Redevelopment Juliana church at Heijplaat in Rotterdam
Final presentation - RMIT graduation studio
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Introduction Heijplaat

**Main urban research question**
How can the empty buildings with cultural historical value and the public space around it on Heijplaat be transformed so that the relationship between the RDM area and the old village and the relationship of the total Heijplaat and the city center of Rotterdam will be significantly strengthened?
Introduction Heijplaat: situation of Heijplaat in region

- Heijplaat isolated from Rotterdam City Center
- Heijplaat situated in harbour area
- No optimal connection with Rotterdam and surroundings
Introduction Heijplaat: situation of Heijplaat and RDM

- Former RDM Company
- Heijplaat Village build for the RDM Company
- Heijplaat Village build as 'Garden Suburb'
- Wall as border between village and company
- Heijplaat Village surrounded by harbour
- RDM Company closed in 1983

Main problems
- No relation between Village and RDM
- Decrease of inhabitants
- Therefore decrease of facilities
- Sound and pollution by harbour
- Bad connection because of isolated location

Situation of Heijplaat
Introduction Heijplaat: value assessment of Heijplaat

- Green structure as a buffer for village
- Green zone between old and new village
- Old village important, because of history RDM
- Old village important, because of Garden city principle

Value assessment of green structure

Value assessment of village

Source: Village Analysis Group

- high value
- positive value
- indifferent value
**Introduction Heijplaat: value assessment of RDM buildings**

- Dok ensemble around harbour, main buildings of RDM
- Strip of buildings as a wall
- Big scale of buildings in combination with small scale of village

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![Image of Heijplaat area with color-coded values: high value (blue), positive value (green), indifferent value (yellow).](source)

Source: Harbour Analysis Group
Introduction Heijplaat: value assessment of border

- Green border as a functional buffer between village and harbour
- Strip of RDM as a historical wall between village and RDM
- No buffer present on some parts of the village
Masterplan: Linkin’Park
Masterplan: concept - reinforce Heijplaat-region on knowledge

- Stadshaven is in the center of the Mainport, Delft and Dordrecht.

- The Clean-Tech Delta: a cluster of international companies, aimed at water, climate and energy issues.

- With our masterplan we want to reinforce the connection between the RDM and the TU-Delft.
Masterplan: concept - reinforce relation village-RDM by park

- The connection of the RDM-area and the village will be reinforced by a central green zone.
- The village will be disconnected from the harbor industries by a green buffer zone.
- Main connection (bicycle) through park.
- Park strip connected with old village facility strip.

Source: D. Kaatee, J. Van Den Brink, J. Wielinga.

Option to make bridges between the different

Water and green, the two elements for the park

Small facility pavilions in park.
Masterplan: functional overview

- Educational Program
- Conference/festival terrain
- Entrance terrain
- Dwellings
- Central park with public facilities and Educational related companies
- Village related facilities
**Main goals**

- No main roads and freight traffic on Heijplaat.
- Stimulation of bicycle usage on Heijplaat.
- Every neighborhood; a separate main access road.
- Parking in the village on private terrain.
- No car traffic on the RDM terrain, only sporadic for supply transport for the facilities.
- Improving public transport by adding tram stations and intensifying the ferry transport.
Introduction Juliana church

Main architectural research question
How can the, currently vacant, Juliana Church Heijplaat be transformed, taking into account the cultural and historical value and preservation of social function, so the church gets new meaning for the village Heijplaat?

Relevance
• Because of the secularization in the Netherlands and other Western European countries an increasing number of churches to lose their original function.
• Most church buildings are still very important for the local community. The church with its tower is for many a recognition mark and a place of remembering. (National Office for Cultural Heritage)
Introduction Juliana church: history and problem statement

1915 ‘bewaarschool’ used for religious purposes.
1924 Protestant and the Catholic church has been build,
1930 Juliana church opened
1946 Extension plans for creating two side-wings, but never executed

now Problem statement:
• Decline of church members->church was sold to Woonbron in November 2006
• now the church isn’t being maintained and used structurally.
• The Elim church and the Bonifatius church are transformed to a dwelling but there hasn’t emerged a function for this church yet.
Introduction Juliana church: urban context

- Church strong visual part of the Heijplaat community.
- Beltower strong visual orientation point.
- Streetpattern - characteristic of the ‘garden village’ principle designed by De Clercq.
Introduction Juliana church: functional overview

- The most important space is the church hall.
- All the other spaces are functionally secondary related to this main hall
- In protestant churches the pulpit has an important central position in the building.

