

CULTURAL VALUE REPORT

## Evaluation of Cultural Value and Dilemma of Intervam Flats at Camera Obscuradreef, Overvecht



Chen Xiaoyu|4513126  
Heritage & Architecture

# Table of Content

Introduction

History Brief

Research Question

Two Original Ideas

Approach

Cultural Value, Current Situation and Dilemma

site  
structure  
skin  
service  
space&stuff

Conclusion

Design Strategies

List of Figures

References

## Title

Evaluation of Cultural Value and Dilemma of Intervam Flats at Camera Obscuradreef , Overvecht

## Introduction

After the Second World War, the housing shortage in the Netherlands was estimated around 300,000 (Thijssen , 1990). Various building systems with non-traditional-building-methods were invented and built on a large scale for the mass housing after WWII. VAM system, as one of them, was broadly applied to post-war reconstruction in Utrecht in 1960s, and has been functioning till now. However, such great amount of housing “heritage” can not well fit for the modern lifestyles and contemporary needs. The status quo requires change unless we neglect the compromise made for the living. The middle-rise housing estate located at the Camera Obscuradreef in Overvecht is very typical and exemplary as a case of Intervam building. The purpose of the essay is to understand the cultural value and dilemma of the existing Intervam housing stock so as to properly incorporate them into the design strategy for renewal and upgrade.

## History Brief

Figure 1 shows the history and visual timeline of Intervam housing block at Camera Obscuradreef Overvecht. For the housing shortage after WWII, the city council of Utrecht had believed that the Hoograven and Kanaleneiland estates would provide sufficient accommodation for many years to come, but the actual needs were far more than expected. Overvecht, which situated at the corner of the city, became the largest estate processed for the mass housing construction. In 1958, the municipality commissioned the urban planning of the estate to Bureau Wissing in Barendrecht (Kijken naar Overvecht, 2011). The design was based on the urban theory of “De Wijkgedachte” which meant to form a stable and healthy neighborhoods network thus to decentralize the city. However, it was not fully executed. The municipality began clearing the land for the seven neighborhoods of Overvecht-Zuid even before Wissing’s design was approved. To solve the urgent demands, VAM, as one of the non-traditional- building methods, was introduced by contractor Intervam N.V. and implemented on a large scale in Overvecht during 1960s. With the industrialized standardization, prefabrication and assembly system, 6 houses could be built in one day. The housing estate with middle rise Intervam portiekflats (except one with 2 storeys) at Camera Obscuradreef, Overvecht Zuid was constructed under the Nieuwe Bouwen movement. The notion “Light, Air and Space” of modern architecture movement was programmed on both urban scale and building scale. Large window, balcony, garden and generous green space in-between buildings were designed with openness and transparency indicating a pursuit of healthy and optimistic life. After the completion of

1945



Empty land in Overvecht

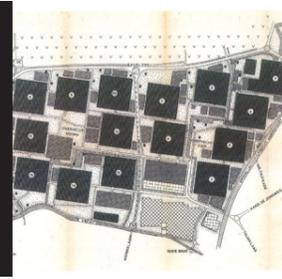


Post war increasing population in the Netherlands baby boom and migration

1958



1958 sketch design of Overvecht from architect Wim Wissing based on the neighborhood theory of "De Wijkgedachte"



1963



Factory production of VAM, a non traditional building method



Construction site of VAM system



Assembly of facade on site

1964--



1965-69 two-storey residential-commercial housing block

1973--



Open passage of one of Intervam buildings



Central square in the housing community



1965-1970 public outdoor space between housing blocks



Intervam front facade and entrance



1965 frame was in one color, probably not painted



1973-78 Vertical grid painted white; Horizontal grid painted brown; Window frames and parapet white



1973-1978 public library in Vader Rijndreef 84



1983 art sculpture by David van de Kop

1984--



1984 before the renovation: wooden window frames; Staircase with red and green/blue



1984 First renovation (wooden frames replaced by plastic)



1984 after the renovation: plastic window frames of the facade, light brown grids, gray balconies; parapets with different colors.

2008--



After 2009 the open passage on the Taagdreef was closed by the request of the residents and filled with community programs.

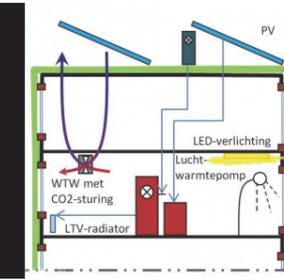


Current situation: red balconies and doors; white grid; yellow staircases; parapets with different colors; sunshade, paintwork in poor condition



2013 paintings on the wall by artist Jan is de Man and children in the neighborhood

2016--



2016 the renovation plan by the housing corporation Mitros is first applied to the 8 housings in order to test the feasibility of the sustainable Intervamflat.



Fig 1 History and visual timeline of Intervam housing block at Camera Obscuradreef Overvecht (image Source: Utrecht Archive/NAI/Mitros. (n.d.))

the Intervam flats in 1965, they have been renovated for several times, mainly dealing with the skin. (The biggest renovation was in 1984.) The demography of the estate changed from middle class to low income families and nowadays to students since the demolition plan failed in 2008. Since then, the passages and some gates were closed and the playground was fenced for security reasons. Currently, a pilot experiment of renovation is being tested on site for zero-energy sustainable Intervam flat.

