

City as Material Bank – Constructing with Reuse in Musicon, Roskilde

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Musicon

250.000m²

Urban mix-use brown field development of former concrete element plant

Creativity, culture, business, housing, education,
Ambition for 1000 housing units and 1000 work places
(people)

Central municipal office of development
Inspiration from Amsterdam, Vancouver, Ruhr Gebiet

A) Experimental co-created development without a master plan (2007 -) “Fluid planning”

B) Development with a master plan (Vandkunsten 2016)



Pløger, John (2008) Byens rum som udviklingsstrategi - by Juul | Frost

www.musicon.dk

PROJECTS IN MUSICON

Vandkunsten



HAL 7
Completed



INDFALDET



RECYCLING CENTERS

PROJECT

Masterplan

Recycling Centers

Recycling Centers

Hal7

Housing in Indfaldet

Eco-Village housing

TYPE

Municipal planning

Ressorce Mapping and pre-work

Current competition

Cultural purposes

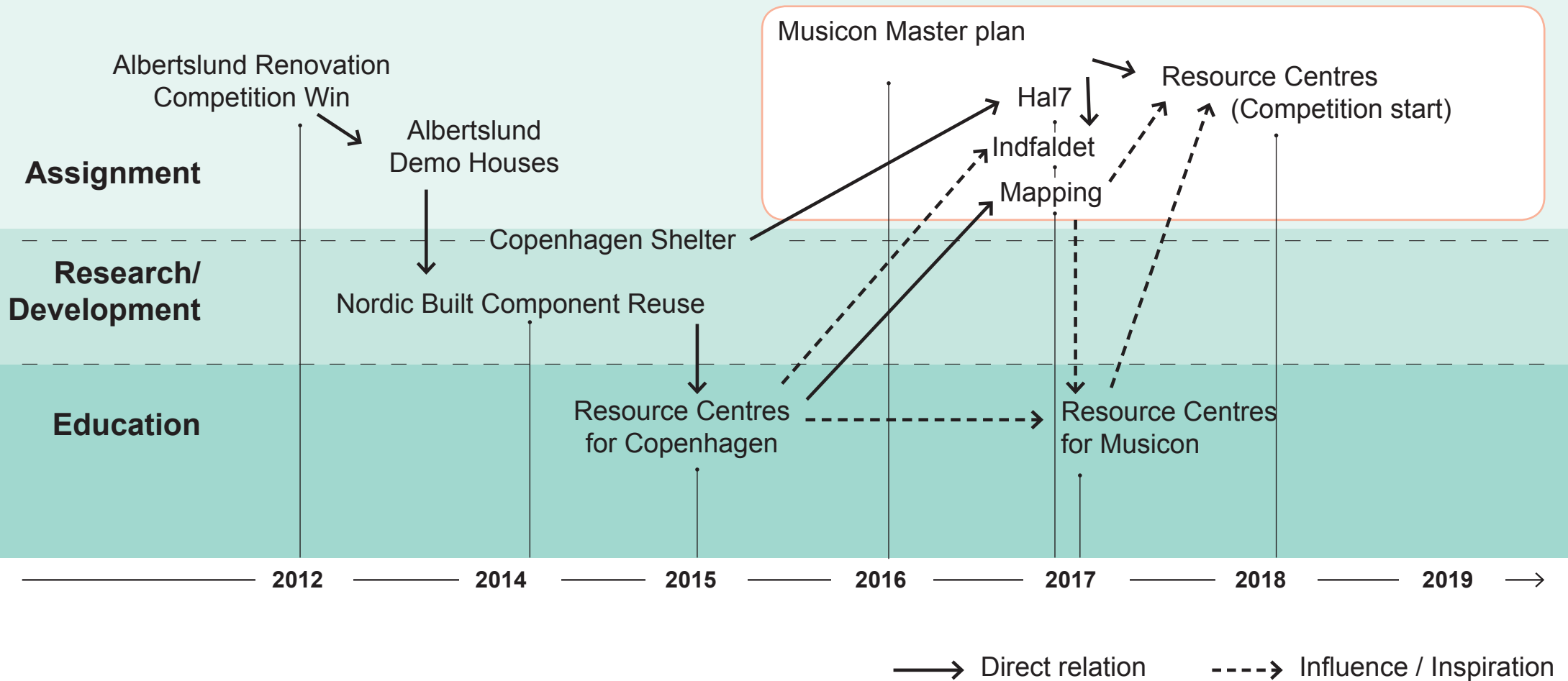
Danish Social housing

Owner-occupied units and communal house

RELATIONSHIP BETWEEN R&D / ASSIGNMENTS

Vandkunsten

THE RELATIONSHIP IS NOT LINEAR. SOMETIMES RESEARCH LEADS TO AN ASSIGNMENT AND SOMETIMES AN ASSIGNMENT INSPIRES TO OR SHOWS THE NEED FOR RESEARCH



