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AIREYHOUSING

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*A new perspective for
the middle-class
in Amsterdam.*

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Cultural Value

Re-Housing

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7 december 2017

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INTRODUCTION

The graduation studio Rehousing is part of the chair Architecture & Heritage that deals with the preservation and renewal of existing architecture. The chair is shaped by three fundamental aspects: *architectural design*, *building technology* and *cultural value*. This report addresses the latter and describes which historical values are present in the Airey-strip in Amsterdam.

In order to organise all the values among the different layers of the project, the ideas of Stewart Brand and Riegl were used as guides. These values are placed in an organised scheme, the CultMatrix that can be found in the attachment of this report. Stewart Brands concept of 'How Buildings Learn' in which he divides a building in six different layers are placed along the y-axis while Riegl's values: Age, Historical, Artistic, Commemorative, Use and Newness are placed along the x-axis. Also the Conflict, Dilemma and Nostalgia were added to cover every aspect of the project.

The CultMatrix provided guidance for this paper by describing each layer of the project with justifications of the assigned values. Together they shape the cultural value statement on the Airey-strip.

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* The CultMatrix comes along with an indication of importance. High (red), medium (orange) or low (green).

POST-WAR MASS HOUSING

The track of Rehousing is specifically focussed on the housing stock that was created in the post-war reconstruction period that is also known as the 'wederopbouw'. Although housing shortages started to exist since the beginning of the twentieth century, the war made it even worse, especially with the baby boom on the outlook.

The traditional construction systems could not provide a solution in the desperate need for housing since only a few skilled construction men were left after the war and material was scarce. The extensive housing shortage called for new construction systems that could be built on a very large scale and in a much shorter construction time compared to the traditional systems.

The Dutch government started to subsidise the development of several systemised construction-systems because of this. In between 1947 and 1957 a staggering amount of 360 constructions were reported of which 60 were tested.¹ What all of these construction systems had in common was that it were very pragmatic and rational systems that were prefabricated.

The studio provided three projects that were built in one of these systems. The Airey-strip in Amsterdam was one of these cases and forms the main subject of this cultural value paper.



Image 1. The Airey-strip, 1952 (Beeldbank Amsterdam)



Image 2. Intervam Utrecht, 1965 (Utrechts Archief)



Image 3. Era, Rotterdam 1965 (rotterdamwoont.nl)

1. Messchaert, Z. et al, (2004). Pracht in prefab, Het nemavo-aireysysteem in Amsterdam, Zuidam en Uithof, Utrecht. Amsterdam: Amsterdamse Raad voor de Monumentenzorg

LIGHT, AIR & SPACE

The post-war reconstruction period is known for its extensive housing shortage. But those shortages started to exist since the industrial revolution started by the end of the nineteenth century. At the time, many households moved to large city centres and ended up in rather poor quality housing. Most of them consisted of large families who lived in small spaces and in an unhealthy living environment.

The unbearable circumstances that were created led to the housing act of 1901 in which the need for good quality housing was regulated for the first time. This was a great breakthrough since it influenced the way of designing for architects and urban planners. A great example were the modernist who developed three fundamental aspects in order to come to a healthy living environment. These three fundamental aspects were: Light, Air and Space.

Instead of dark spaces, did families started to live in light and bright interiors. This was reached by the use of large window frames, but also an optimal orientation of the open building blocks improved the exposure to (day) light. Instead of a dirty and unhealthy environments, outdoor space (air) was found important to relax. And lastly, each program needed to have enough space to create clarity. These fundamentals express the idealistic thinking of the modernist and were characteristic for the post-war reconstruction period.



Image 4. Light, Air and Space. Retouched image. (Beeldbank Amsterdam)

SITE

The Airey-strip is located in Nieuw-West that was part of the General Expansion Plan of Amsterdam (AUP). Cornelis van Eastern - chairman of the CIAM from 1930 to 1947 - designed the urban plan according to the modernist ideals light, air and space in 1934. The plan had to react on the extensive population growth caused by the industrial revolution. For Amsterdam it meant that its population nearly tripled between 1865 and 1923.²