From the history of the Intervam housing stock, we can see it has gone through many changes and the original quality of “Wijkgedachte” and “Light, Air and Space” has suffered from degradation. The renovations implemented to the Intervam flats decayed through time; the interventions executed to the site deprived the openness and transparency of the initial intention. To renew the dwelling estate, it is primary to find out what to keep; What to restore; What to transform; Where does the cultural value exactly lies and what is the dilemma in relation to the contemporary living conditions and changing needs.

## Research Question

Where do the cultural value and dilemma of Intervam housing blocks lie? What are the factors of the dilemma? What do they mean for the contemporary mass housing renovation?

## Two Original Ideas

### (i) De Wijkgedachte



Fig 2 (Left) Catholic version of “Wijkgedachte”; Fig 3 (Right) 1958 sketch design of Overvecht from architect Wim Wissing based on the neighborhood theory of “De Wijkgedachte”

The wijkgedachte in the Netherlands was a reaction to chaotic living conditions and the increasing anonymousness of big cities. (Doevendans and Stolzenburg 1988, p.9 ) According to this theory, a neighborhood unit with a community center would consist of 20,000 people or so. A big city would be unpleasurable to live. The idea was to build recognizable neighborhoods as a network to form a city. The new city would be the place where diverse people can live together by establishing the community. People’s lives would be prioritized around different social groups and at different scales. The urban layout of the area is often easy to read where the various facilities and social components are placed. (Fig 2)

In the publication “De stad der toekomst de toekomst der stad” of 1946, Ir. A. Bos clearly defines facilities to be present on different levels and distances of the city (family level, buurt level, wijklevel and stadsdeel level), among them certain types of green spaces (Fig 4). (Bos, 1946)

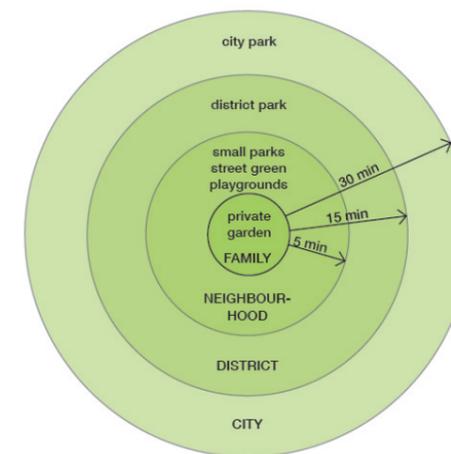


Fig 4 Bos’ wijkgedachte idea regarding green space based on Bos 1946



Fig 5 Green structure (private garden, front green and small square, playground and street green) of the housing blocks at Camera Obscuradreef

The seven neighborhoods in Overvecht-Zuid area were realized based on the idea of “Wijkgedachte” (Fig 3). The urban layout of Intervam residential block at Camera Obscuradreef was also programmed within the idea (Fig 5). The outdoor area can be defined by three different milieus,

namely a square, an inner area and the outer shell. At the square there are playground, parking space, and two-storey residential-commercial block. The design of the square was not part of the planning. But the playground equipment, a sunken lawn, some benches, trees and a parking lane were included during the construction (10 cultuurhistorisch onderzoek en ruimtelijke analyse Utrecht NaOorlogse Wijken: Overvecht, 2006). The inner areas is largely divided into private gardens and public courtyard. The outer shell consists of public green area facing the main street. Amenities and social facilities such as small shops, library and church were programmed on the site. The functional ground plan was designed with an open and preferably flexible space layout which revealed the neighborhood concept of “De Wijkgedachte”.

## (2) Light, Air and Space

The Nieuwe Bouwen architects were keen to adopt modern technologies and building materials, such as concrete and steel frames. Through the use of these techniques, they hoped to create efficient, hygienic buildings. They wanted the building to make a transparent impression, in contrast to the closed volumes of traditional architecture. Their goal was a healthy living environment with ample fresh air, sunlight and greenery space. “Light, air and space” became the slogan of the Nieuwe Bouwen movement. (Source: NAI archive)



Fig 6 (Left) Large Strip Windows Provide Ample Daylight to the Interior, approx. 1933. Photograph: NAI Collection, BIHS Archive. Fig 7 (Right) Balconies and Terrace at the Rear of the House, undated. Photograph: © Jan Kamman. Collection: Nederlands fotomuseum.



Fig 8 (Left) Balcony at the front of Intervam flat; Fig 9 (Right) Central playground at Camera Obscuradreef

Both the front and rear facades of Intervam flats have wide strips of fenestration. The facade components with large window frames were positioned in-between the load-bearing walls. A flood of natural light was admitted which contributes to the high quality of illuminance condition for all the rooms of the house. The air supply is driven through the purpose-built openings in the building envelope, including windows, doors, chimneys, shafts and trickle ventilators, therefore to guarantee abundant amount of fresh air throughout all seasons. An intensive use of the greenery space is encouraged in and around the house. Two balconies for each house and an extra spacious garden for 0-1 floor apartment open up the domestic life to the outside world, representing the notion of “space” (Fig 8).