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• All the other spaces are functionally secondary related to this main hall
• In protestant churches the pulpit has an important central position in the building.
Introduction Juliana church: functional overview

- First floor: a balcony, and a platform for the organ installation.
- The entrance of sunlight is designed functional.
- The balcony windows are also important for accentuate the position of the entrance in the facade.
Introduction Juliana church: value assessment - social and historical value

Social value
• Except for the smaller additional youth building, the church has no social function anymore.

Historical value
• Important as part of the first extension of the old garden village Heijplaat by De Clercq.
• Also as ensemble with the other 2 churches designed by the same architect it has a high value.
• According the protestant religion a church building in general has no holy value and doesn’t have to be profaned like a catholic church.
Introduction Juliana church: value assessment - construction

- No interesting, unusual or unique construction and structure elements.
- Except for the trusses, because of its interesting shape it has a positive value.
Introduction Juliana church: value assessment - interior and exterior

Interior spaces and materials
- All the interior spaces -> indifferent
- The spatial hall isn’t experienced because the lack of sunlight

Exterior composition and materials
- outlines of the tower -> iconic presence in the village.
- The outlines of the church hall -> being part of it’s former character of a church.
- The accents in the façade with lifted roofline -> showing the building’s main entrance.
- The façade materials -> very common for churches build in that time.
Introduction additional building
Introduction additional building: history

1930 Juliana church constructed
1931 beginning 1931 the additional building was finished
1945-2011 somewhere in between this building was extended with the same length extra.

- At the other two church buildings of Heijplaat the classroom is an integral part of the design.

construction site of the church in 1930

Additional building finished later in 1930
Introduction additional building: functional overview

- It is nowadays in use for the Sunday services for the remaining Reformed community of Heijplaat.
Analysis additional building: value assessment - social and historical value

Social value
- The building is now in use for church services and ehbo association

Historical value
- Part of ensemble with the church. (but not designed together)
- Relation only in some architectural elements, no physical connection between church and this building
Analysis additional building: continuation arguments

Positive
• Being part of ensemble with the church.
• Building still in use for sunday services
• Relation from this building to the church in some architectural elements; like wall materials, some window shapes and accents

Negative
• It wasn’t designed together with the church and has been build later.
• No relation from the church to this building
• No physical connection with church
• Copied architectural elements different detailed
• Little space between church and this building
• It isn’t in the original condition anymore
• Not insulated.
• It has a low architectural value
Final design Juliana church
Final design Juliana church: boundary conditions and design approach

Boundary conditions

Architectural
- Maintaining of the tower
- Maintaining of the main shapes of the south/ front facade
- Maintaining of the main shapes of the west facade
- Maintaining of the wooden construction frames
- Church hall minimal partly visible from ground floor to the roof
- More natural light has to enter the church
- New design has to fit in the surroundings of the old garden village

Functional
- New function has to be a social village function
- Church hall has to become the most important space
- Sunday services of the reformed church still possible

Design Approach
- New added volumes: not in a strong contrast with the current building, but a continuation of the current shape and rhythm.
- Contrast by using different materials and details.
Final design Juliana church: concept

Entering the village -> meeting the community

Growing model starting with main church hall.

Transition area between inside and outside

Open front facades facing the main streets

Closed back facades

Inside

Outside

Independent new shapes gable roof appearance
Final design Juliana church: concept

- Shapes with different function, dimensions and independent construction grid

archetype: gable roof  non-independent new shapes

growing phases

• Shapes with different function, dimensions and independent construction grid

archetype: gable roof  non-independent new shapes

primary

secondary

tertiary

quarternary
Final design Juliana church: urban context

- The church is situated at the entrance of the old village.
- The surrounded area, green and the public walkway, will be transformed in a community centre square.
- One main entrance, but also secondary entrances to several parts of the building.
Final design Juliana church: analysis program

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Current temporary community centre since June 2011 (for 2 years)
- card evenings
- coffee mornings
- residents meetings
- creativity evenings
- meetings Heijplaat Vitaal
- Music association (practice & concerts)
- parties

Moved:
- Neighborhood residents association
- Tenants association
- copy facility

Moved:
- EHBO-association courses and meetings

Former community centre (until December 2006) demolished in 2009

Moved:
- Cooking project
- receptions and meetings

Current playground/community centre with gym (will be demolished)
- gym for primary school
- gym for gymnastic association; 'Willen is kunnen' (500u per year)
- card nights
- sewing courses
- line dance
- cooking project
- receptions and meetings

Juliana Kapel:
- Sunday church services
- EHBO-association courses and meetings

Heijplaat former community centres
Final design Juliana church: program

**Main church space**
- Music practice and concerts
- Gym for gymnastic association
- Gym for primary school
- Gym for neighborhood
- Conferences
- Line dance
- Sunday church services
- etc.