Eventually, It was not until after the war when the construction of the AUP started. When the first neighbourhoods were realised in the 50's, they were considered as one of the most popular neighbourhoods of Amsterdam and were widely popular among young family households. Most households had young children who dominated by the scenery on the street. This nostalgic image of playing children drastically changed when most neighbourhoods fell in decay and got subject to large-scale demolitions.³

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The area surrounding the Airey-strip has hardly been changed however. Because of its authentic condition, the neighbourhood was assigned as protected townscape and 'open-air' museum in 2007. The modernist philosophy of having a lot of outdoor space and living in green environment is thereby still visible. This green character forms an important part of Nieuw-West's identity, which becomes even more clear when comparing the green structures with those of the city centre (photo). Important elements are the greenbelts that connect the courtyards, parks and playgrounds. Hereby, one has an ongoing experience of greenery and shapes the green character Nieuw-West is known for.

On the other hand, the Amsterdam municipality is struggling with keeping up with the maintenance while the courtyards in between the Airey-strips - that are property of Eigenhaard - were closed for public and the residents. The layout of the courtyards, by famous garden architect Mien Ruys, remained roughly untouched. Ruys used a wide range of species that were placed along the borders of the courtyard to shield

the private gardens (photo). The trees and bushes have fully grown and indeed provide the the gardens from enough privacy. I believe that they even provide too much privacy since they completely block the view from the private gardens. In case of Jaruzalems courtyards - a neighbourhood in Amsterdam also designed by Ruys following the same principles - the fully grown bushes led to higher rates of burglary.⁴ And also the sightlines through the courtyard itself, which were essential to look into the neighbourhood, are mostly blocked by trees and bushes.

Therefore, the sightlines through the courtyard need to be improved as well as mitigating the borders between public and private. By doing so, the experience of the angled the building strips - which make the Airey-strip monument worthy - is strengthened. But to in order preserve the principles of Van Eesteren and Ruys, changes have to be made.

Another value that can be assigned is the commemorative value as the street names are named after former members of the Dutch resistance during WWII. The street tags come along with a brief explanation of the persons role while in the resistance.

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2. Oudenampsen, M. (2012, April 3). Retracing the Garden City. Retrieved from <https://merijnoudenampsen.org/2013/04/03/retracing-the-garden-city/>
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 5. *Ontstaansgeschiedenis van Eesterenmuseum*. Retrieved from: <http://vaneesterenmuseum.nl/wp-content/uploads/2014/07/Ontstaansgeschiedenis-Van-Eesterenmuseum-versie-zonder-opeg-26-11-2011-link-naar-v-oostel-nog-inactief1.pdf/>



Image 5. The General Expansion plan, 1934. Retouched image. (Van Eesteren Museum)



Image 6: Cornelis van Eesteren (Van Eesteren Museum)



Image 7. Density: Nieuw-West vs City Center Amsterdam (own image)



Image 8. Public Greenery: Nieuw-West vs City Center Amsterdam (own image)



Image 9. Courtyard surrounded by trees and bushes (own image).

STRUCTURE

The Airey-strip was built in 1952 using the Nemavo-Airey system. It was constructed as 'stacked tables': a load-bearing facade of concrete columns (table legs) and timber floors (table leaf) that were supported by steel trusses (Image 9). The load-bearing facade shaped an open space plan with only one fixed column in the middle of the plan. The structure clearly represents the spirit of time as it was composed by small and light-weight elements. Thereby, a lot of costly material was saved and could be constructed in a much shorter construction time. Besides, it made it possible that every element could be carried and assembled by two men. This was needed since only a few skilled construction men were left after the war.

The core structure has remained in good condition after a period of sixty-five years and is a valuable asset for reuse. Besides, the cavity in between the floor trusses and load-bearing columns pose opportunities for applying insulation and thereby improve the building climate.

ADD

For transformation, it is not needed to stick with the same philosophy of only using light-weight elements and being rational as much as possible.

Compared to other post-war systems, Airey is limited in altering the structure due to its minimal dimensions. However, the structure creates an open space plan that has a lot of use value.