## TRANSPARENCY

Transparency was a remarkable characteristic during the period of modern architecture movement (Fig 9). It was a symbol of a scientific age that demanded nothing less than clarity and precision, openness and honesty. (Nigel, 2003) The sign of modernity and progress was not just technical, but also ethical.

Transparency, then, was a means of revealing the truth or, at least, an honest way of living that, for the modernist, meant a rejection of Victorian clutter and ornamentation with its references to bygone eras and social status. (Nigel, 2003) Transparency as a social control lead to a healthier society with no abuse, violence and crimes. Especially after the WWII, transparency was an affirmative advocacy of a society without secrets and a way of living where “there is nothing to hide”. In addition, openness and transparency incorporated light, air and space to build up a hygienic and healthy life. It would enable us to gaze at healthiness of mind and of body. (Marcel Breuer)

## Approach

Cultural value evaluation is assimilated into a matrix which is scaled on the y-axis according to the 7 S based on 6’s system of Stewart Brand (Fig 10): site, structure, skin, service, space plan, stuff + 1’s of “story”; and different heritage values are designated on the x-axis: age, historical, artistic, commemorative, use, newness, conflict value regarding Alois Riegl’s theory (Fig 11). The matrix (Fig 12) attempts to provide the knowledge of VAM system, the history and the comprehension of values and Limitations of the Intervam housing estate on different scales.

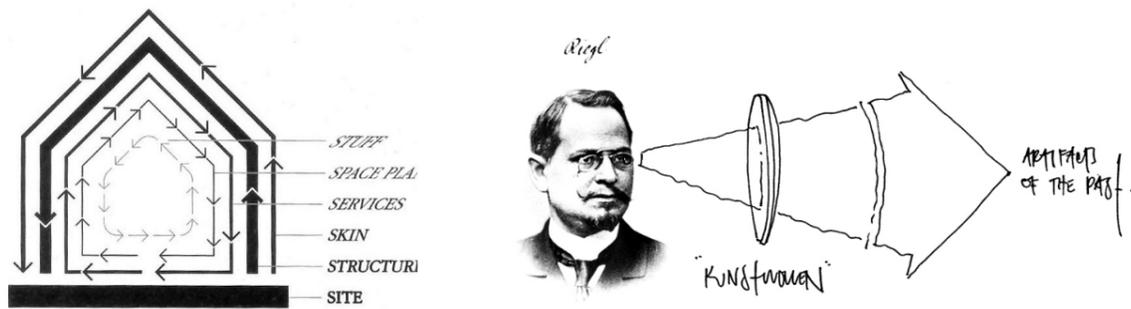


Fig 10 (Left) The 'S'-system of Steward Brand; Fig 11 (Right) Alois Riegl and the Modern Cult of the Monument

value system	Age	History	Commemorative	Artistic	Use	Newness	Conflict
Site							
Structure							
Skin							
Service							
Space plan							
Stuff							
Story							

Fig 12 Matrix of cultural value assessment

## Cultural Value, Current Situation and Dilemma

### Site:

(Cultural Value) With its spacious, open character and high accessibility, the green structure in Camera Obscuradreef was the physical representative of the historical value of "Light, Air and Space".

(Current Situation) Today, it is still a good location with commercial shops, social facilities, convenient public transportation in its surroundings and meanwhile different levels of outdoor

green spaces on the site. But for safety reasons, people closed the passage and gardens, the inconvenient route makes the spatial structure segregated, thus breeds the lack of use and the lack of maintenance of the green space. Residents do feel unsafe in the neighborhood according to the investigation (WijkWijzer 2016, Gemeente Utrecht).

(Dilemma) The open green structure contains potential use value but needs to be activated. The segregation and lack of use aggregated by the formal intervention that people did to control the public access (Fig 14). The security and privacy needs are questioning whether the original openness and transparency of the historical value are inconsistent with the contemporary living demands; for whom the green space can be accessed and used, the public, the collective or the private?

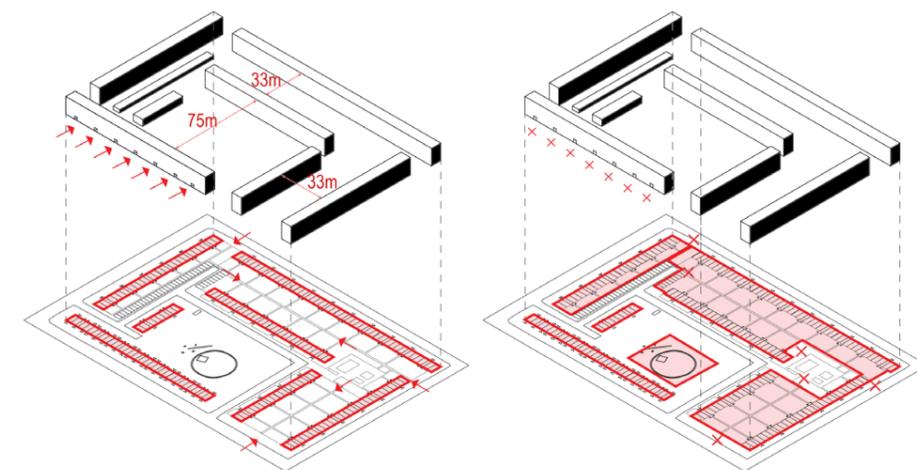


Fig 13 Cultural value and current situation analysis\_ the "Site" at Intervam housing stock, Camera Obscuradreef



Fig 14 Fences and gates set on site after 2008

### Structure

(Cultural Value) VAM structure, as the most significant characteristic of non-conventional-building method system, embodies the historical and use value, revealing the rationalization and efficient industrialization in the post-war housing construction.