RADICAL REUSE OR CONTEMPORARY VERNACULAR

Musicon

Hal7

Former industrial hall

New home to three municipal groups

Orange Makers

Youth Maker Space

Makers' Corner - gathering spot for vulnerable citizens

10 year lease

€ 800,000 Budget

Donation from AP Møllerske Fond

880 m²

Client: Roskilde Municipality

Architect: Vandkunsten

Contractor: Ejenvinding & Datter



EXISTING CONDITION

Hal 7



DIRECT RELATION SHIPPING CONTAINERS REPURPOSED FOR MOVABLE, TEMPORARY MINIMAL HOUSING

Comission / Development



INTERIOR INSULATION

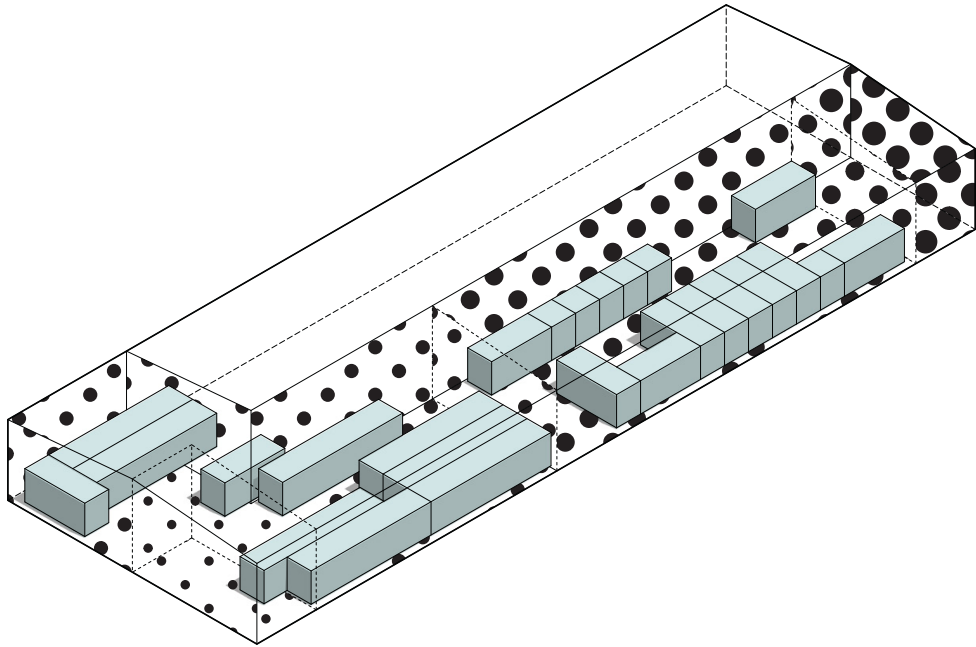
EXTERIOR INSULATION





VANDKUNSTEN FOR COPENHAGEN VILLAGE

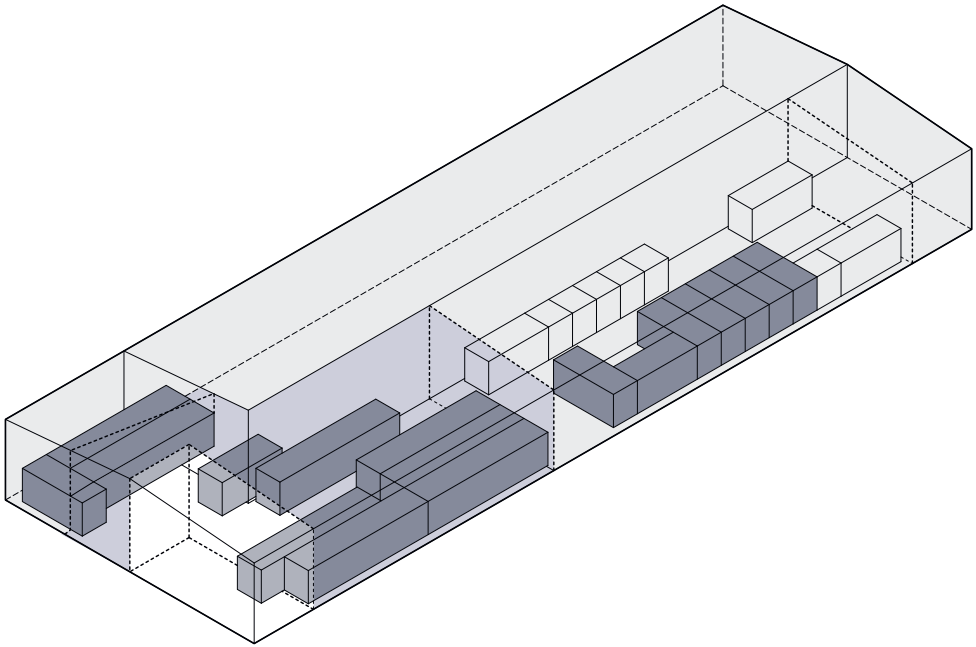
City as Material Bank – Constructing with Reuse in Musicon, Roskilde - BAMB 20190207





