

Urban pop-up housing environments and their potential as local innovation systems

APPROACH

Purpose	Temporary living in halls of vacant (factory) buildings
User group	User mix – people interested in communal living and people with limited housing options
Usage time	Up to one year per resident
Lifetime	Until new permanent use of building
Capacity	Scenario for up to 78 people



LIFE SHARING TO GO INFACTORY

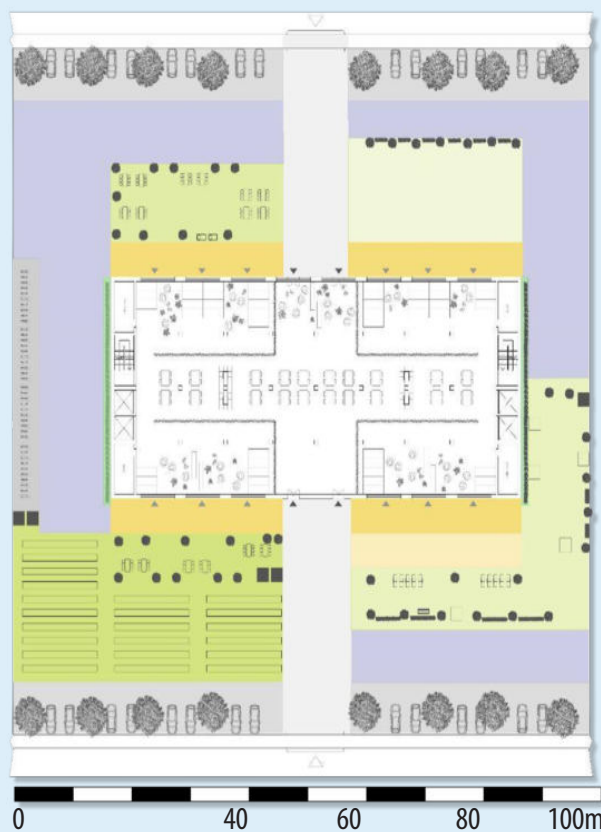


BUILDING

Characteristics	Based on exploring communal ways of living and fostering exchange between people with different backgrounds
Design	Interconnectable modules (3.6x1.2m) Different module configurations Floating floor with heating system
Main Materials	Frame: structural steel Insulation: straw Walls: timber wood Simple joints
Size	1 to 4 people per housing unit



LIFE SHARING TO GO INFACTORY



Area suitable for appropriation

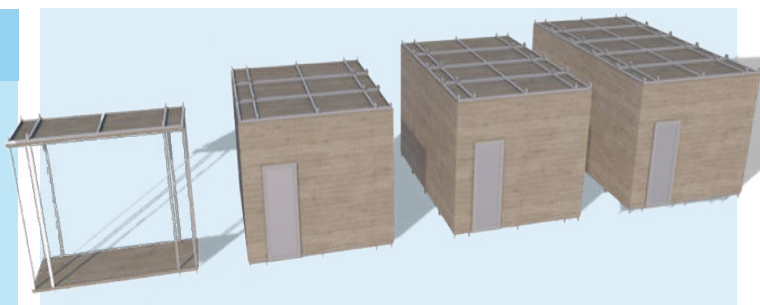
- Appropriateable by adjacent residential units
- Area for domestic activities (laundry drying, etc.)

Comunal open space

- Area for cultivation: high raised beds
- Area for gathering
- Silent area
- Play area
- Facade greening
- Multifunctional area open for different uses
- Access area
- Car parking
- Bike parking (roofed)
- Building access
- Access to housing environment
- Informal acces to appropriatable open space residential units

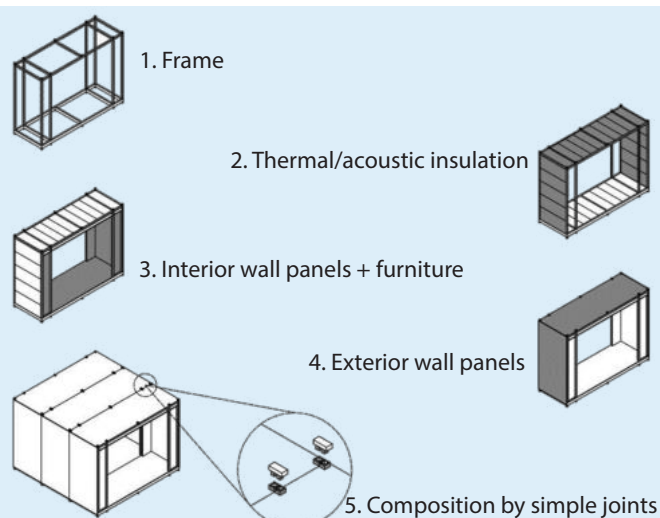
RESOURCES

Power supply	Grid connection
Electric installation	Building management system
Heating	Wood chip plant
Ventilation	Natural ventilation
Water supply	Public water network
Water heating	Wood chip plant/PV
Sanitation system	Sewage connection



SITE

Preconditions	Accessibility of public transport Accessibility of social infrastructure Site is not in disrepair (health hazards, danger of collapse, site contamination)
Open space	No private open space Communal: cultivation area Area for gathering Silent area Play area Multifunctional area Bike parking Trees in buffer zone Access area



Adapted from the original design of Tasevska and Dimitrov

PROJECT PARTNERS



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VIENNA SCIENCE AND TECHNOLOGY FUND

The project ESR17-010 has been funded by the Vienna Science and Technology Fund (WWTF).