Image 5. The General Expansion plan, 1934. Retouched image. (Van Eesteren Museum)

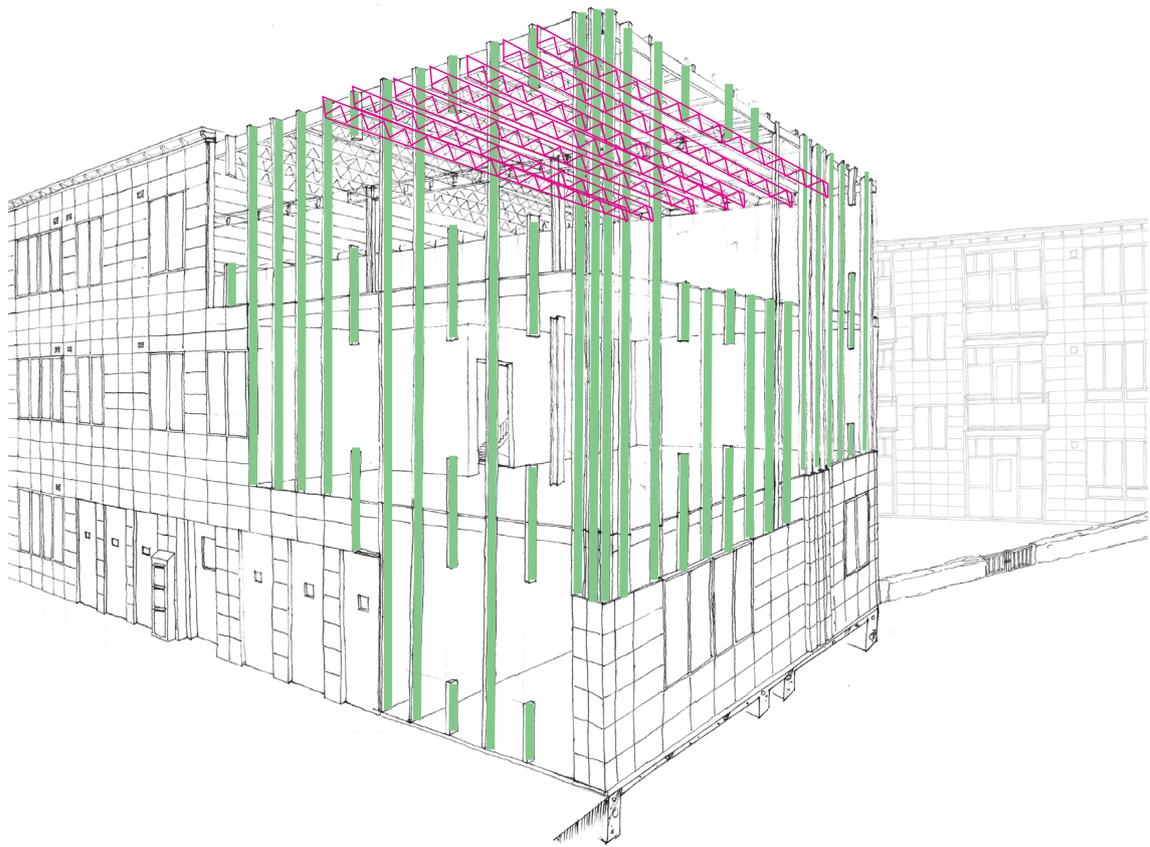


Image 9. Structure principle (own image)

SKIN

The skin is arguably the most important feature of the Airey-strip. It consists of a characteristic grid - that is composed by rough concrete tiles - in which all elements such as the windows, balconies and doors are placed (Image 13). Not only was this was utterly efficient for assembly, it also saved a lot of valuable construction time. The rational approach of constructing led to a monotonous and flat appearance, which became characteristic for post-war architecture, but was not appreciated by the architect:

“Een moeilijk punt is dat de gevels zo vlak zijn en het geheel daardoor als uit een karton gesneden lijkt.”⁶

The architect, Johannes Fake Berghoef was responsible for the Airey-strip and all other Airey buildings constructed in the Netherlands. He was trained as a traditional architect which puts his disapproval in perspective since the system left little space for him to design. Still he managed to include some details that would reflect his background and which gave the building strips a remarkable eclectic look. For Berghoef these details were essential since they mitigated the continuity of the monotonous appearance. Also, the balconies and drainage pipes were used in the same light and are therefore important elements while transforming the strips.

