DUTCH DESIGN DOCK

REDEVELOPMENT OF THE VACANT VAN GENDTHALLEN,
USING RECLAIMED MATERIALS

P5 PRESENTATION
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INTRODUCTION
NEED
Why is there a need for a Dutch Design Museum?

APPROACH
Focus on 3 topics: Mixed Use, Urban Place & Reuse

BENEFITS
What are the benefits of these three approaches

COMPETITION
Variants for the chosen approach

DESIGN & RESEARCH
Overview of the design steps taken and the implementation of the technical research in the architectural design.
DUTCH DESIGN IS A TERM USED TO CONNOTE DESIGN IN THE NETHERLANDS, PARTICULARLY PRODUCT DESIGN.

More specifically, the term refers to the design esthetic common to designers in the Netherlands. Dutch Design can be characterized as minimalist, experimental, innovative, quirky, and humorous.
MIXED USE

URBAN PLACE

USE OF RECLAIMED MATERIALS

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Anyone who wants to understand the mechanisms of interaction and quality within the creative industries must follow the value chain. That is the way a (creative) product takes from conceiving, to creating, to distributing to the public."

"Wie de mechanismen van interactie en kwaliteit binnen de creatieve industrie wil begrijpen moet de waardeketen volgen. Dat is de weg die een (creatief) product aflegt van het bedenken, naar het maken, naar het verspreiden onder het publiek."

"Promoting chain collaboration can be an important tool for growth and help gain a stronger position in the creative industries."

"Het bevorderen van ketensamenwerking kan een belangrijk middel zijn voor groei en een sterkere positie van de creatieve industrie."

- Stipo
INCREASING VACANCY
WASTE PRODUCTION NETHERLANDS
- Rijkswaterstaat

39.7% 25.4% 14.7% 8.9% 11.3%
Mixed-use development is—in a broad sense—any urban, suburban or village development, or even a single building, that blends a combination of residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated, and that provides pedestrian connections.
DESIGN
PASSAGE
Using the building to connect the surrounding area

PROGRAM
By implementing the passage the building is divided into three main functions; the Dutch Design Dock, the passage and the supporting commercial functions.

PATHWAYS
Pathways are implemented to connect the functions within the Van Gendthallen itself.

MATERIALS
Research towards the reclamation of materials from wastestreams in Amsterdam and the implementation of these materials into the architectural design.
USING THE VAN GENDTHALLEN AS A PASSAGE
DDD | Functions

A. Small Atelier [24m²]
B. Large Atelier [40m²]
C. 3D Printing Lab
D. Workshop / Machinery
E. Experience Lab

DDD | Exhibition Areas

I. Product Design
II. Furniture Design
III. Graphic Design
IV. Architecture
DDD | Functions
A. Large Atelier [40m²]
B. Theatre
C. Workshop space
D. Library

DDD | Exhibition Areas
I. Changing Exhibition
II. Changing Exhibition
III. Changing Exhibition
Commercial Functions

A. Shop
B. Shop
C. Shop
D. Restaurant
E. Bar
F. Hotel
G. Information point

The area around ‘D, E & F’ is the ‘24h zone’ has direct access to the street and can be closed of from the passage.
Construction

1. New grid for subconstruction
2. Cantilever table construction
3. Stability by braced floorfields and at the rising cores
wooden railing
balustrade bracket
cable
partial beam
multiplex plate
dragline
HEB 200
HEB 200
cable tray

1:5 Ver. Detail Pathways
WHAT ROLE CAN LOCALLY RECLAIMED MATERIALS THAT ARE BOTH AVAILABLE IN LARGE QUANTITIES AND WITHIN THE COMING YEARS PLAY IN THE REDEVELOPMENT OF VACANT LARGE SCALE BUILDINGS?
CURRENT PRACTICE | DEMOLITION

1 BUILDING
2 DEMOLITION
3 ROUGH DEBRIS
4 PROCESSING
5 GRANULATE
6 ROAD CONSTRUCTION

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**1. Building**

**2. Dismantling**

**3. Reclaimed Goods**

**4. Reusing Materials As Is**

**Element Reuse!**
Recycle
the use of waste to create new products; which are often different from the products in which the materials were used during their previous life.

Reuse
reused materials are products and materials which were taken from the waste stream, but are reused in their original form (with minimal processing).
MATERIALS FROM THE INDUSTRY & BUILDING INDUSTRY

Production waste

Dead stock

Packaging waste

End of life products

LOOKING FOR MATERIALS AVAILABLE IN LARGE QUANTITIES & WITHIN THE COMING YEARS
SCENARIO 1 | RENOVATION OF OFFICE BUILDINGS

SCENARIO 2 | THE HARBOUR OF AMSTERDAM
OFFICE RENOVATION

- Carpet tiles
- Doors
- Windows

HARBOUR OF AMSTERDAM

- Pallets
- Draglines
- Jute bags
**Scenario 1: Doors**

**Background Information**
Within the general office, the individual workplaces are separated by system walls and those walls will contain doors. These doors are mainly made out of HPL (High Pressure Laminated) and are available in multiple sizes, but the most standard option is 1000 mm width and 2105 mm high (Hiperma, n.d.).