(Current Situation) The VAM structure on site is still in good condition to be reused. According to the interview with Dr. ir. L.M Oorschot, it is possible to put 2 levels on top. Proper size of each bay is determined by the dimensions between load bearing walls (1B surface area =37,5m<sup>2</sup>). The structure is overall rigid but with some tolerance of flexibility within the bays. The concrete wall and floor are covered with another layer of light concrete cladding probably in order to show the structural identity but it brings about thermal bridges. The concrete floor slab is only 140 mm and without any sound proof.

(Dilemma) Technically, it is better to insulate the VAM structure with regard to the quality of reuse. In this condition, it might weaken its structural expression in the appearance. If the historical value of VAM structure really tends to be presented, it needs naked exposure. To insulate or to expose are the alternatives to choose.

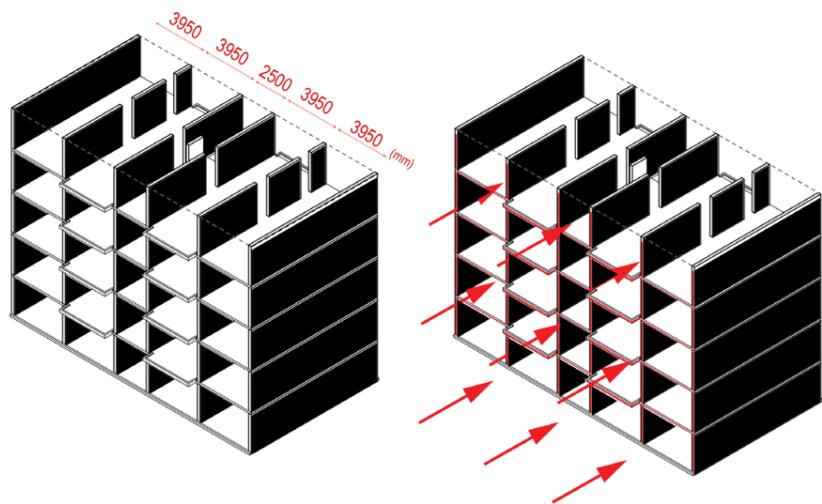


Fig 15 Cultural value and current situation analysis\_ the “Structure” of Intervam portiek flats, Camera Obscuradreef

## Skin

(Cultural Value) The concrete grid on the skin is one of the main expressive characters of VAM system. The large window and balcony are the design product presenting the historical value of Light, Air and Space.

(Current Situation) In general, the whole skin is poorly insulated, and its aesthetic value is undermined by maintenance problems. The painting falls off, resulting in feeling of disrepair of the building. The light concrete grid not only lacks maintenance but also causes thermal bridges and energy loss. In addition, the visual strength of the grid is weakened by the fragments filled into

the grid, such as the large window with bulky plastic frame (comparing to previous slim wooden frame) and parapets with falling paints. Chaotic appearance of the balcony faces pressure from exterior. It seems like an excessive and unpleasant display of the private and mundane minutiae of life. Clothes, storage, satellite dishes and even garbage clutter the small bonus space of the balcony. (Fig 17)

(Dilemma) For the concrete frame, on one hand, it should be respected for it embodies the value of VAM system; on the other hand, the material itself is thermally conductive which means higher energy consumption is needed to keep the indoor climate comfortable. For the balcony, it strongly reveals the conflict between the indoor and outdoor space, the public and private access( especially visual access). What is supposed to be in the interior appears in the exterior; what is meant to be private exposed in the public. The residents not only lack of space for privacy, but also lack control and regulation of the degree of visual access. Whether to return to the full openness of the original value requires convincing arguments against the current demand of privacy.

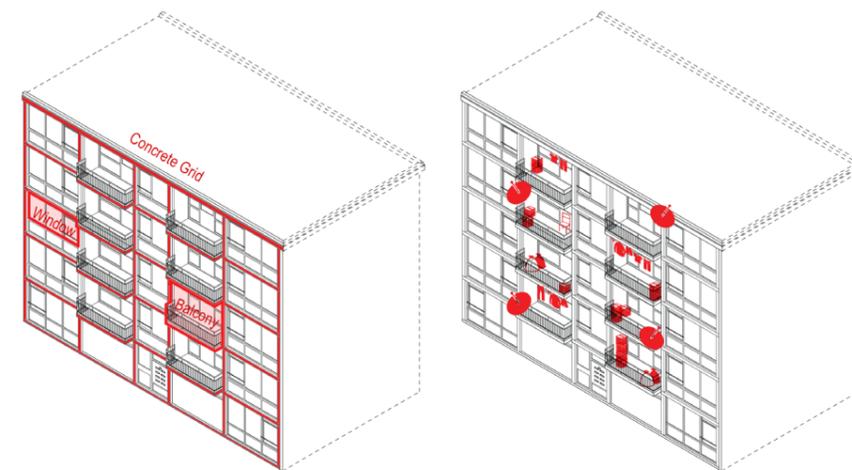


Fig 16 Cultural value and current situation analysis\_ the “Skin” of Intervam portiek flats, Camera Obscuradreef



Fig 17 Clothes, storage, satellite dishes and even garbage clutter the small bonus space of the balcony

## Service

(Value) The service in the Intervam flats has current use value, but in a low condition.