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APPROACH

Purpose	Temporary housing during heat waves
User group	People vulnerable to heat waves
Usage time	Several days to weeks
Lifetime	Several years
Capacity	Scenario for up to 48 people

BEAT THE HEAT PALLET SHELTER



BUILDING

Characteristics Design

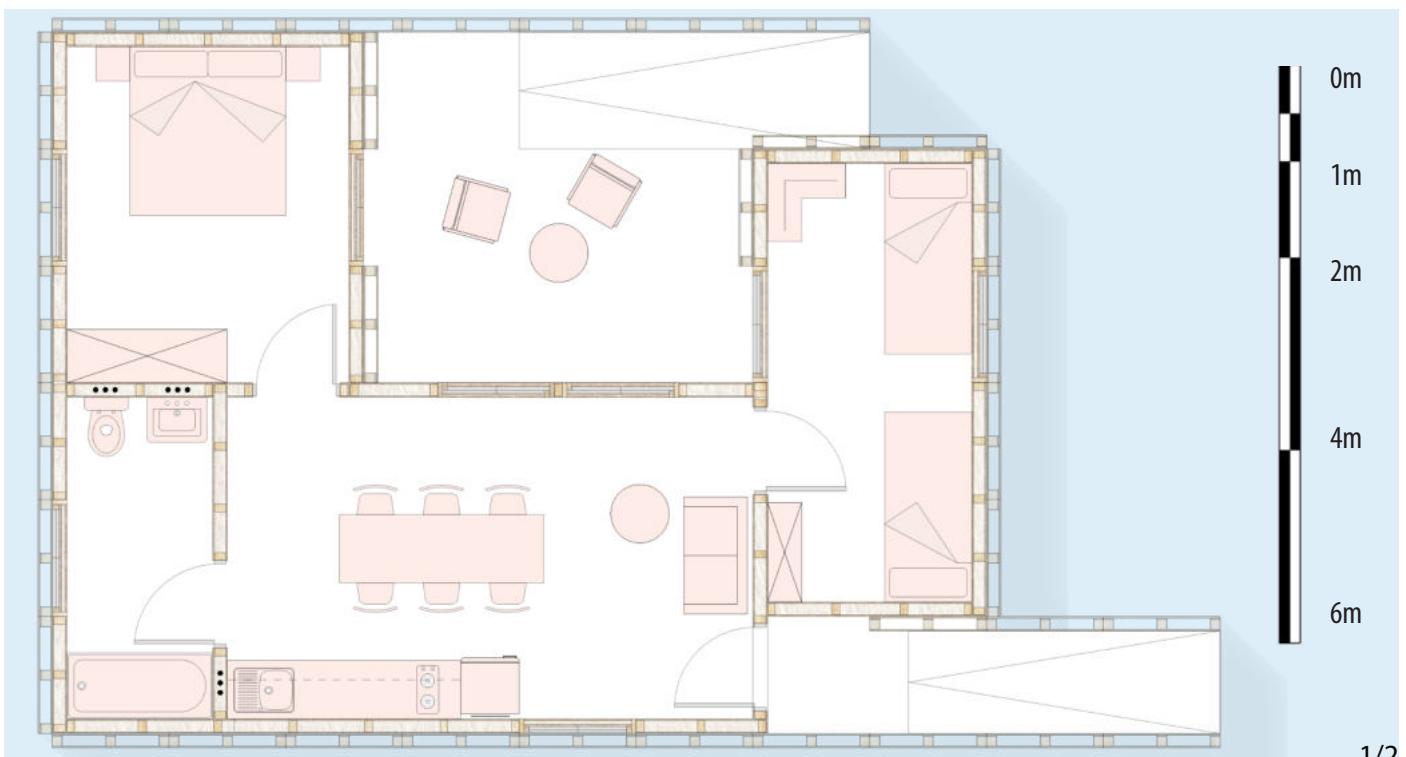
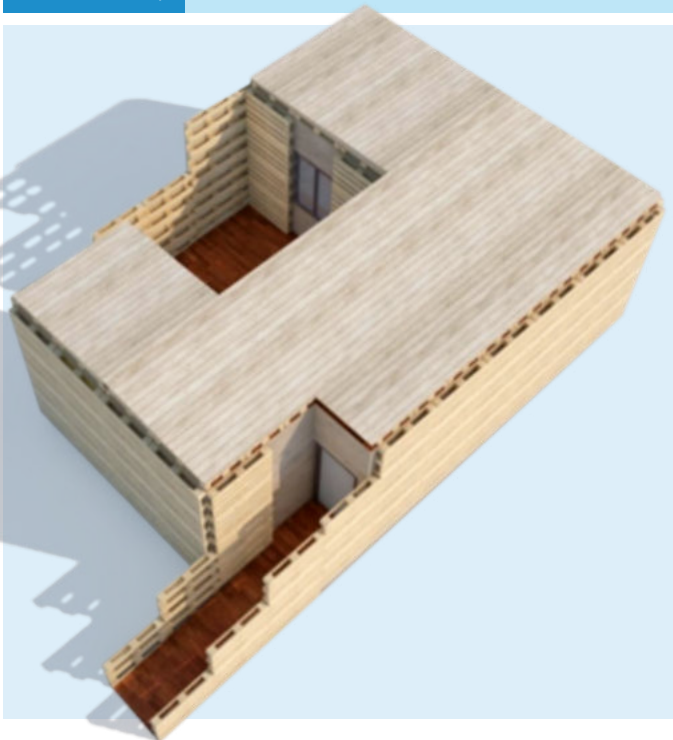
Based on natural cooling principles
Recycled construction elements
Sustainable raw materials
Minimal transport costs
Easy and quick assembly
Reusable and easy to store