ZONING DIAGRAMS

Hal 7



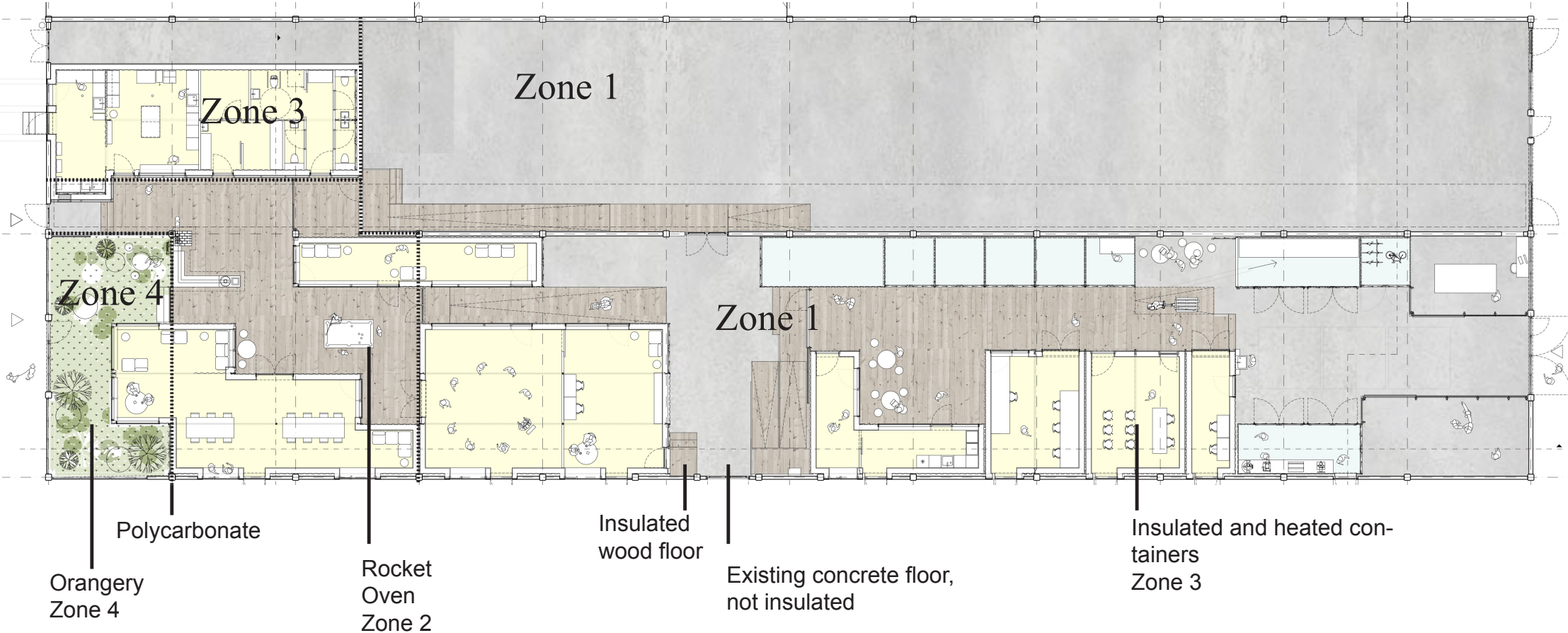
-  Loud zone
-  Medium noisy zone
-  Low noise zone
-  Quiet



-  Climate zone 1, open space
-  Climate zone 2, 17 degrees Celsius
-  Climate zone 3, insulated and heated to 21 degrees Celsius
-  Climate zone 4, orangery

PLAN WITH CLIMATE ZONES

Hal 7





INTERIOR INSULATION WITH PAPER GRANULATE

Hal 7





ORANGERY - PASSIVE SOLAR ZONE

Hal 7



INSULATED PLINTH AND CENTRAL HEATING IN CONTAINERS

Hal 7



90 % reuse
Roughly

Amount of reuse

EXISTING

Concrete foundations
Concrete floor
Roof
Facade
9 pre-used shipping containers

ADDED REUSE

20 'new' repurposed shipping containers
Doors
Windows
Sports flooring

New materials

Polycarbonate panels
Wooden structures
OSB/Plywood sidings
Paper granulate insulation
Central heating pipes and fixtures

