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Refurbishment Report

Mon 31st Aug 2020



How Remodelling Can Extend a Building's Lifespan



Photos: Regionaal Historisch Centrum Eindhoven (published by Sleding) / Evabloem (right)

Article: Ben van Berkel

Circularity and sustainability are some of the many buzz words used in architecture and design today. From the design process, to the selection of materials, through to the performance of the completed building – we architects are increasingly concerned with reducing the carbon footprint and the impact that our buildings may have on the environment. As an integral part of UNStudio's design

philosophy, we design new buildings and city plans that are resilient and futureproof. By making our designs as flexible as possible, and as multifunctional and adaptable as possible, we aim to maximise the lifecycle of buildings.

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We are very much aware however that our work doesn't stop with the completion of a building. The role of architects is constantly changing and our responsibility goes beyond the laying of the last stone. Post-occupancy services are increasingly becoming an integral part of the architectural practice, with digital technology enabling clients to measure and manage the actual performance of their buildings - and to understand and adapt them to the needs of their end users.

Worldwide impact

The impact of the building industry on our climate also forces us to think about new ways to remodel, restructure and repurpose existing buildings. It's an approach that can be utilised for buildings that are either nearing the end of their lifecycle, or have become 'outdated' - due to changing user needs and habits, new insights from data or scientific research, or as a result of new tenant requirements. As you will see in this report, this was the case for the lobby of the UNStudio Tower in Amsterdam. Other examples include our complete remodel of the Xintiandi Plaza shopping centre in Shanghai, and the Talee Star Place in Kaohsiung, Taiwan, where we renewed the interior floors, adapting the retail space to the changed demands and needs brought about by the digitalisation of the consumer market.



Click on image to play the video

Making a difference

From a sustainability perspective, we are increasingly aware that remodelling, renovation and retrofitting in general can be a powerful means to make a difference, especially in high-density cities in the US and Asia, where space is limited and extremely expensive. We also notice a change of approach in China towards the redevelopment of cities. Instead of demolishing existing buildings and being forced to relocate citizens, the central policymakers are gradually looking into new and more economic ways to redevelop existing urban areas.

Our most recent refurbishment projects

In light of these emerging tendencies, we would like to present here some of the refurbishment and renovation projects that we recently completed in Asia and the Netherlands. In addition to the buildings mentioned above, in Amsterdam, we remodelled the facades of two flagship stores in one of most expensive shopping districts in the city. We also recently completed the remodelling of a bank building in the southern Dutch city of Eindhoven. And last but not least, we carried out a complete retrofit and upgrade of the Hanwha HQ in Seoul, Korea. The interior of this large office building underwent a metamorphosis, while the facade was completely refurbished and transformed into an energy producing surface.

[Take a look at all of our remodelling, repurposing and retrofit projects here.](#)



Photos - Hanwha/ Rohspace

'Renovating and retrofitting is one of the most sustainable ways to enhance the urban environment'

UNStudio's retrofit of the [Hanwha Headquarters](#) in Seoul incorporates the remodelling of the facade and the interior of the common spaces, lobbies, meeting levels, auditorium and executive areas, along with the redesign of the landscaping. This was all done while the building remained occupied and functional.

"Retrofit's are often not a design task, but rather a technical exercise," [said Astrid Piber, partner and senior architect at UNStudio](#). "What is unique about the retrofit of the facade and interior of the Hanwha HQ is that it combines the aesthetic and technical aspects at the same time. Hanwha Q Cells is a world leader in PV production. They wanted to set an example. The retrofit was an opportunity for them to have a new face, a new image expressing their core values, and an opportunity for UNStudio to show that a retrofit can be answered with an innovative design approach that is more sustainable and part of our circular design thinking. Renovating and retrofitting is one of the most sustainable ways to enhance the urban environment."



[Click on the image to see the phased construction process](#)

