

Play-cycle
Play station of constructive creation and circular education

Project ambition

Play-cycle is a playful educational social program which consists of a play station and multiple play satellites. The play station is a base center where play facilities will be proposed, designed, constructed, and used by local youngsters out of up-cycled local waste. The satellites are distributed throughout the neighbourhoods to display the up-cycled play facilities and to collect waste as well as creative ideas to interact with these waste materials.

The Play-cycle base station is located on the center point of the canal axis in the Feijenpoort group strategy. It is aimed to vitalize the canal side and build up a connection between the cultural scenes of the new stadium and AHOY by displaying up-cycled play facilities made by local youth. It will also help promote circularity while collaborating deeply with the surrounding schools through urban exploration and creative curriculum.

Site strategy

The current site accommodates a local retail center, a supermarket, a health center, and a school playground. It features a public front

square which provides local people with public services, gathering space and canal landscape. However, the continuous façade is blocking the inner neighbourhood and the schools from water scenery and public activities. The rigid small-span structure cannot suit the needs of the flexible needs of the play-cycle program and space.

Therefore, the project will take the strategy to demolish the original building and reshape the site with a new architectural proposal. An inclusive ground floor, terraces for public and private purposes and an outstanding volume as the eye-catcher by the canal are all key elements crucial for bringing back the collective site memory. A more flexible arrangement of large and small space as well as a better gesture from inside the neighbourhood to the waterside are essential qualities to be achieved in the new design.

Design requirements

The total floor area of the Play-cycle center is 9,500 square meters. It mainly contains play-related programs (play halls and creative workshops) and recycle-related programs (circular workshops, waste storage, up-cycle display and sales).





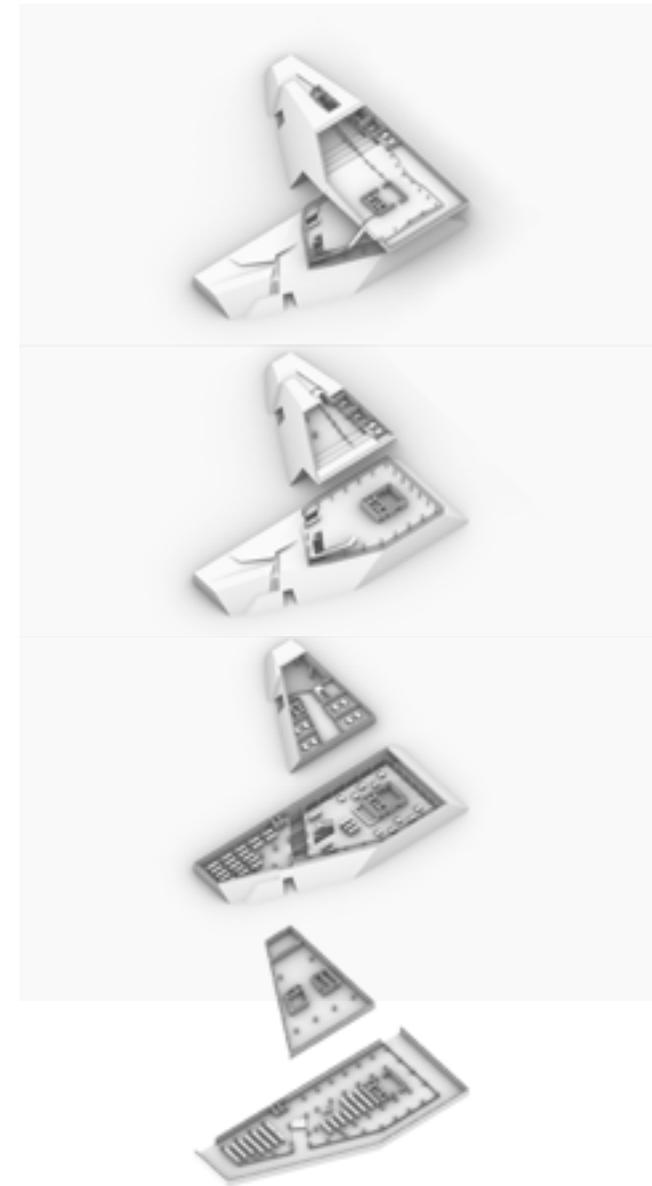
Informed by previous research on the migration of play and playspace, it is significant that the new typology of play-cycle should be inclusive, educational, profitable, and self-maintained. To achieve those qualities and the ones posed by the site condition, the design concept is supposed to be able to meet the following requirements:

1. Hybrid and playful space experiences
2. Openness and transparency
3. Flexibility
4. Light construction

Design concept

The transformation is initiated by the merge of play and recycle related programs. The duality of the programs requires both transparency to encourage public engagement in play-cycle activities and privacy to secure the efficient execution of the play-cycle workflows. The concept of intersecting the light and the heavy is hence adopted.