Main Materials

Completely shaded by sun sail
Standardized EUR-pallets
Oriented strand board panels
Straw insulation
Wooden laminate

Size

Wooden beams
Building 50 m², Terrace 10 m²
Up to 4 people per housing unit

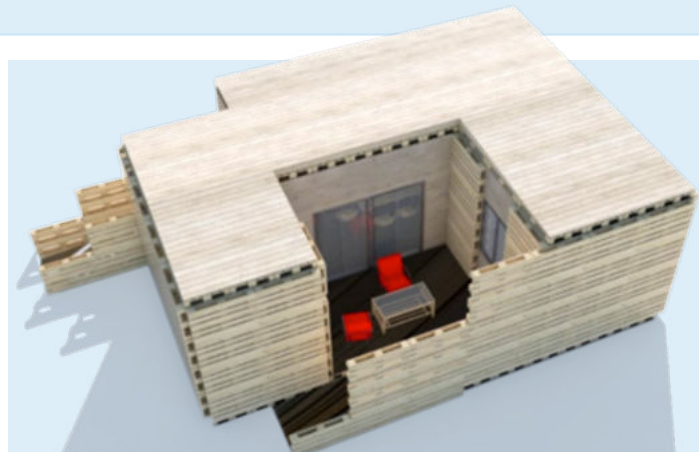
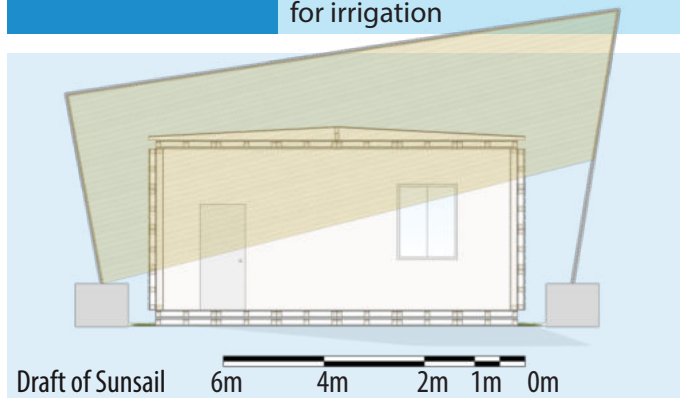


BEAT THE HEAT PALLET SHELTER



RESOURCES

Power supply	Grid connection
Electric installation	Conventional
Heating	None required
Cooling	Sun sails, water mist sprays
Ventilation	Natural ventilation
Water supply	On-site elevated water tank
Water heating	Instantaneous water heaters at tapping points
Outdoor lighting	LED mounted on the buildings
Wastewater	Percolation/infiltration
Sanitation system	Dry toilets, greywater system for irrigation



SITE

Preconditions	High potential for natural cooling systems Accessibility of public transport Accessibility of social infrastructure Flat area (slope <5%)
Open space	Private: terrace, garden and cultivation area Communal: space for recreation and circulation Wheelchair-accessible Communal used bike storage