(Current Situation) There are different heating systems with poor performance and high energy bill. The ventilation is natural supplied with grills installed at the kitchen, bathroom and toilet. After 1984 renovation under the project of 'Nationale kierenjacht', small gaps in the window were closed which caused poor ventilation. Moisture and mold occurred in many households. The energy performance is in poor condition and the quality of comfort is not guaranteed.

## Space & Stuff

(Cultural Value) In terms of space, rooms with large window, balcony and garden exemplify the historical value of Light, Air and Space.

(Current Situation) Though each apartment has two balconies, the scale of them are quite small. (one with 1350mm, the other 1560mm). The location of the balcony next to bedroom turns out to be more private, thereby undermining its use (Fig 18). The bedroom with large windows on the ground floor is facing the public street and causes privacy problem. People often close the curtain to prevent passers-by from looking inside their private room, nevertheless, diminishing the quality of light. For the garden, one downside is its inconvenient accessibility. It is not connected to the active space of the apartment such as living room or dining room. In some cases, people have to go up to first floor, use stair to go down again and pass a private bedroom then they can access to the garden. The large scale of garden (15m x 8.7m) may cause difficulty in maintenance even for family group. As a big target, it is easily exposed to the air and suffer from overlooking problem (Fig 19). For the entrance of the portiek, in order to increase security and privacy, the mail box was replaced from the interior to the exterior facade. The results turned out to lose the original transparency and openness, form a harsh border and cause inconvenient use in rainy days. Moreover, some residents park their bicycles inside and narrow the space for safety reasons as well (Fig 20).

(Dilemma)--The dilemma sits in the choices between the open, transparent space, the private space or shared private space with more privacy.

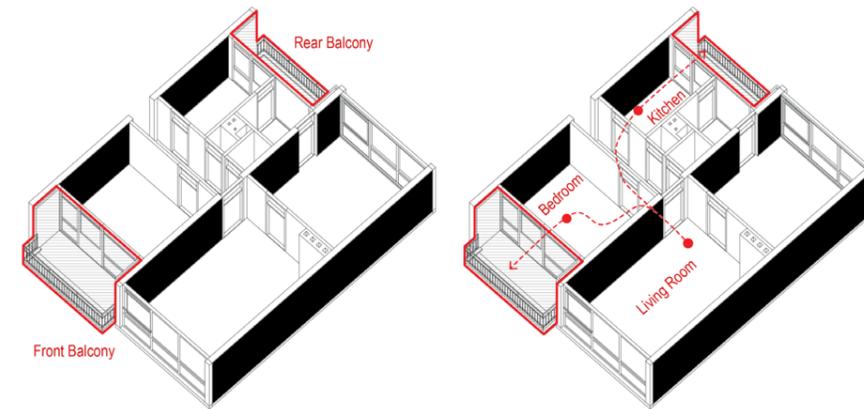


Fig 18 Cultural value and current situation analysis\_ the "Space" (balconies) of Intervam portiek flats, Camera Obscuradreef

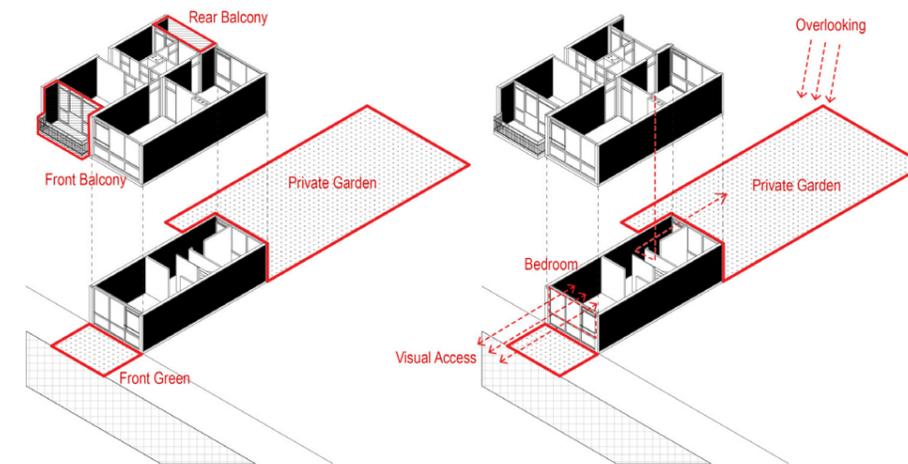


Fig 19 Cultural value and current situation analysis\_ the "Space" (front green and private garden) of Intervam portiek flats, Camera Obscuradreef