The building will consist a hybrid of heavy and light structure. The heavy structure envelopes solid volumes and closed space for private functions with limited accessibility, while the light structure helps create transparent voids and space open to public visit.



Southwest axonometric

The two structure systems intersect and intertwine with each other, forming an organic system of 'shell (heavy)-skin (light)-organs (heavy) -skeleton (light)' which is full of playful twists and turns. The intersecting also allows the whole play-cycle process to be displayed as a educative source, and the visitors can immerse as close as possible without interfering the play-cycle members.

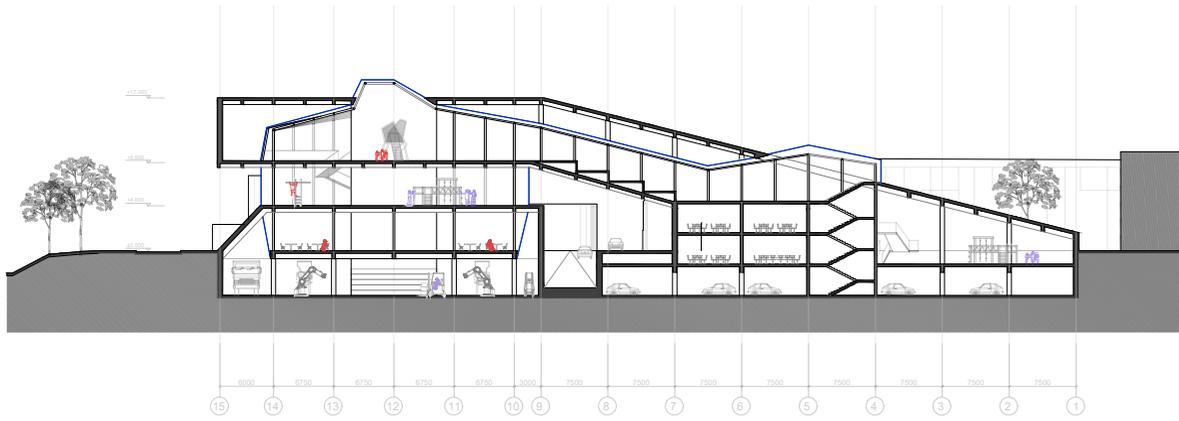
Sculpting the shell

The play-cycle project has a sculptural image with dual materiality of light and heavy, and is carved

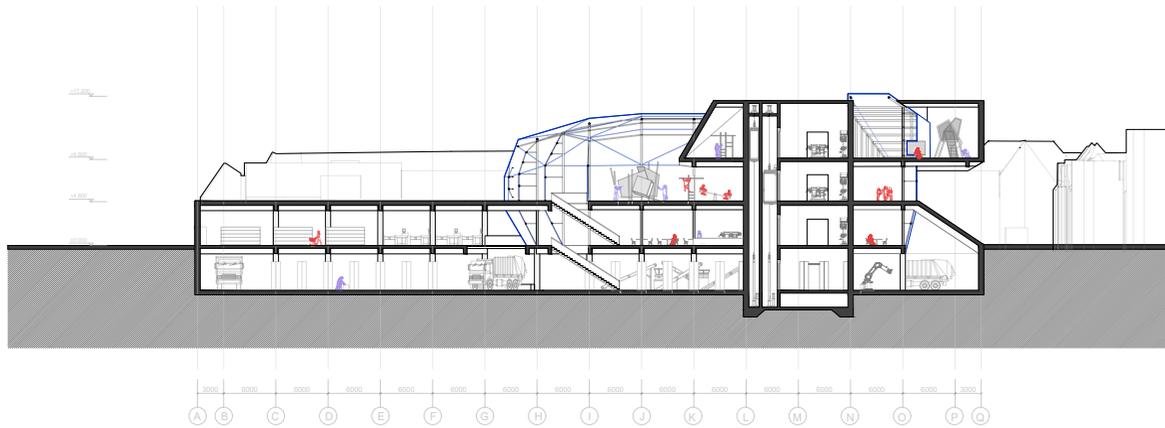
from both inside and outside to meet the need of the site and the programs. Two solid shells respectively occupy the street blocks close to the canal and school, housing the two sectors of play-cycle programs facing mainly to general public and younger school kids. The two volumes stack perpendicularly, with a organic, crystal light structure inserted in between. This crystal grows and penetrate into multiple directions, connecting the two sectors as a whole.