Adapted from the original design of Barbero Durán and Cuesta Urquía

PROJECT PARTNERS



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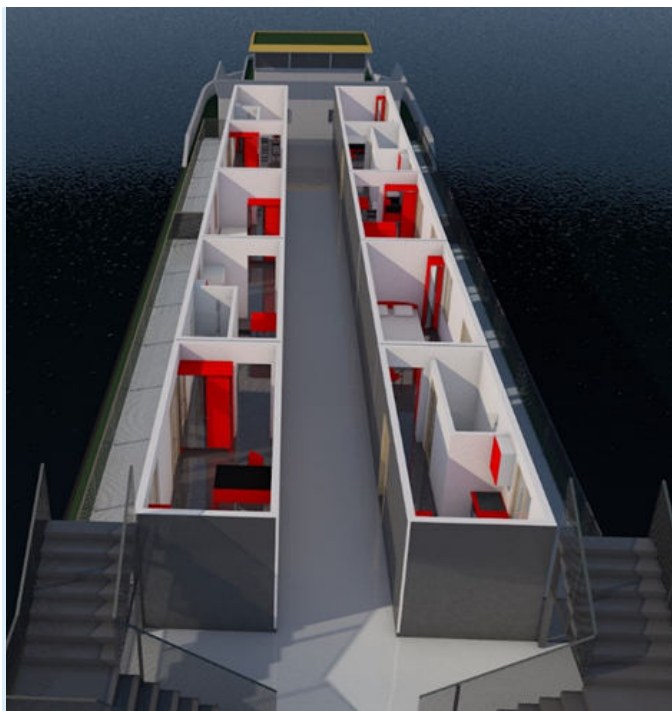
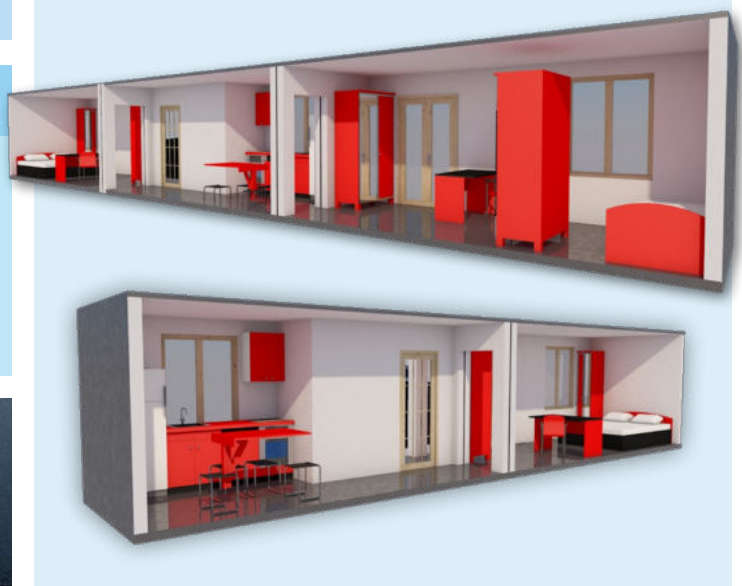
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DONAUTONOM BINNEN BLEIBEN