**Meeting space**
- Meetings
- EHBO association courses
- Card evenings
- Coffee mornings
- Cooking workshops
- Sewing courses
- Parties
- etc.

**Office space**
- Neighborhood residents association
- Tenants association

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![Main space](source: http://beeldbank.hetfotoburo.nl/index.php/editie-bergen-op-zoom/62-chris-van-klinken/96123)

![Meeting, Office and supporting spaces](source: http://www.bndestem.nl/regio/bergenopzoom/8154110/Muzikanten-krijgen-de-juiste-toon-te-pakken.ece)

![Workshop kitchen & Bar](source: http://www.woonbron.nl/OverWoonbron/Actueel/Persberichten/Pages/RotterdamCirkelstadverbindtmilieumetduurzaamcommunitycentreactivity-meetings/communitycentreactivity-meetings)

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**Community centre activity - dance**

**Community centre activity - concert practice**

**Community centre activity - meetings**

**Gym for primary school in church in Breda**

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Final design Juliana church: plans

Ground floor

Main space for courses, sports, concerts, conferences etc.

Meeting space

Entrance hall

Workshop/kitchen/bar

Office

Equipment storage

Teacher room

Toilets

Toilets

Installations

Corridor space/Backstage

Ground floor
Final design Juliana church: plans

first floor
Final design Juliana church: materials exterior

- Every building part will have its own character.
- Contrast between old and new
- Roof as embracing element
- Colored glass also for shading
Final design Juliana church: materials and colors interior

- Remove roof panels⇒ show construction
- Construction with color of material
- Light materials/colors for roof and walls in church hall to reflect more natural sunlight
- Wooden floors
- Every building part will have its own accent by a different color theme

![Church interior - light interior](image1.png)

![Gym with wooden floor at St. Maxim in Trier](image2.png)

![Red as theme color for the meeting spaces](image3.png)

![Orange as theme for the routing spaces](image4.png)

![Purple/pink as theme for the bar/kitchen space](image5.png)

![Different colors in one range](image6.png)


Final design Juliana church: facades

- Roof angle; same as church main roofs and additional building.
- Every new extension has a lower height than the previous one.
- Exemption made in volume at entrance square.
- South and west facade; open facades
- East and north facade; closed facades
- South glass facades with canopy for sun shading
Final design Juliana church: facades
Final design Juliana church: main construction concept

**Truss construction with independent shapes**
- Plan lay-out freedom
- Change of function possible in future
- A lot of openings possible between shapes
- Ground floor and first floor can have independent lay-out.
- Re-use of steel possible.
Final design Juliana church: main construction scheme

- Different grid for every building part but still related to the existing grid.
- Extra horizontal beam in between some trusses for bearing the glass facades
- Rainwater outlets inside the building
Final design Juliana church: construction sections

- Independent trusses, independent foundation
- Insulated wooden roof elements
- Church insulated from the inside
- New insulated floor in church
- Roof window for natural sunlight
Final design Juliana church: construction sections

Section C-C
Final design Juliana church: construction sections

Section D-D
Final design Juliana church: climate system

- Adding new climate system
- Heating by a low temperature floor heating system
- Ventilation: mechanical with natural cooling
- Ventilation tubes hided under ground floor and in system ceiling.
- Ventilation outlet in sight only under the roof trusses
Final design Juliana church: climate system

- New climate system divided in 2 zones
Final design Juliana church: impressions exterieur
Final design Juliana church: impressions exterieur

View on the west side from the streekkraat.
Final design Juliana church: impressions exterieur

view from entrance road to the village
Final design Juliana church: impressions exterieur

view on the entrance square
Final design Juliana church: impressions interieur

entrance hall
Final design Juliana church: impressions interieur

view from stairs in entrance hall
Final design Juliana church: impressions interieur

Routing space with view inside the main church hall.
Final design Juliana church: impressions interieur

main church hall with sport activity
Final design Juliana church: impressions interieur

main church hall with concert activity
Final design Juliana church: impressions intérieur
Questions?
Concept Juliana church: details connection old new

detail 1 - connection old/new between roof and wall

detail 2 - connection old/new between zinc and slate roof
Concept Juliana church: details new roofs

detail 3 - new building parts roof tops

detail 4 - new building parts roof connections

detail 5 - new building parts corners

detail 6 - new building parts connection ground
Concept Juliana church: details new glass facades

- Detail 7 - zinc ceiling inside/outside
- Detail 8 - aluminum facade connection roof
- Detail 9 - aluminum facade connection ground floor

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Concept Juliana church: details main church space

detail 10 - new window frames, insulation and floor church hall
Introduction additional building - plan and facades

west facade

north facade

ground floor plan

south facade
east facade