Also the windows play an important role in shaping the rational image of Airey buildings and the Airey-strip. The window frames used for the Airey strip were made of slender profiles of steel that strengthened the lining of the grid. However, although the system left little space for Berghoef to design, he used wide range of different windows for his other Airey buildings (foto). His first Airey buildings were equipped with steel window frames that were surrounded by thick white frames. These additional frames gave strong contrast between the grey tiles and windows but caused for troubles while manufacturing. Since the system was constantly subject to improvements in terms of rationalisation, they were not used for the Airey-strip anymore (image 14 &

15). To the displeasure of Berghoef of course:

“Constructief betekende dit winst, esthetisch evenwel was er naast winst ernstig verlies, omdat het witte kozijn tussen de grijze muur en het stalen raam verloren ging. De toch al zo vlakke gevels verloren het laatste greintje plastic bij de ramen..”⁷

Also the original residents did not appreciate the image too much. Due to the grey concrete the buildings did not seem finished, which is why Berghoef proposed to paint them white.⁸ The high maintenance costs prevented this from happening. Only years later, Eigenhaard painted half of the building strips. However, their current renovation is restoring these white strips back to its original grey appearance. According to Eigenhaard, the majority of the residents was in favor of keeping the white appearance but the concrete grey appearance is considered monumental nowadays.

The skin of the Airey-strip deserves careful consideration while transforming. Especially considering already half of the Dutch Airey buildings (8500 in total) have been demolished or renovated. Most renovations did not take the original aesthetics into account (see examples) while on the other hand the current renovation by Eigenhaard is aiming to restore the buildings to its original appearance. It is my belief that both methods will not contribute in improving the building in such way that they will last for another decade. In order to do so, the building strips need a modern interpretation of the key characteristics of the skin. By doing so, the rational image is preserved while the buildings are made attractive for new family households.

6. Berghoef, J.F., De N.-A. woningen, Forum, 6 (1951)10, p. 268

7. Berghoef, J.F., De N.-A. woningen, Forum, 6 (1951)10, p. 268

8. Teijmunt, I. Sorgedragter, B. (2012). De Dobbebuurt 1952-2012. Amsterdam, The Netherlands: Uitgeverij Bas Lubberhuizen. P49.



Image 10. Current image of the Airey-strip (own image).



Image 12. J.F. Berghoef (NAi)



Image 13. Traditional detailing of elements (own photos)

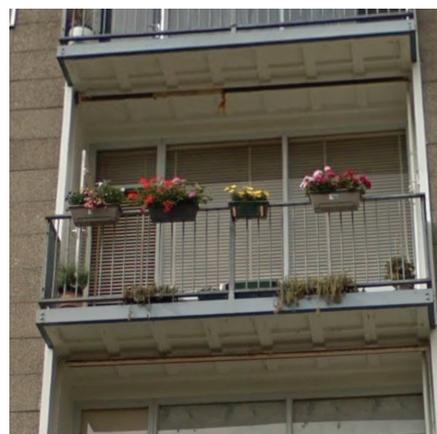
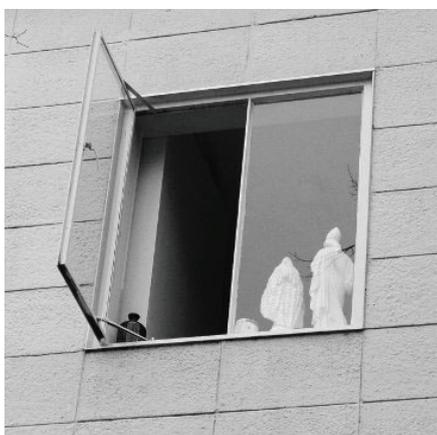
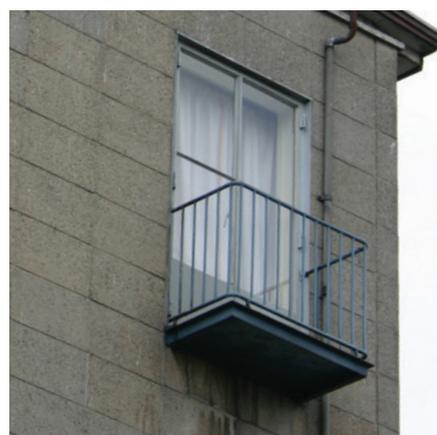
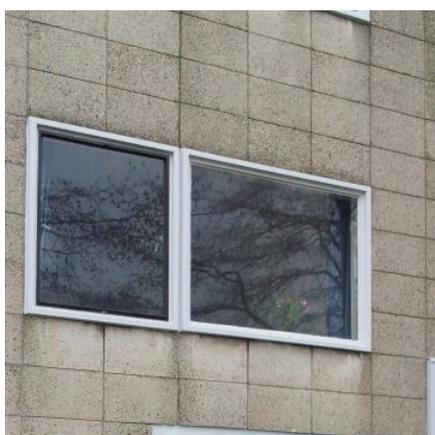
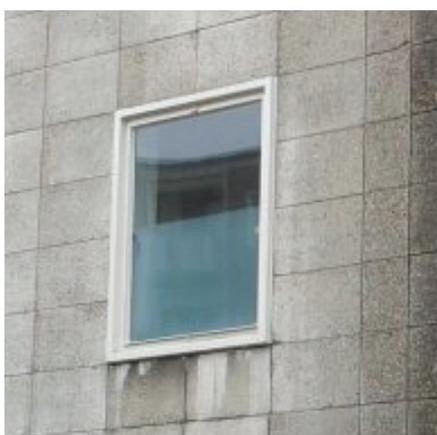
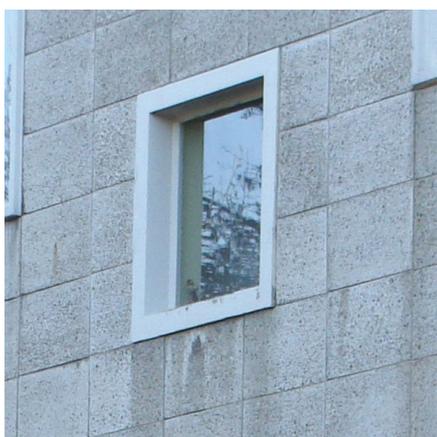