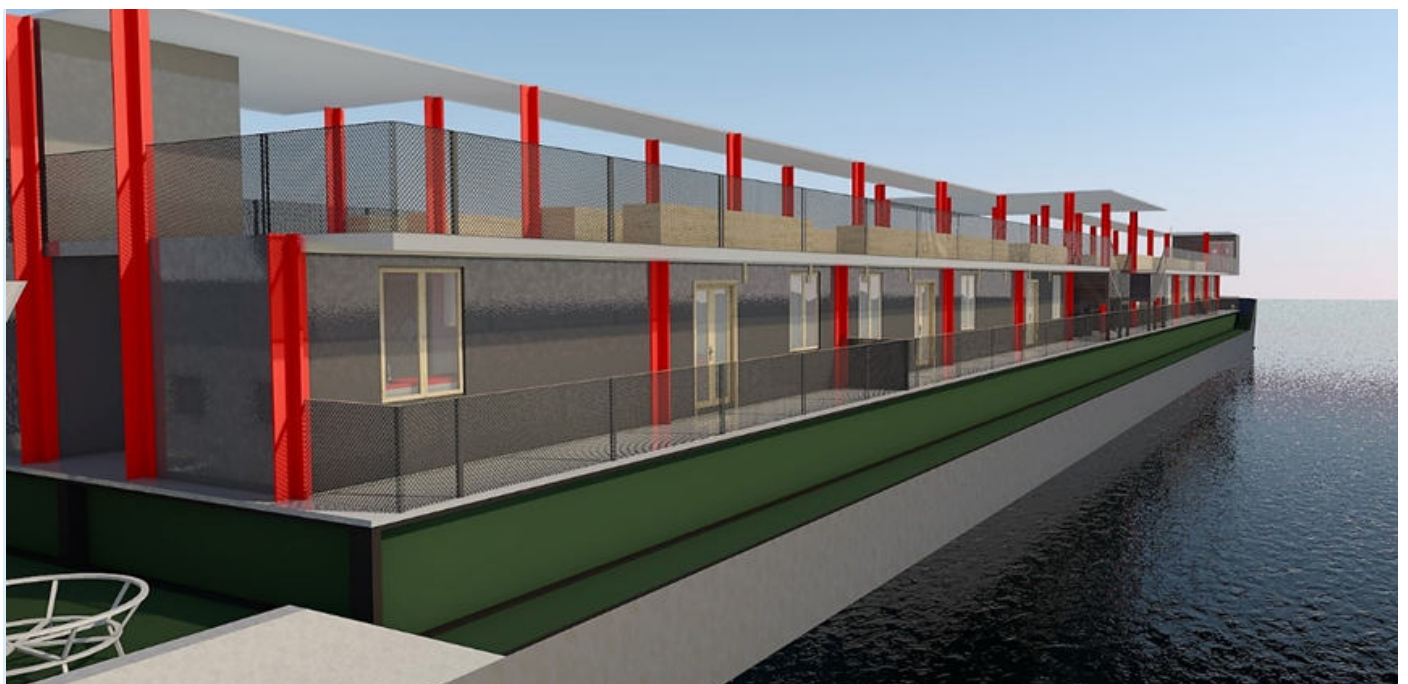
APPROACH

Purpose	Temporary living in cargo ship
User group	People interested in sustainable and resource autonomous living
Usage time	Up to three months per resident
Lifetime	Up to three years moored
Capacity	Scenario for up to 20 people



BUILDING

Characteristics	Aiming for self-sufficiency and autonomy regarding resources, energy and food supply
Design	Efficient utilization of the limited space
Main Materials	Repurposed ISO (shipping) containers Sliding doors Sliding wall segments
Size	Two or three containers per unit 1 to 4 people per housing unit



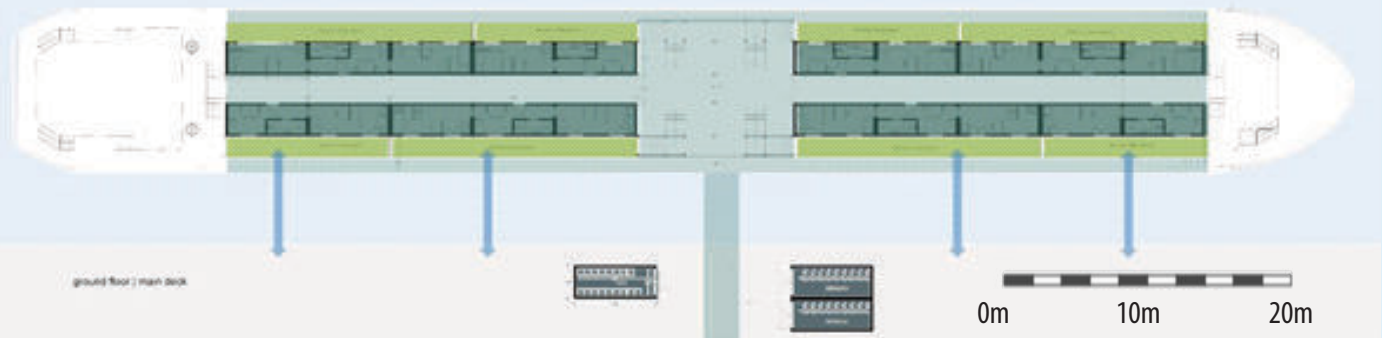
DONAUTONOM BINNEN BLEIBEN



1st floor | raised beds

- Productive area (high raised beds; approx. 73 m²)
- Communal area for gatherings (approx. 100 m²)

- Access area (approx. 300 m²)
- Shed (approx. 20 m²)



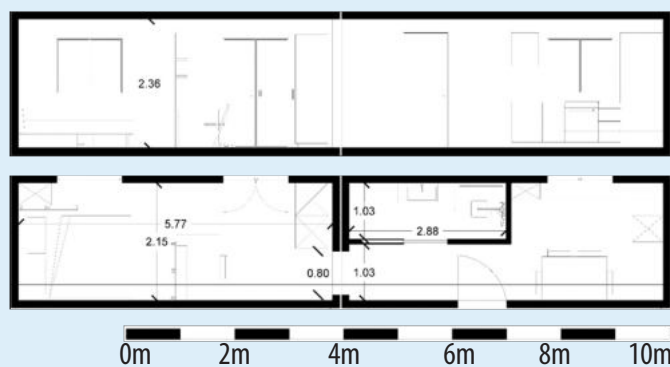
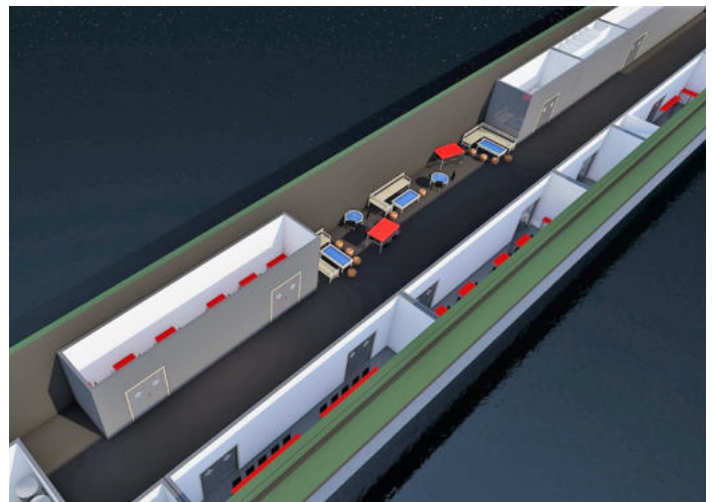
Ground floor | main deck