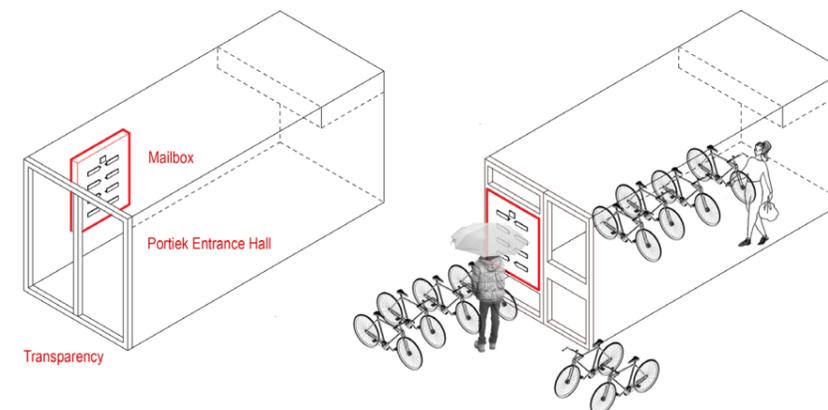
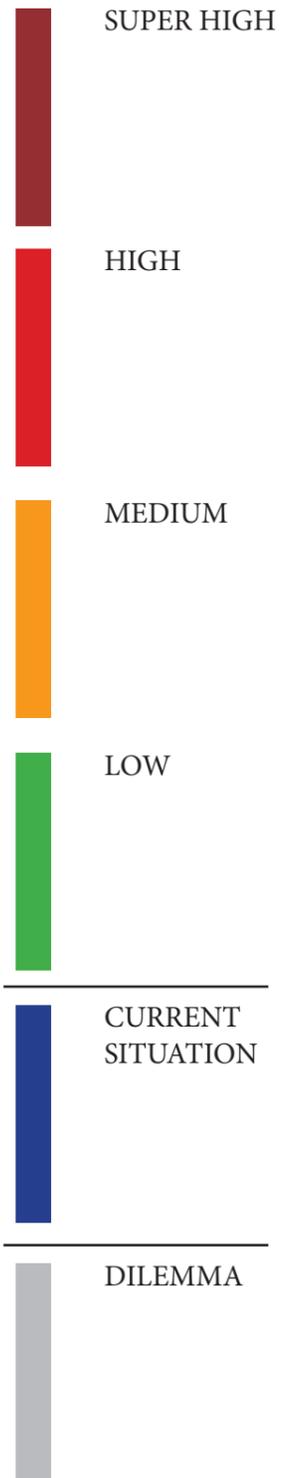


Fig 20 Cultural value and current situation analysis\_ the "Space" (portiek entrance) of Intervam portiek flats, Camera Obscuradreef

Differentiation of the Significance of Cultural Values



Value \ System	Conflict	Age	Historical	Artistic	Commemorative	Use	Newness	Current Situation	Dilemma
Site			Open green structure following the principle of "Light Air Space" & "Wijkgedachte"			open green structure		1. Inconvenient Route and Use 2. Lack of Use 3. Lack of Maintenance 4. Insecurity	openness & transparency VS privacy & sense of insecurity
Structure			VAM structure			VAM structure		1. Rigidity 2. Thermal Bridges 3. No sound proof	exposed VS insulated
Skin			Grid character; large window and balcony embody "Light Air Space"					1. Chaotic appearance 2. Lack of Maintenance 3. Poorly insulated & Energy Loss	openness & transparency VS privacy
Services								1. Limited Service Space 2. Poor Energy Performance 3. High Energy Consumption	
Space Plan			Rooms with large window, balcony and garden represent "Light Air Space"					1. Inconvenient use 2. Poor transition link between spaces 3. Lack of privacy in some space	openness & transparency VS privacy
Stuff								Lack of Storage Space	
Story								Neighborhood Quality Decay	

Fig 22 Cultural value assessment matrix (individual)



Fig 21 Current situation of the private garden at Intervam housing blocks, Camera Obscuradreef

## Conclusion of cultural value assessment

The structure and the concrete grid on the skin, as two main characters of VAM system, were the product of efficiency and rationalization in post-war mass housing reconstruction. The layout of open green structure represented the idea “Wijkgedachte”(regarding green space). Large window, balcony, garden and generous green space in-between buildings were designed with openness and transparency, revealing historical value of “Light, Air and Space” in modern architecture movement. With the historical and use value, they can be improved and upgraded for the future.

CULTURAL VALUE	VAM SYSTEM	“DE WIJKGEDACHTE”	“LIGHT, AIR AND SPACE”
CHARACTER	Concrete Structure Concrete Grid	Green Space	Large Window Balcony Garden Open Green Space
CURRENT SITUATION	Lack of Technical Qualities (eg Comfort and Maintenance)		Lack of Use and Safety
DILEMMA	New Demands VS Old Lifestyles		Privacy VS Openness & Transparency

Fig 23 Conclusion\_cultural value, current situation and dilemma of Intervam housing blocks, Camera Obscuradreef

In the meanwhile, the analysis also reveals two pairs of conflicts: new demands vs old lifestyles; privacy vs transparency.

