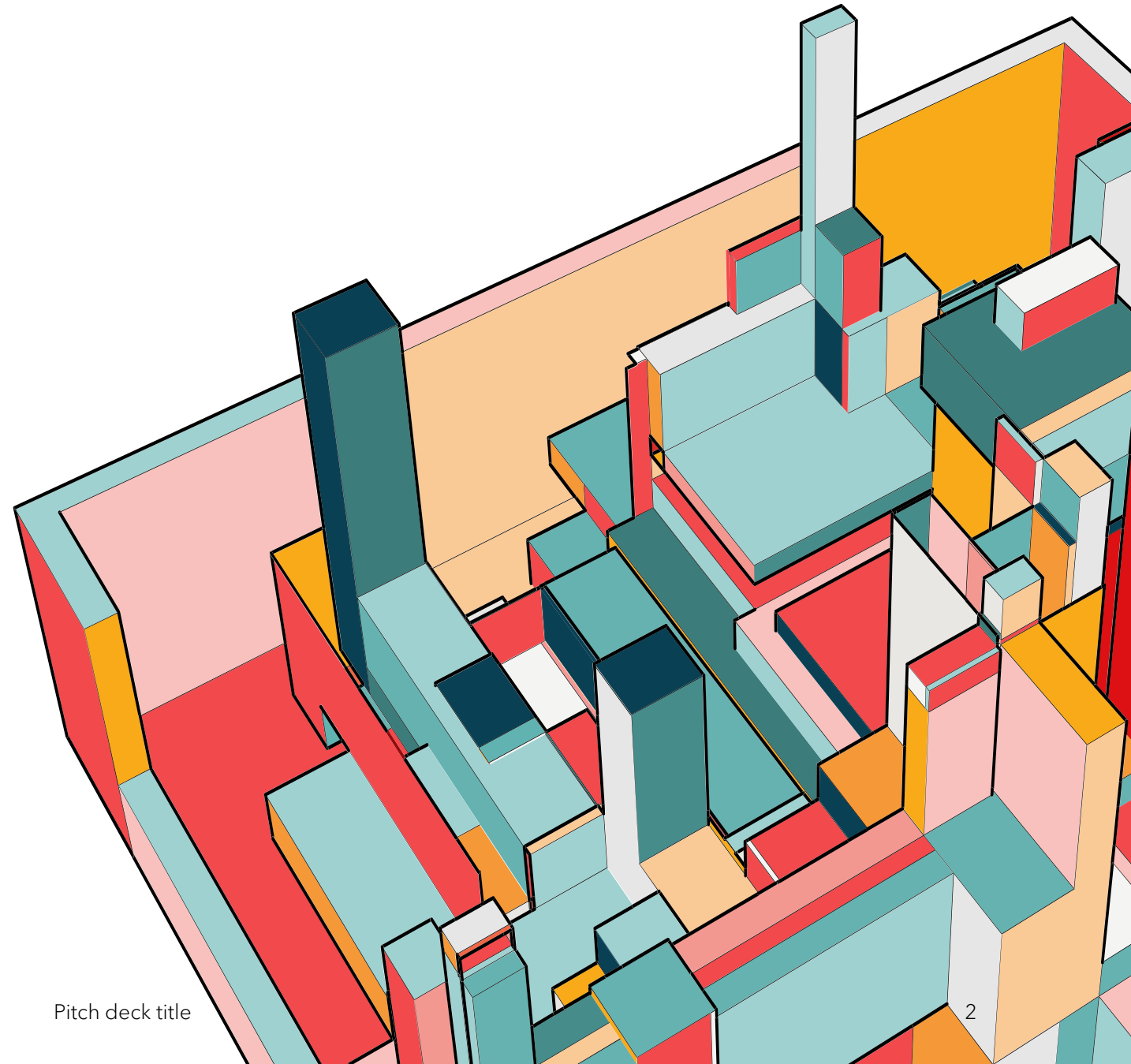
# SOCIAL HOUSING PRINCIPLES

Focus on:

- Identified user groups and their needs, including elderly and disabled persons
- Safety (materials science, structural works, evacuation plans, shelters etc.)
- Affordability (including prefabrication of elements and use of recycled materials)
- Energy efficiency (temperature controls, solar PV systems, automated lights etc.)
- Comfort (air quality, space, ventilation, passive housing)

7/1/20XX

Pitch deck title



# BUILDING NEW

## MIXED USE

Design new areas with various residential groups and services in mind, allow for mix of rental and owned property.