- Private semi-open space: loggia (18- 27m²)
- Private units for 2-3 users
- Access area (approx. 325m²) and landing stage

- Public open space (quay)
- Bike Storage and garbage facilities
- Possible conflicts (private-public)

RESOURCES

Power supply	Photovoltaics on the ship
Electric installation	Building management system
Heating	Water heat pump
Ventilation	Integrated into window frame
Water supply	Water treatment unit for river water and collected rain water/external water supply
Water heating	Electric flow heaters
Sanitation system	Greywater and blackwater system operated with river or rain water



SITE

Preconditions	Berth for ship Accessibility of public transport Accessibility of social infrastructure
Open space	Private: loggia – 18-27m ² /apartment Communal: Area for gatherings (roof terrace) Productive area (high raised beds) Access area

Adapted from the original design of Dembski and Woessner

PROJECT PARTNERS



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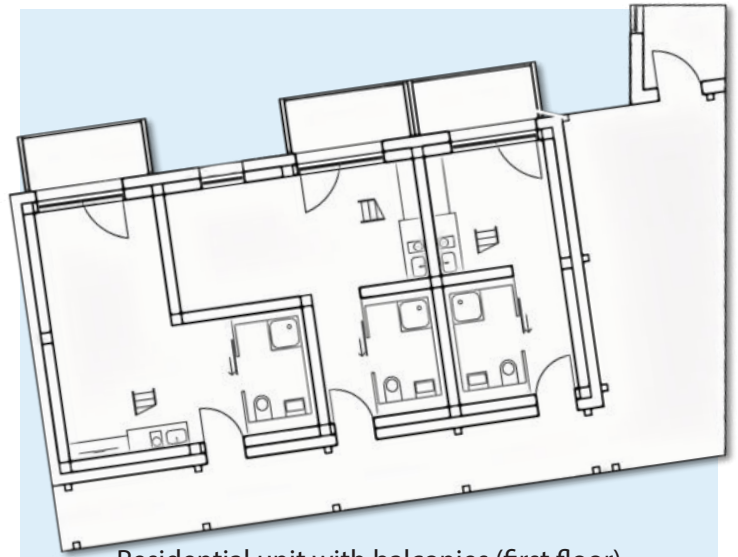
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APPROACH

Purpose	Temporary housing in vacant lots
User group	User mix – people interested in communal living and people with limited housing options
Usage time	Two to five years
Lifetime	Multiple assembly and disassembly phases
Capacity	Scenario for up to 31 people