Reponsive climate facade

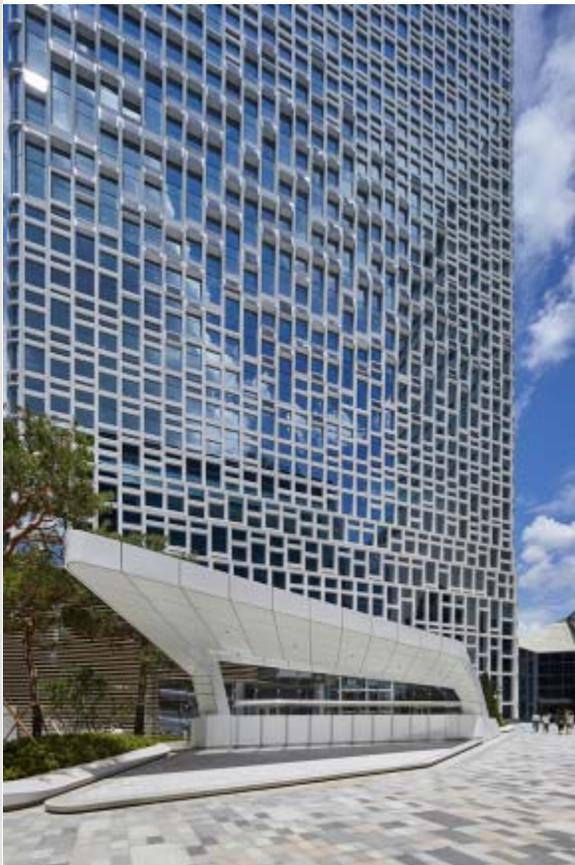
Located on the Cheonggyecheon in Seoul, the 57,696 m² headquarter building was seen to no longer reflect Hanwha's position as one of the leading environmental technology providers in the world. UNStudio developed an integrated responsive climate facade concept that meets with sustainability goals regarding efficiency and energy neutrality. "The integration of PV cells into the facade of their HQ building is like a prototype, which leads Hanwha's business into

the future. The entire South facade is covered with aluminium, glass, and integrated photo voltaic panels. By inclining the surface, the harvesting of solar energy was even optimised," Piber explained.

"Although highly aesthetic from the outside, the facade combines multiple functions: it produces energy, reduces operational costs, but it also acts as sunshade and keeps the heat out – thus improving indoor climate and reducing the use of airco. The bigger windows offer better views. The new facade really stands out from the surrounding buildings."

Remodelling in place

The retrofit of the facade and the interiors was carried out while the building remained fully occupied and functional, thus saving time and money. In order to enable the company to remain working in the building throughout the construction period, the interior and facade of three floors were refurbished at a time. In using a construction method that would have minimal impact on both the operation of the company and on the environment, the remodel of Hanwha HQ serves as a good example for all stakeholders in the construction process to consider alternative parameters and sustainable measures that can be introduced when retrofitting existing buildings.



Second life

"We like giving a building a second life," Piber said. "In our dense cities, renovating and retrofitting existing structures is one of the most sustainable ways to enhance the urban environment. It is not a solution per se, but definitely a viable one where circular design thinking is needed. I think UNStudio takes a strong position by supporting our clients and enhancing our environment through innovative and meaningful design. It is not a coincidence I would say that we get asked more often for these kinds of projects, we definitely want to expand in that field."

[Read a full interview with Astrid Piber published on solararchitecture.ch](#)



What does a circular city really look like?

Podcast

Listen to the [UNSTalks](#) podcast on circularity featuring Joke Dufourmont and Ben Kubbinga of Circle Economy, an Amsterdam-based social enterprise that has developed the Cities and Built Environment Programme for and with cities like Amsterdam, Glasgow and Bilbao to help them make the circular leap. The Built Environment Programme works to create a 'living' system in which building materials and products are optimally used and reused— a system that operates within the boundaries of our planet, preserves the value of resources, and ensures the wellbeing of inhabitants.



Photo: Eva Bloem

Adapting to the changing needs of tenants

The refurbishment of the [UNStudio Tower](#) located in the Zuidas (South Axis) of Amsterdam creates a renewed environment that promotes interaction and communication. The UNStudio Tower was originally constructed in 2009, with two entrance lobbies serving the two main tenants. In keeping with the evolving nature of offices on the Zuidas, the new lobby has recently been redesigned with a unifying layout that fits the new multi-tenant character of the building.

Flexibility related to future changes was key in the original architectural design of the tower itself. The new design of the lobby continues this approach by creating a 'flex-lobby', a flexible space offering a welcoming entrance area and a suitable location for informal meetings and larger events. Design elements such as The Chandelier, comprised of back-lit Corian surfaces and parametrically arrayed copper tubes, establish a strong new branding identity for the lobby and for the building as a whole. The materials used bring warmth and nature into the building

through wood flooring, textile walls and built-in furniture pieces.