Plinth

The solid volume at canal-front rises from the underground level to form a plinth which integrates



North-south section



East-west section

the logistics, storage and pre-processing for recycling. The plinth features diagonal sloping edges extending the front square to a changable planted terrain, and further into the main play hall.

Hill

The northern school sector sits on the parking space, and extends from semi-underground level all the way up to the protruding volume on the top. The hilly form is designed for kids to climb onto to improve their physical health and exploring spirit. The rooftop routing will join the slope inside from one peripheral of the crystal volume. The split levels can be used as both live studio and exhibition space and actively link the two sectors on different levels.

Growing the skeleton

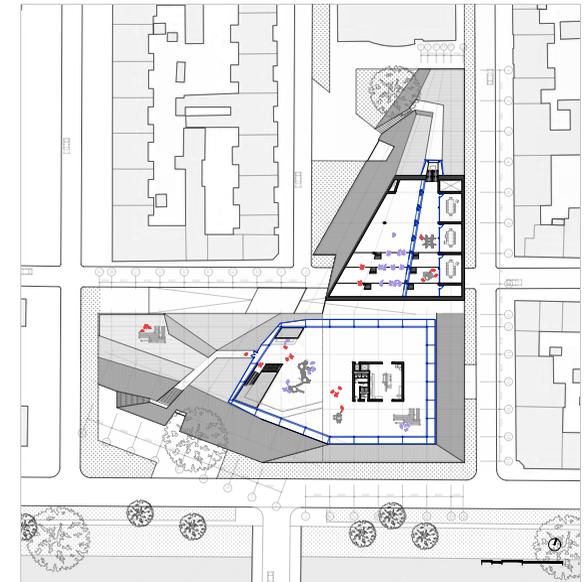
The light structure can be seen as the tissues and skeleton that connects the solid shells of different part of the building together.

Sunken DIY zone

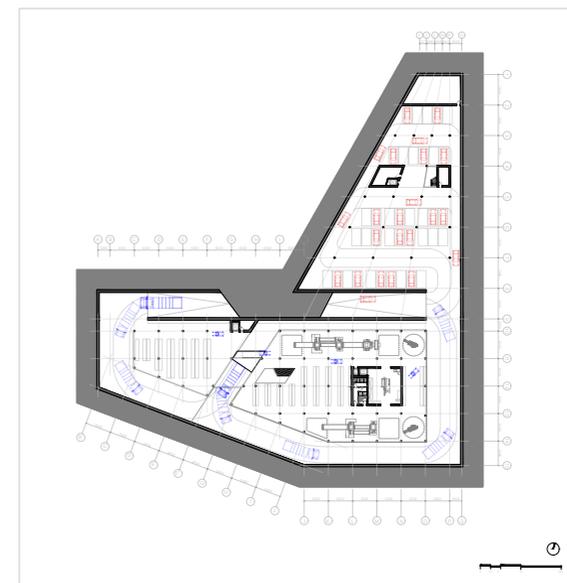
The DIY workshop sinks from the main play hall through the plinth into the underground warehouse. It brings with it natural daylight and public activities to activate the underground space. Moreover, visual contact is created between public and private flows, enabling the guests to fully observe the whole process how waste material is turned into useful resources.



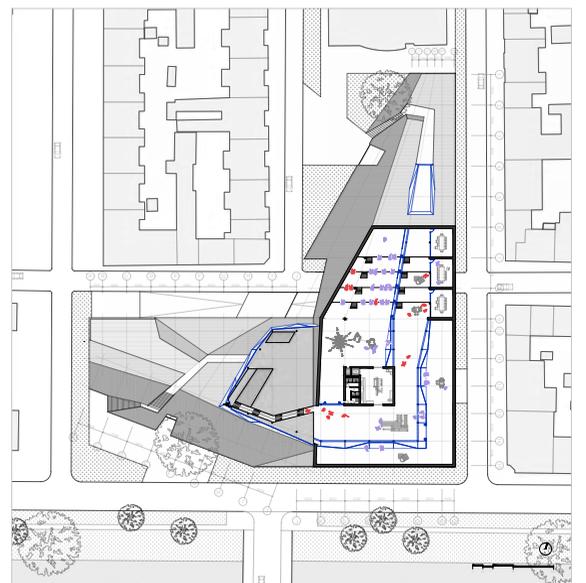
Ground floor plan



First floor plan



Underground floor plan



Second floor plan

Reflection

1. Relationship between research and design

During the development of this thesis, research and design are two elements that have been initiating, informing and inspiring one another.