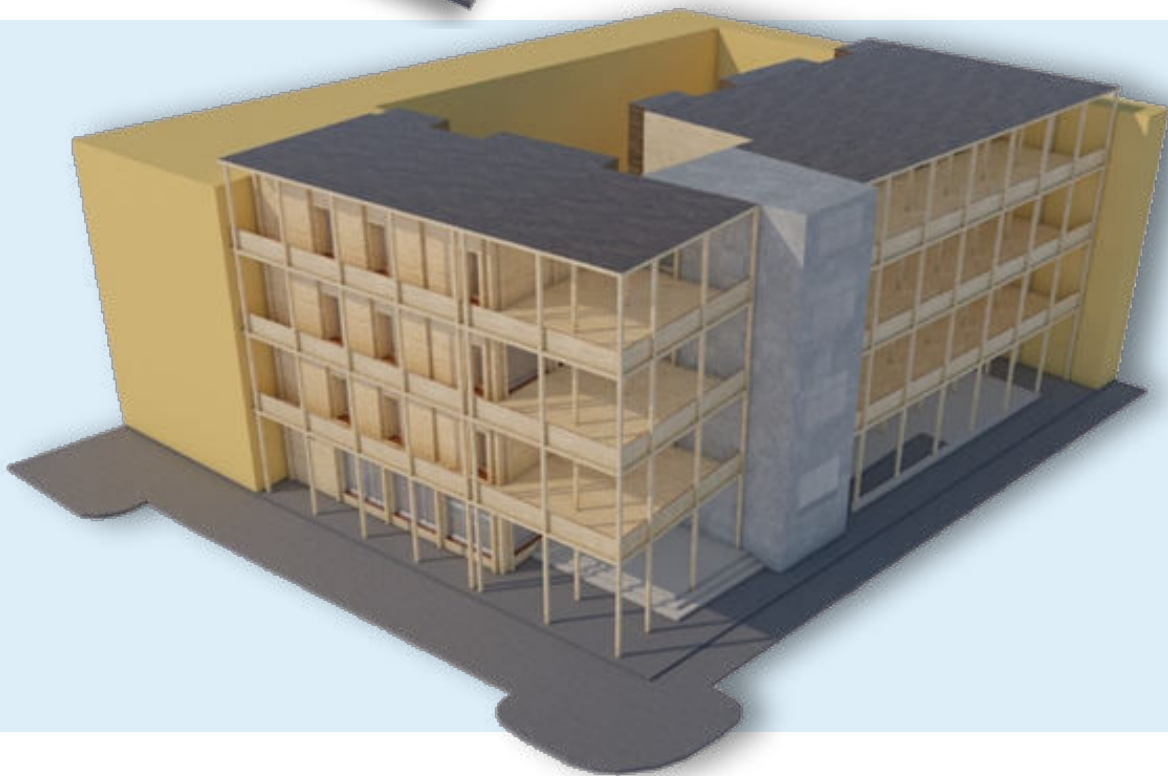
GAP MODULE GAPSOLUTELY FITTING



Residential unit with balconies (first floor)

BUILDING

Characteristics	Based on modular components consisting of prefabricated elements
Design	Easy transport Reusable modules Deconstruction with low wear and tear Allows different living constellations
Main Materials	Wooden columns Cross-laminated timber Nut and bolt fixation Reinforced concrete
Size	1 to 6 people per housing unit



GAP MODULE GAPSOLUTELY FITTING



RESOURCES

Power supply	Grid connection/Photovoltaics
Electric installation	Building management system
Heating	Air-water heat pump (AWHP)
Ventilation	System with heat exchanger
Water supply	Public water network
Water heating	AWHP/elect. heating cartridge
Sanitation system	Sewage connection



SITE

Preconditions	<ul style="list-style-type: none"> Accessibility of public transport Accessibility of social infrastructure Vacant lot free of preexisting structures
Open space	<ul style="list-style-type: none"> Private: loggias towards inner courtyard Communal: terrace Green area, cultivation area Access area, graveled path Bike storage room Involvement of the neighborhood is encouraged by communal open space concept



Adapted from the original design of Friedwagner and Prömpers

PROJECT PARTNERS



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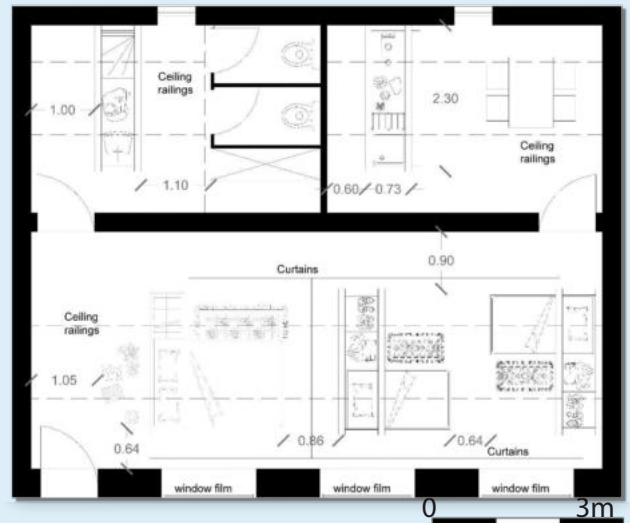
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APPROACH

Purpose	Temporary living in vacant ground floor retail space
User group	Individuals/families with temporary housing needs, e.g. expats
Usage time	Six to 24 months
Lifetime	Multiple assembly and disassembly phases
Capacity	Scenario for up to 4 people



FLAT-PACK SHOP HOPPING BOX



BUILDING

Characteristics	Reusable, mobile living boxes ("furniture in a box"), easy to adapt to different retail space layouts Flexible room layout through sliding modules on rails and fold-up beds
Design	Individual living units No structural adaptations Sliding modules on rails Kitchen and shower module available Durability and ease of repair
Main Materials	Wooden modules Guiding metal rails Textile curtains
Size	Case-dependent on available floor plan of retail space



FLAT-PACK SHOP HOPPING BOX



Buildings

- Neighboring buildings
- Part of building of other or communal use
- Housing environment

Public open space

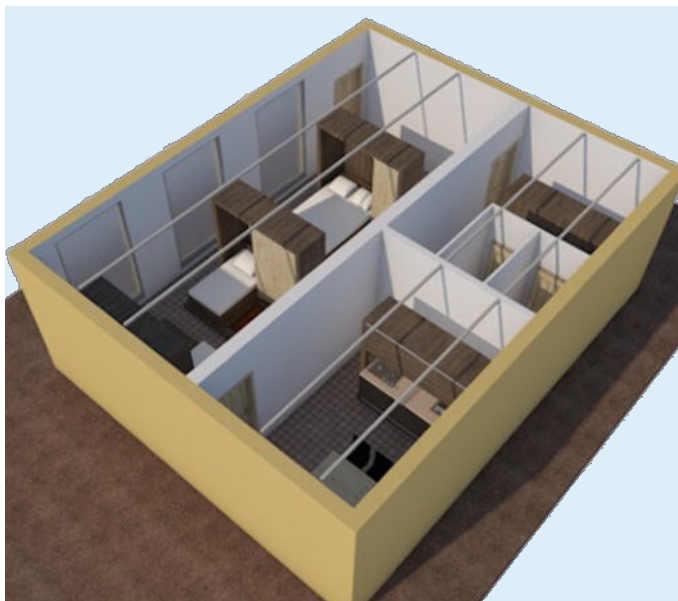
- Access area of housing environment
- Access area of building
- Public open space able to be appropriated by residents