## CUSTOMERS

Define the customer groups and ways to provide them affordable housing at rent levels below private market

## FINANCIALS

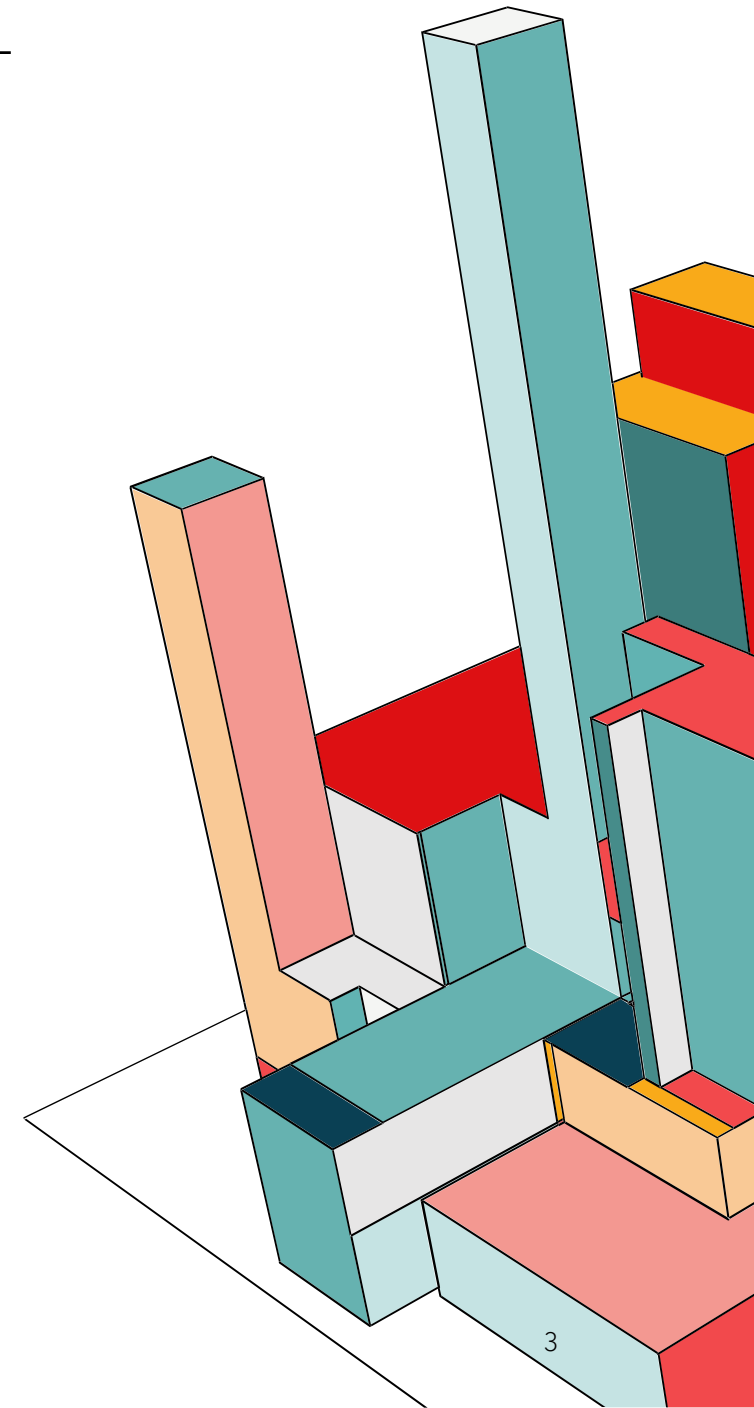
Develop models of refinancing for instance by own-as-you-go models and co-ownerships

## COSTS

Can be shared with private sector if incentives are given for instance in the form of land for properties in exchange for social housing construction

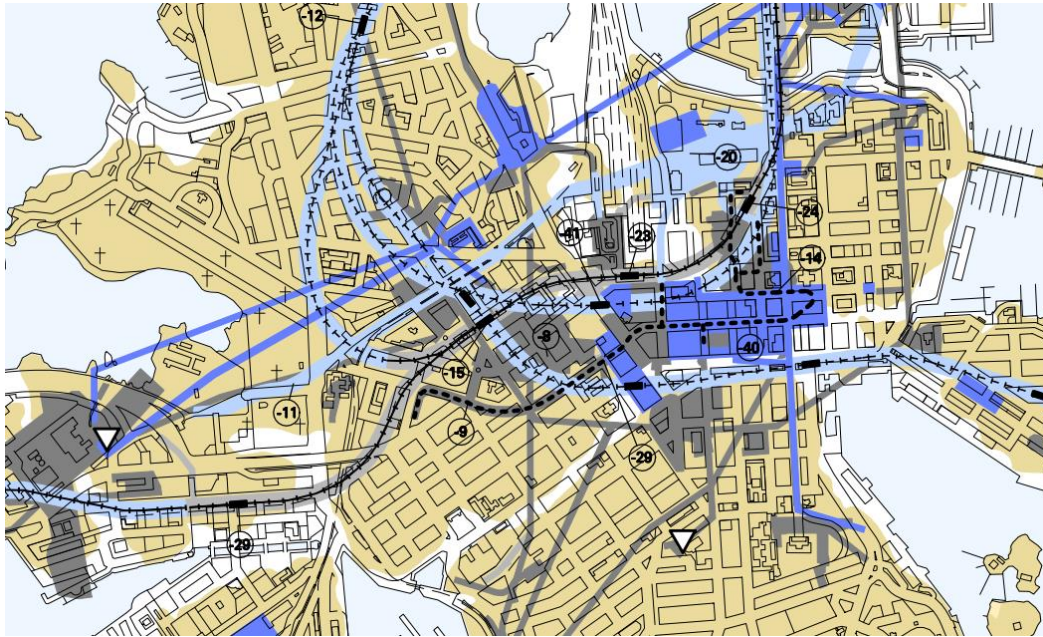
## USABILITY

Customers in the need of modernization and also energy efficient solutions but also considering combining public institutions like childcare, libraries or health clinics with social housing.