Image 14. Series of windows / balconies (multiple sources)

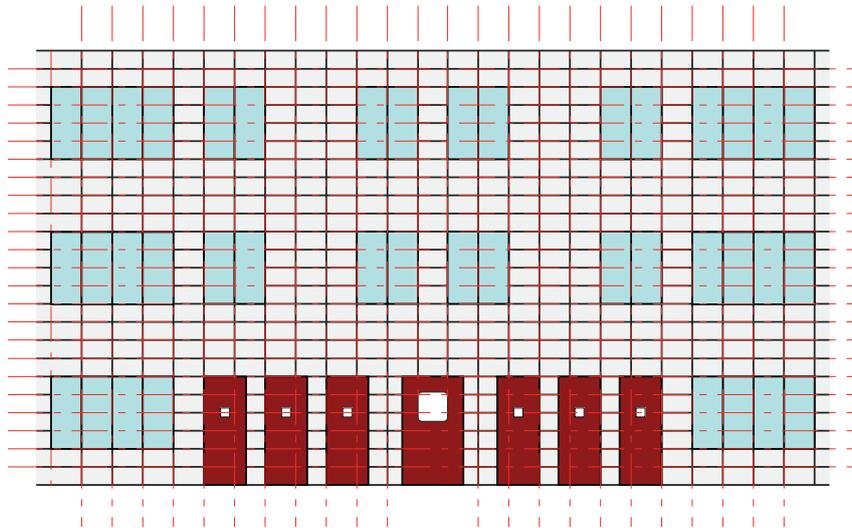
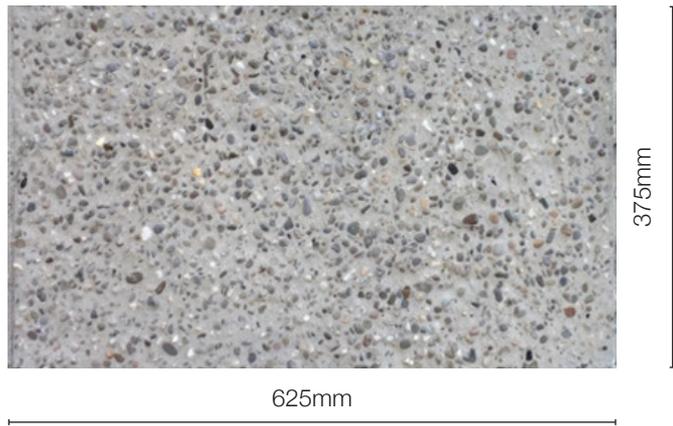


Image 15. Series of windows / balconies (multiple sources)

SERVICE, SPACE PLAN & STUFF

SERVICE

The Airey-strip embodies little to no value in terms of services. When the buildings strips were constructed they were provided with coal-heating and made use of natural (cross) ventilation. Some strips have been renovated in the past and were provided with central heating and mechanical ventilations, but do not assign any value. The one thing that bears value is the traditional chimney, but is more related to the aesthetic values of the skin.