VAM system created more than half a century ago fit the lifestyles very well at that time. But the quality of living advances with time and new demands emerges in accordance. With respect to contemporary living requirement, VAM system lacks of technical qualities. People nowadays ask for interior comfort in terms of light, acoustic, air, thermal, humidity; low energy and maintenance cost in a long run, etc. Although the two notions (“Wijkgedachte” and “Light, Air and Space”) were implemented with a certain quality and quantity, but the quality also decays after a few decades.

The dilemma lies between transparency and privacy. Privacy is not just a case of retreating behind closed doors. It is conceived of as an interpersonal boundary process in which a person or group regulates interaction with others. (Altman 1975: 6). In other words, it is a selective control of access to the self or to one’s group’ (Altman 1975: 18). This definition of privacy is all about degree of access. (physical, visual, auditive access & info access ). The process can be supported by a physical environment in which territories for residents, visitors and passers-by can be identified. (Sundstrom and Altman, 1974) In the case of Intervam flats, it lacks appropriate privacy degree in the green space including balcony and private garden, which retards a pleasure use for the residents. When the physical environment lacks of use and alters for the worse, people do not show respect and care about it. In the end, a poor presence of environment would breed a sense of insecurity.

In conclusion, these existing elements which embody the values need something extra with privacy regulation so as to revitalize their use value and fulfill the quality of living.

CULTURAL VALUE	VAM SYSTEM	“DE WIJKGEDACHTE”	“LIGHT, AIR AND SPACE”
POSITION	Concrete Structure <i>REUSE</i> Concrete Grid <i>RENOVATE</i>	Green Space <i>ACTIVATE</i>	Large Window <i>TRANSFORM</i> Balcony <i>TRANSFORM</i> Garden <i>TRANSFORM</i> Open Green Space <i>ACTIVATE</i>
	<i>OFFER SOMETHING EXTRA TO IMPROVE</i>		<i>OFFER RESIDENTS PRIVACY CONTROL</i>
DILEMMA	New Demands VS Old Lifestyles		Privacy VS Openness & Transparency

Fig 24 Position to improve and update Intervam housing blocks at Camera Obscuradreef

## Design Strategies

### 1. (Urban scale) Activate the Open Green Space

Apply privacy zoning to the open green space. (According to Machiel J. van Dorst , Privacy zoning is a system of zones with different meanings for social interaction. The zones are physically identifiable and socially accepted because they make the situation clear to everyone) Define what is public, what is collective and what is private and make the territories legible and easy to be identified.

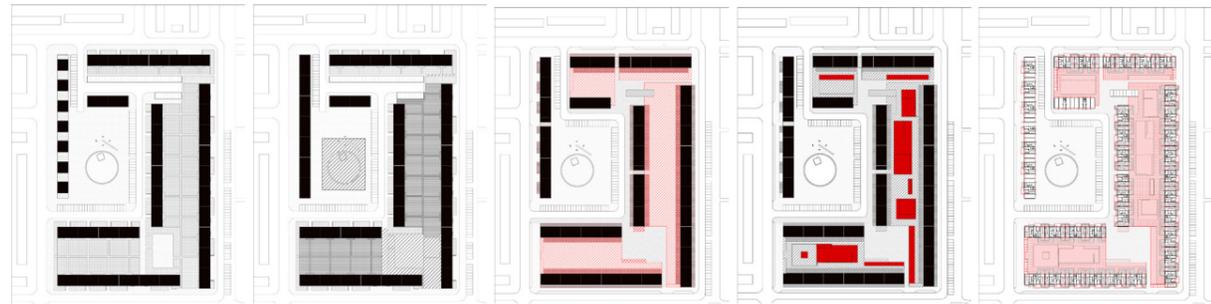
### 2. (Building and Zone scale)

**Transformation of 1-4 floor apartment:** Interiorize one balcony and privatize the other with extension and privacy control.

**Transformation of double-floor apartment:** Separate the existing apartment into two, the first-

floor apartment and the ground floor 1-bay house. Define and design the transitional zone (entrance and garden) between the public and the private.

**Transformation of portiek entrance zone:** Design entrance zone with transition and proper function arrangement



APPLY PRIVACY ZONING TO ACTIVATE GREEN SPACE



EXISTING GROUND FLOOR PLAN



NEW GROUND FLOOR PLAN



EXISTING FIRST FLOOR PLAN



NEW 1st-4th FLOOR PLAN



EXISTING 2nd-4th FLOOR PLAN



NEW 1st-4th FLOOR PLAN



NEW 1st-4th FLOOR PLAN

### 3. Renovation of SKIN

The strategy respects the concrete frame and applies new concrete grid with insulation. The material thermo-steen provides qualities for durability and maintenance as well as natural and aesthetic features. The brickwork on the ground floor takes a role in the privacy zoning and adds richness to the composition of the facade and helps to construct a nice physical environment. The skin of balcony is performance-driven design which dynamically changes with the residents' control.