# SHELTERS AT HELSINKI MA

## Detailed underground system



## Multiple functions

- Transport corridors
- Parking areas converting to shelters
- Storage areas and passageways
- Non-public areas (reserved for government shelter and command centers)
- Water deposits and waste management systems
- System developed over 70 years

# MULTIPLE PURPOSES



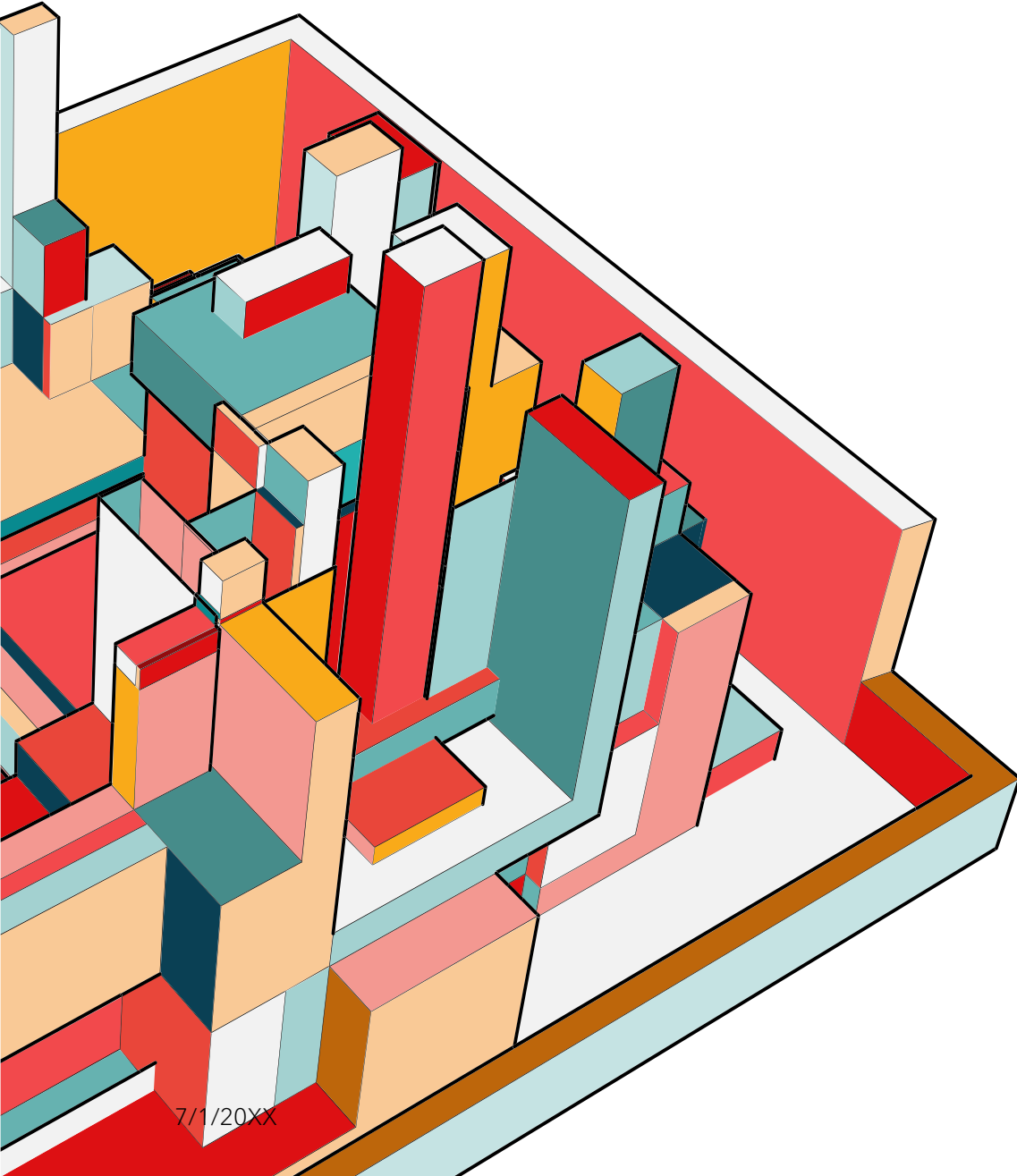
New construction to  
allow for  
underground  
structures and space



Increasing safety of  
local citizens and  
creating logistics  
networks



Focus on clean air,  
ventilation,  
filtration,  
functionality



# SUGGESTED APPROACH

Cooperation with Finnish authorities (Helsinki City, Department of rescue and city planning, Ministry of Interior and National Emergency Supply Agency).

Planning new underground structures, including metro stations, to accommodate the functions that are essential for City of Kharkiv.

Arrange a technical visit to Helsinki to allow for in-depth discussions.

# THANK YOU

Marko Nokkala

Marko.Nokkala@gmail.com