[Take a video tour through the UNStudio Tower.](#)



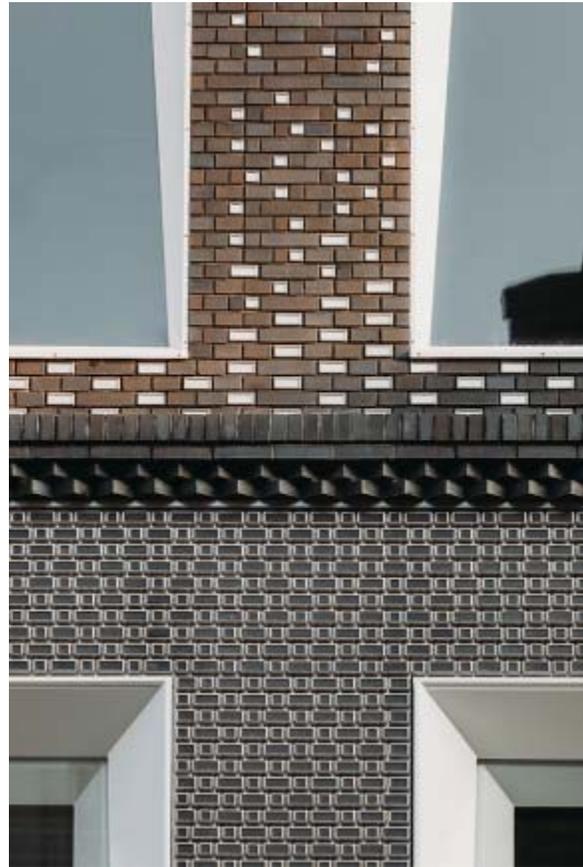
Photo: Evabloem

Celebrating mastering crafts

UNStudio's renovation of two neighbouring retail spaces on Amsterdam's best-known shopping street, P.C. Hooftstraat, gives both stores a contemporary face with a new facade, each of them tailored to the specifics of the original building, its history, location and context.

Situated between Amsterdam's Museum Quarter and Vondel Park, P.C. Hooftstraat is famous for its high-end boutiques and designer shops. The retail spaces along this street are a testament to Dutch design, creativity, high-end clothing and art. Ben van Berkel, founder and principal architect at UNStudio explained: "These neighbouring facades that we have designed are principally concerned with contrasting and crafting the detail through scale and materiality."

Both facades create a contemporary interpretation of the original traditional Dutch brickwork in their very own ways.”



The Brick Pixelation (P.C Hooftstraat 140-142)

Textured and transparent, laced and illuminated, [The Brick Pixelation Facade](#) embodies the intricate, crafted details epitomised by couture clothing. Cast stainless steel bricks with glass inlays pixelate together along this partially transparent facade to create a distinctive shopfront experience on one of Amsterdam’s best-known streets.



The Looking Glass (P.C. Hooftstraat 138)

Next door to The Brick Pixelation facade, UNStudio also designed [The Looking Glass](#). This facade, with three curved glass panels flowing down from the upper floors, is a celebration of textiles. In a fluid gesture, fashion and architecture come together to represent and celebrate the craftsmanship and geometry of high-end, tailored clothing, creating harmony between aesthetics and function. All this, while keeping true to the original design of the three-windowed vertical division of a classic Amsterdam town house, where on the upper floors, above the retail section, a bespoke apartment design will carry high-end architecture through the entire building.

Take a closer look at the facades in the following [video](#).



The old Rabobank and a rendering of the refurbished building.

Future-proofing existing buildings

Transforming a 1970's office building in Eindhoven, The Netherlands

Currently nearing completion is the transformation and redevelopment of the old Rabobank office building in the centre of Eindhoven, the Netherlands. After designing and building an [entire new office building for the Dutch national bank](#), UNStudio began the transformation and redevelopment of their old office building. The design was commissioned by [Edge Technologies](#), a developer that focusses on a healthy, sustainable and flexible working concept for the user. The choice of transformation - instead of demolishing the old building - originated from its very robust existing structure and the need for sustainable, circular redevelopments with efficient future use.

Open and flexible

Through a new, repositioned entrance, the building connects optimally with its surrounding urban fabric. The new entrance connects the street to the atrium via a large semi-public staircase. The existing fragmented building masses are interconnected in a continuous landscape of flexible office floors. These floors are designed from the principle of a gradient of activity: bustling in the heart of the building and with quiet workplaces located on the outer edges of the floors.

BREEAM Excellent

The building design has [BREEAM-Excellent sustainability certification](#). The transformed building makes use of aquifer thermal energy storage and solar panels. The building is equipped with smart technology. As a result of applications such as localisation sensors and intelligent data infrastructure, the behaviour of users provides essential insights into the performance of the building. This in turn reduces energy consumption and enables a more efficient use of the spaces. The building will be delivered with a material passport for circular purposes.