ORIGINAL PORTIEK FACADE



NEW PORTIEK FACADE WITH BALCONY FULLY CLOSED



NEW PORTIEK FACADE WITH BALCONY FULLY OPEN

## List of Figures

- Fig 1 History and visual time line of Intervam housing block at Camera Obscuradreef Overvecht (image Source: Utrecht Archive/NAI/Mitros. (n.d.).)
- Fig 2 Catholic version of “Wijkgedachte”
- Fig 3 1958 sketch design of Overvecht from architect Wim Wissing based on the neighborhood theory of “De Wijkgedachte”
- Fig 4 Bos’ wijkgedachte idea regarding green space based on Bos 1946
- Fig 5 Green structure (private garden, front green and small square, playground and street green) of the housing blocks at Camera Obscuradreef
- Fig 6 Large Strip Windows Provide Ample Daylight to the Interior, approx. 1933. Photograph: NAI Collection, BIHS Archive.
- Fig 7 Balconies and Terrace at the Rear of the House, undated. Photograph: © Jan Kamman. Collection: Nederlands fotomuseum.
- Fig 8 Balcony at the front of Intervam flat
- Fig 9 Central playground at Camera Obscuradreef
- Fig 10 The ‘S’-system of Steward Brand
- Fig 11 Alois Riegl and the Modern Cult of the Monument
- Fig 12 Matrix of cultural value assessment
- Fig 13 Cultural value and current situation analysis\_the “Site” at Intervam housing stock, Camera Obscuradreef
- Fig 14 Fences and gates set on site after 2008
- Fig 15 Cultural value and current situation analysis\_the “Structure” of Intervam portiek flats, Camera Obscuradreef
- Fig 16 Cultural value and current situation analysis\_the “Skin” of Intervam portiek flats, Camera Obscuradreef
- Fig 17 Clothes, storage, satellite dishes and even garbage clutter the small bonus space of the balcony
- Fig 18 Cultural value and current situation analysis\_the “Space” (balconies) of Intervam portiek flats, Camera Obscuradreef
- Fig 19 Cultural value and current situation analysis\_the “Space”(front green and private garden) of Intervam portiek flats, Camera Obscuradreef
- Fig 20 Cultural value and current situation analysis\_the “Space”(portiek entrance) of Intervam portiek flats, Camera Obscuradreef
- Fig 21 Current situation of the private garden at Intervam housing blocks, Camera Obscuradreef
- Fig 22 Cultural value assessment matrix (individual)
- Fig 23 Conclusion\_cultural value, current situation and dilemma of Intervam housing blocks, Camera Obscuradreef

Fig 24 Position to improve and update Intervam housing blocks at Camera Obscuradreef

## References

- Elk, R.S.F.J. van, H Priemus, and Research-Instituut voor de Woningbouw (Delft). 1971. *Niet-Traditionele Woningbouwmethoden in Nederland*. 2E dr. Stichting Bouwresearch, 26. Alphen aan den Rijn: Samsom.
- Brand, Stewart. 1994. *How Buildings Learn : What Happens After They'Re Built*. New York, NY: Viking.
- Alois Riegl, 1903. *The Modern Cult of monuments. Its essence and development*
- Thijssen, C. C. F. 1990. *Technische kwaliteit van etagewoningen: D.I.B.* Delft: Delftse Universitaire Pers.
- Connolly, Maeve., Lonnie van Brummelen, Catja Edens, and Gerard Forde. 2011. *Kijken Naar Overvecht : De Naoorlogse Woonwijk Anders in Beeld Gebracht = Looking at Overvecht : Other Ways of Picturing the Post-War Housing Estate*
- CBS. (2016, September 16). *Aardgas voor bijna 80 procent op*. Retrieved from <https://www.cbs.nl/nl-nl/nieuws/2016/37/aardgas-voor-bijna-80-procent-op>
- Doevendans, K., and R. Stolzenburg. 1988. *De wijkgedachte in Nederland; gemeenschapsstreven in een stedenbouwkundige context*. Eindhoven: TU Eindhoven.
- Wal, Harmen van de, Machiel van Dorst, Theresia Leuenberger, Esther Vonk, and Evelien van Vugt. 2016. *Privacyscript : De Invloed Van Architectuur Op Sociale Interactie in Woongebouwen*. Bussum: Uitgeverij THOTH.
- Van Dorst, Machiel J. 2005. “Spaces, Spatiality and Technology.” Essay. In *Privacy Zoning : The Different Layers of Public Space*, 97–116. Dordrecht : Springer Netherlands. doi:10.1007/1-4020-3273-0\_8.
- The Burra Charter, 1981, [http://australia.icomos.org/wp-content/uploads/BURRA-CHARTER-1999\\_charter-only.pdf](http://australia.icomos.org/wp-content/uploads/BURRA-CHARTER-1999_charter-only.pdf) [Accessed 22-8-2014]
- Nigel Whiteley, 2003. Intensity of Scrutiny and a Good Eyeful Architecture and Transparency. *Journal of Architectural Education*, 56: 8–16. doi:10.1162/104648803321672915
- Marcel Breuer, “Metal Furniture (1927),” in Tim and Charlotte Benton and Dennis Sharp, eds., *Form and Function* (London: Crosby Lockwood Staples, 1975), p. 226. Marcel Breuer, “Metal Furniture and Modern Accommodation (1928),” in *50 Years Bauhaus* (London: Royal Academy, 1968), p. 109.