ZONES FOR ACTIVITIES

Hal 7



DIVISION BY POLYCARBONATE WALL



ROCKET OVEN A LOW TECH AND SOCIAL HEAT SOURCE



ORANGERY FACADE

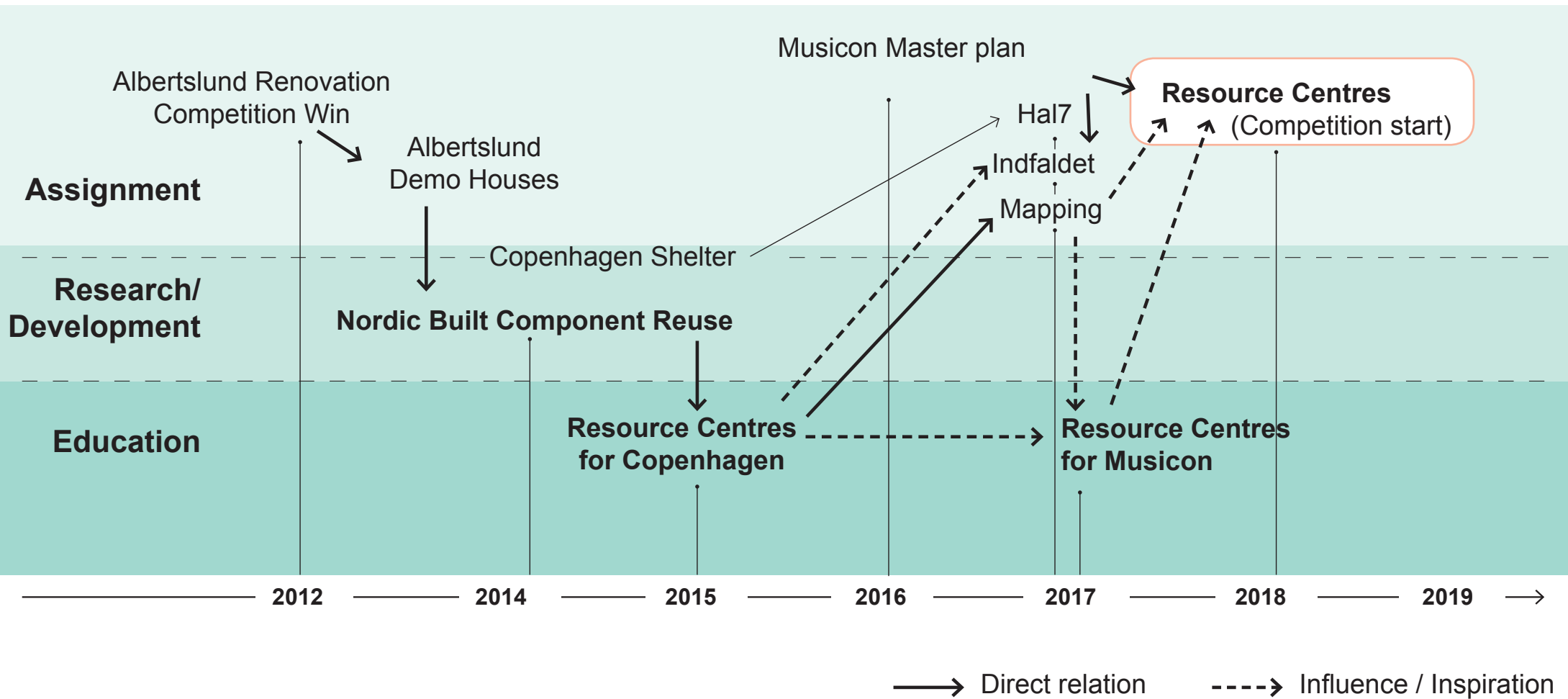
Recycling Centers in Musicon

14 centers in the master plan
Reuse a theme
Mapping of existing potential components
Salvaged
Stored on location by the city
Current state: Turnkey design competition