The new Xintiandi Plaza. Photo: Terrence Zhang. Below: Xintiandi before and after renovation



From a typical mall to vertical city centre
Renovated Xintiandi Plaza in Shanghai

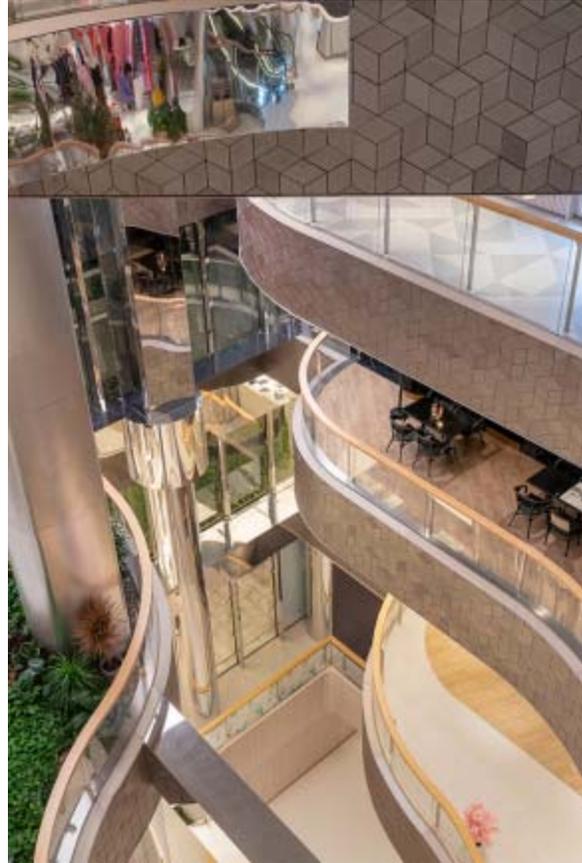
[Xintiandi Plaza](#) is located in the heart of Shanghai, along the well-known Huai Hai Road. By giving the building a new transparent facade, a restructured interior and redesigning the surrounding public space, UNStudio transformed the old department store into a social destination that functions as an entrance gate to the buzzing Xintiandi area; the most popular and famous shopping and entertainment area in Shanghai.

Instead of creating a shopping destination only, the new Xintiandi Plaza is designed to be a lifestyle destination for Shanghai's local and international young professionals. Combining retail, restaurants and themed spaces, all arranged in a novel organisation, Xintiandi Plaza steps away from the typical mall and towards a vertical city centre layout that provides opportunities for shopping, strolling, eating, gathering and relaxing.

[Walk around the Xintiandi Plaza here](#)



The refurbished exterior and interior. Photography Terrence Zhang



Illuminating a historical building in the Dutch city of light

Designed by Dutch postwar architect Jan van der Laan and opened to the public with great fanfare in 1952, the [C&A building](#) at 18 Septemberplein in Eindhoven, the Netherlands, was long held in high regard. However, numerous alterations were made during its lifespan and after entering the 21st century the building was no longer considered dominant.



Historical analysis

For this central refurbishment project, UNStudio imagined a rebranding and a modernisation of the precinct. A cultural historical analysis of the building was carried out and design interventions were proposed based on the building's historic values and the rhythm and ideas of the original architect. The philosophy of reducing material use to create lightweight structures formed the starting point for investigating the use of structural glass in the refurbishment.

Celebration tech innovation

UNStudio's interventions include the repositioning of an entire floor in order to create better floor to ceiling heights, and the return to a transparent glass plinth, as originally designed by Van der Laan. During the building's lifetime, an extension was added to the roof. In UNStudio's refurbishment, the roof is returned to the strong modernist aesthetic of the original design, while large illuminating glass motifs are installed on the facade, to celebrate Eindhoven's design heritage, alongside its contemporary reputation as a centre of tech innovation.

[Watch this video about the innovative technique of the glass boxes.](#)

And also check below the animations Eva Bloem made on our Instagram account:

[Illumination 1](#): (scroll to the second image in the post)

[Illumination 2](#):

[Illumination 3](#): (scroll to the second image in the post)



For further information about our projects portfolio and/or services, please contact our Business Development team: Machteld

Kors: m.kors@unstudio.com

For press enquiries please contact Karen Murphy: k.murphy@unstudio.com

Imprint

Amsterdam office

Stadhouderskade 113
P.O. Box 75381
1070 AJ Amsterdam
The Netherlands

T +31 (0)20 570 20 40
F +31 (0)20 570 20 41
info@unstudio.com

Hong Kong office

Room 1102-1105, Yu Yuet Lai Building
43-55 Wyndham Street
Central, Hong Kong

T +852 3499 1261
F +852 3563 8200
asia@unstudio.com

Shanghai office

Room 4606
Raffles City, No. 268
Xizang Middle Road,
Shanghai 200001, China

T +86 (0)21-63405088
F +86 (0)21-33663302
asia@unstudio.com

Frankfurt office

An der Welle 4
#528
60322 Frankfurt am Main, Germany

T +49 69 7593 7580
info@unstudio.com

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