**Options for reuse**
Doors do not necessarily have to be dismantled before reuse, hinges and doorknobs might have to be removed or replaced first. As most doors are made from channel chip plates it might not be the best solution to cut the doors, but it could deliver interesting options for facade implementations.

**Architectural Applications**
- Can be used as column
- Can be used as wall element

**Facade**
- Use doors as shading device
- Use doorknobs as wall element
- Use half doors as shading element

**Interior**
- Doors can be perforated and used as decoration
- Doors can be transformed into storage element
- Doors can be transformed into furniture

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**Scenario 2: Jute Bags**

**Background Information**
Jute bags have been and are still considered to be one of the main packaging materials for goods during transport. This is due to the unique combination of properties: it’s strong, durable and it’s able to ventilate (OMC, n.d.). These jute bags found in the harbour of Amsterdam are used for transporting cacao until they are further distributed. The bags can be cut open and the boxes are transformed to big bags.

**Options for reuse**
The jute bags are available in different sizes, but they are mostly made to hold up to 50kgs of goods. These jute bags have already been cut open, which results in a fabric mesh of 1300 x 2000 mm (VO, n.d.). The fabric sheets can either be put back together or cut in different shapes and sizes.

**Architectural Applications**
- Can be used as cladding
- Can be hung in a frame
- Can be used as decorative element

**Facade**
- Fabric can be used as shading
- Sheets can be hung in a frame

**Interior**
- Fabric can be used as covering
- Sheets can be used as curtain
- Sheets can be used as decorative element

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**Construction**

- Use sheets as cladding
- Use doors as cladding/wall
- Combine doors as column
- Use half doors as shading element
- Two doors can be transformed into one table
- Doors can be perforated and used as decoration
- Doors can be transformed into storage element

**Façade**

- Can be used as beams
- Can be used as columns
- Can be used as loadbearing wall
- Can be used as a staircase

**Interlocking pallets as wall elements**

- Can be used as furniture
- Can be used as a partition wall
- Can be used as storage elements
- Can be used as a table top
- Can be used as a curtain

**Draglines**

- Can be used as columns
- Interlocking pallets as wall element

**Interior**

- Can be used as furniture
- Can be used as a partition wall
- Can be used as storage elements
- Can be used as a table top
- Can be used as a curtain
MADE TO FIT = NOT OPTIMAL FOR THE VAN GENDTHALLEN

INSPIRATION WALL FROM DOOR ELEMENTS
DESIGN PRINCIPLE

ELEMENTS BETWEEN THE EXISTING STRUCTURE

VARIANTS
Tiles stacked as walls, held in compression by wooden ring
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1:5 Ver. Detol Carpet tile
Wall & Floor

- 25mm dry screed
- 12mm rubber absorption layer
- 60mm insulation
- 130mm cross laminated timber

- gipsun board
- steel plate
- laminated beam
- screw threads
- carpet tile
Climate zones
1. Outdoor climate
2. Semi outdoor climate
3. Indoor Climate

Lighting
1. Entering of daylight through sky lights & facade openings
2. Pathways along existing construction, leaving the middle exposition spaces open for daylight
3. Raised floor in hall 5, for a direct view and connection with the outside
4. Artificial lighting placed underneath the pathway systems

Ventilation
1. Halls itself are naturally ventilated
2. The closed of functions are individually regulated, inlet and outlet shaft run under the pathways and along the construction

Firesafety
1. The height of the halls delivers a larger smoke free area. Time for escaping increased to 60 seconds
2. The original roof hoods will be reinstated to help release smoke from the building
3. FWM system; smoke and heat extraction system
4. Sprinkler system installed underneath rooftops

DUTCH DESIGN DOCK | SECTION

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CONCLUSIONS
RESEARCH CONCLUSIONS
• Most references are small scale projects
• Scenarios are representative, but only a selection
• General solutions are only an indication of the possible design directions

DESIGN CONCLUSIONS
• Building is too big to house only one function
• For this function a box in box principle was the best solution

OVERALL REFLECTION
For a more realistic design the current research should be seen as a first step, a direction. A building that will be demolished or renovated needs to be found, followed by an analysis of the exact materials and their qualities.

Implementation of the materials could have been researched earlier on in the design process.
THANK YOU FOR YOUR ATTENTION

QUESTIONS?