Open space - communal used by building's residents

- Inner courtyard with seating, open for different uses
- Inner courtyard used as play area
- Facade greening

RESOURCES

Power supply	Grid connection
Electric installation	Current system in place
Heating	Current system in place
Ventilation	Current system in place
Water supply	Public water network
Water heating	Current system in place
Sanitation system	Sewage connection



SITE

Preconditions	Small vacant ground-floor retail space Toilet available in retail space Location in main streets of the city
Open space	No private open space Communal: Inner courtyard Short-term appropriation of sidewalks (e.g. Parklets)

Adapted from the original design of Verdugo Pelaez and Rodriguez

PROJECT PARTNERS



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APPROACH

Purpose	Flexible – ranging from disaster response to event hostels
User group	Flexible – ranging from people with sudden housing needs to short-term stays
Usage time	Several days to weeks
Lifetime	High durability
Capacity	Scenario for up to 40 people

LIFE ON TRACK(S) TINYTAINER

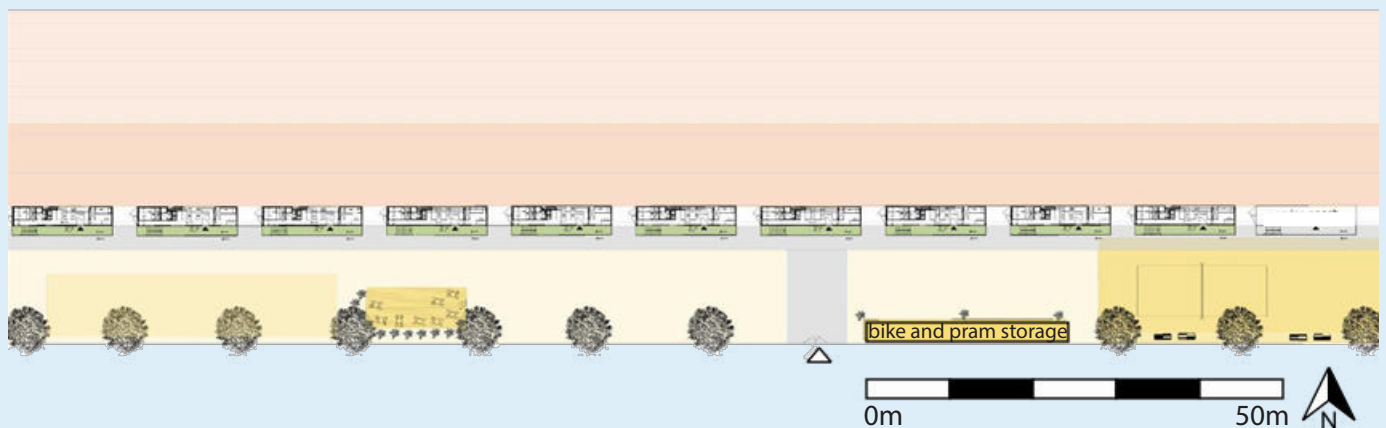


BUILDING

Characteristics	Quickly deployable housing solution with a wide range of possible usages
Design	Fully equipped mobile housing unit on railway Transportable without dismantling to intended location along railways
Main Materials	Repurposed ISO (shipping) containers Corrugated steel Plywood flooring Straw insulation
Size	Up to 4 people per housing unit



LIFE ON TRACK(S) TINYTAINER



- | | |
|--|--|
| Open space private to residential unit | Communal used open space open to appropriation |
| Access area | Communal used open space: potential gardening area |
| Buffer area (tracks) | Communal used open space: play zone |
| Tracks used for other uses | Communal used open space: terrace with seating |
| | Communal bike storage (roofed) |

RESOURCES

Power supply	Grid connection
Heating	Infrared panels
Ventilation	Integrated in window frame
Water supply	Public water network
Water heating	Electric flow heaters
Sanitation system	Sewage connection



SITE

Preconditions	Non-frequented tracks Delimitation to operational rail lines Low noise exposure Accessibility of social infrastructure Accessibility of public transport
Open space	Private: terrace mounted on container and folded in for transport Communal: terrace Access area Multifunctional area (cultivation, play zone, etc.) Bike storage

Adapted from the original design of Neudeck and Werni

PROJECT PARTNERS



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