RELATIONSHIP BETWEEN R&D / ASSIGNMENTS

Vandkunsten



Housing project Indfaldet

2017-2020

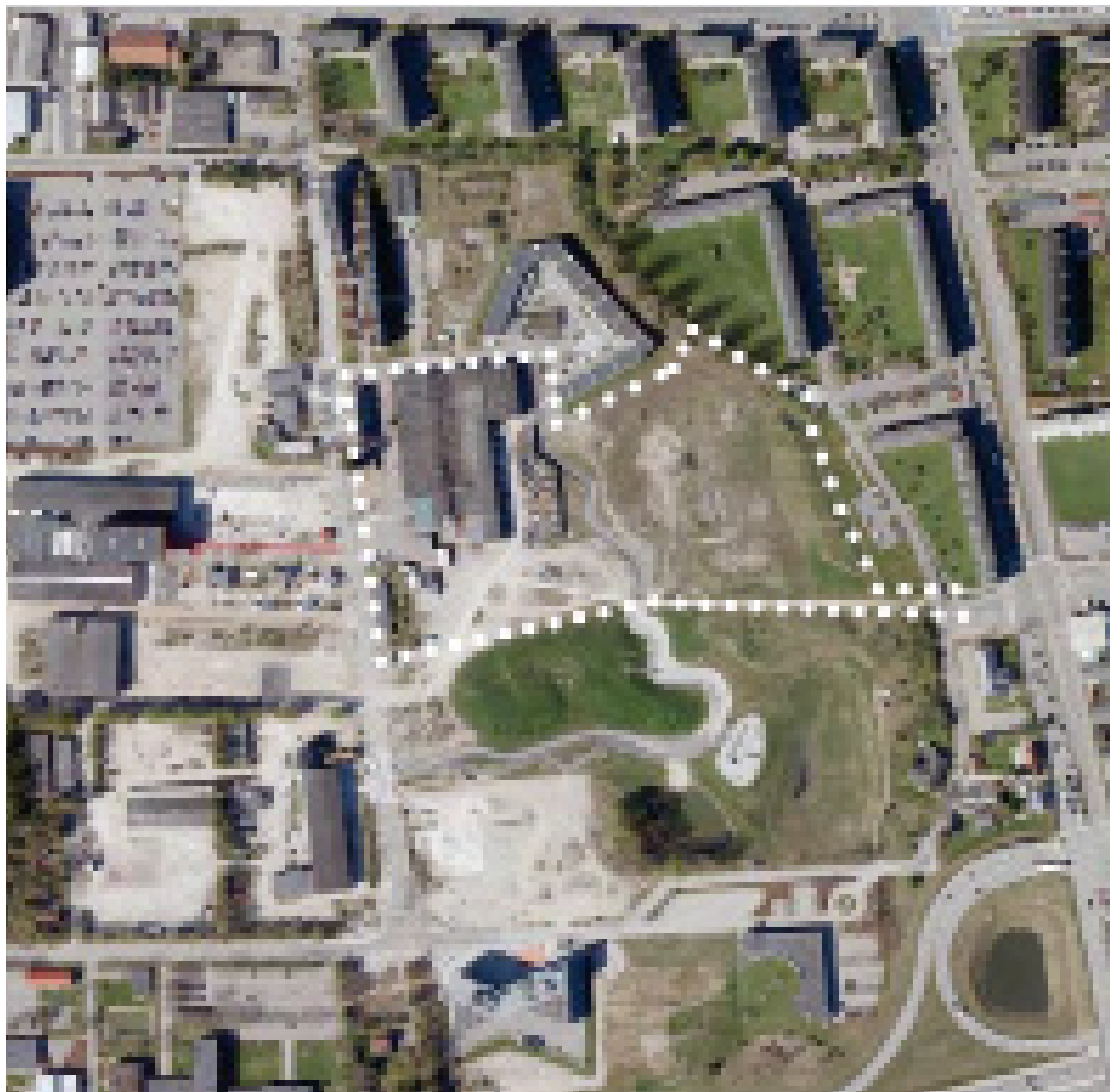
Area 5800 m²

50 units

Status: Pre-tender (at the municipality's)



SITE
Indfaldet Housing, Musicon



REUSE AND REVERSIBLE CONSTRUCTION
Indfaldet Housing, Musicon



FACADE WITH REUSE SYSTEMS AS ORNAMENT



REBEAUTY REFERENCES

SITE PLAN
Indfaldet Housing, Musicon

Four neighbouring projects
called to workshop

Contractors involved

Aim to have coherent
expression

Alternative local planning
process to include the builder
actors

The Indfaldet Contractor/
developer agreed to reuse
elements



Conclusions

>> A high level of reuse is possible despite a very limited budget

>> Writing 'reused materials acceptable' allows contractors to think creatively and shows which materials are the most affordable

>> New reuse paradigm possible with deep collaborations between disciplines (contractor and architect)

Design for disassembly is suitable for temporary leases and changes in demands

The small scale and limited timespan of the Hal7 enables the city and us to study whether DfD ambitions can be fulfilled

Still too early to know if the city's engagement will in fact enable further reuse in conventional housing projects such as indfaldet and Eco Village

Further research in the organizational framework in cities which enables reuse projects!