SPACE PLAN

The Airey-strip consists of 13 three-story buildings strips with 6 or 7 apartments per floor. The apartments of either 41m² or 62m² were considered huge at the time. The facade as load-bearing structure created a flexible space plan, that offered space for a whole family. At the time it was a strong contrast between the old suburbs of the 1920's and the modern apartments of the early 1950's.

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To get the most out of your home, one had to make efficient use of their interiors. Foundation 'Goed Wonen' promoted the use of modern interiors. By doing so they educated Dutch society on how to make use of a space plan. Just like the Modern Movement, the founders of Goed Wonen were very idealistic; better living contributes to a better society. As the modernist advocated for light and spacious interiors, it resulted in efficient space plans with light-weight and slender furniture.

In terms of values does the space plan only bear use value due to the open space plan. It shows opportunities in changing the program and/or changing the configuration of spaces i.e. merging horizontally or/and vertically. By doing one has to follow the original grid that might pose some dilemmas.

STUFF

The Airey strip bears little value when it comes to stuff. Only the handrails of the communal staircases reflect the traditional craftsmanship of the 1950's. Although, aesthetic value can be assigned to the detailing of the handrails, it is not important for the overall image of the post-war reconstruction period.

STORY

The Airey-strip was constructed in the Nemavo-Airey system in 1952. This post-war construction system was redeveloped based on the British Airey system by Sir Edwin Airey. Since the British version was typically used to construct (military) sheds it had to be redeveloped to meet the Dutch standards. H.T. Zwiers and J.F. Berghoef, both architect and professor at the TU Delft, were appointed to do so. According to Berghoef, the system had to be improved in terms of prefabrication and in rationalising certain details. After the redevelopments in 1947 the system was called Nevamo-Airey system, named after the abbreviation of 'Nederlandse Maatschappij voor Volkshuisvesting' (Dutch Society for Public Housing).

The system was constantly subject to improvements in terms of rationalising details for prefabrication. This is reflected by the fact that measurements were fixed for every project. Nevertheless, the system could eventually be used on different scales of housing i.e. single-family housing, walk-up stairs apartments and even high/mid-rise apartment flats.

The Airey-strip is part of the Van Eastern Open-Air museum, an area that is assigned as protected town-scape in 2007 due to its untouched appearance. It expresses the rising appreciation of post-war architecture and urban planning, and that the post-war reconstruction period is part of an important period in Dutch housing history.

CONCLUSION

The Airey-strip bears two significant values that are important. First of all, the AUP has cultural value as it represents the modernist ideals: Light, Air and Space. The progressive and idealistic thinking was characteristic for the spirit of time, and showed qualities that were first introduced in the history of Dutch housing. Only open buildings blocks were used in order to provide an optimal orientation towards the sun, unlike the closed building blocks that were used inside the ring. Also the abundance of public playgrounds, parks and greenbelt are characteristic features and are still valued by the current residents. Therefore, the open character needs to be preserved and should not be used as densification. In line of this, the footprints of the building strips are also important to preserve the open character of the area. Especially since the slanted parcelling of the Airey-strip is remarkable when looking at the other types of open parcelling.

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The second value is imbedded in the key characteristics of the skin. The skin represents the extensive need for new housing due to its monotonous appearance as a result of developing a systemised construction system that could be built in a very short construction time and saved a lot of material. Hereby it is a clear example of one of the systemised construction systems that were subsidised and developed after the war. Since post-war architecture is an important part of Dutch housing history, this characteristic appearance deserves to be preserved. Especially considering that half of the Dutch Airey buildings have been demolished or renovated (sometimes becoming unrecognisable).

LITERATURE

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