The research topic "Migration of play" is at first inspired by the existing design of Rotterdam's urban landscape. The diverse, bold and adventurous features of Rotterdam's cityscape remind people not only the architectural phenomenon of "playground", but also a cultural pattern of interacting with the environment, exploring new possibilities and making developments in an exciting, joyful way. The motivation for this thesis to research and understand the playful growing pattern of Rotterdam is thus initiated by the precedent designs. It is further driven by the aspiration to transform this pattern from a city-scale, collective and spontaneous phenomenon to a neighbourhood-scale, individual and conscious design intervention. Being informed by both the intelligence of designs in the past and the ambition for the designs for the future, the research of migration of play and play spaces finally comes into place.

The actual design benefits a lot from the research for it prepares necessary background knowledge of context of both the physical site and the focal topic. The research finds its way to trace the migration of play through history and across multiple disciplines and to settle the topic down in the specific context of Feijenpoort, the site of the project. As "play" and "recycle" becomes the most significant features of the program, the idea of temporariness, light construction, hybrid identities then starts to become the guidelines for the design. All of the design ambitions and requirements are the outcome after balancing the growing trend of the modern play behaviour and actual conditions of the site.

2. The Relationship between graduation topic and studio topic

The topic for Complex Studio 2020-2021 is "Migration of ideas", which can find its origin in the identity of Hotel New York and city Rotterdam

with a history of migration. This topic brings with it a great ambition to explore theoretic or abstract topics which have significant social influences in public realms, and to trace the history how it gets to develop throughout time and space.

In the research of migration of play, cognitive science and behavioral science are two disciplines that have huge impact on the concept of play (Takhvar, 1988.). Both disciplines value the act of interaction as well as the changes, progress or even chaos that come with it. On the other hand, migration itself can be understood as change, transformation or growth. It also can be associated with concepts such as chaos, which are all shared values of play.

Moreover, the studio aims to push forward the boundaries of different ideas after the contextual research and to experiment these ideas through design practices in specific sites. While the idea of play is derived from the city spirit of Rotterdam, it is further developed into a more future-oriented sustainable concept "play-cycle" with borrowed intelligence from Scandinavian, British and US experiences. This whole process follows the intention of the studio guidelines and the study of migration has informed and finally completed the loop of research and design.

3. The relationship between the Research method chosen and the methodology of the graduation studio

The aim of project research method is to understand the Rotterdam context and examine the migration of ideas in the urban environment. The guideline of the chosen research method is carried under the general research framework of the whole studio. Methodologies such as historical, analogical methods as well as case studies are all advisable.

At the stage of contextual and program research, the methodology adopted in this thesis are mainly historical and correlational. The historical migration of play is examined to understand the general development of this concept and the main related events in history. In the meantime, all disciplines that can be associated to or have once had an impact on the migration of play are also studied. An integrated timeline is made to connect the dots and, more importantly, to generate new ideas for potential directions the thesis may head to. With historical and correlation studies, ideas from cognitive science and modern education

is borrowed, as well as experiences from the precedent practices in the history of Denmark, UK and US (2018), which are in the end all integrated in the idea of "play-cycle".

While developing the more detailed design brief and the actual design, typology and case studies prove to be quite useful. Since the program of this project is innovative and hybrid, it is essential to thoroughly comprehend the basic feature of each program and the corresponding typology and then manage to merge them. Case studies of playgrounds, entertainment centers, museums, theaters, salons and toy shops all provide useful inspirations to further carry out the design.

4. The relationship between graduation project and the wider social, professional and scientific relevance

Play, as a practice which has a huge impact on individual human growth and social relationships, has been researched in contexts of multiple disciplinary fields. Theories of play have been developed in different realms and instructed the design of diverse play spaces. Specific architectural typologies as well as general principles of urban planning have been taking inspirations from the migrated idea of 'play'. However, few studies or practices have explored how 'play' can be applied on a neighbourhood level as a solution to the poor development of both its residents and the community itself.

The innovative aspect of this project is to focus on the missing dimension in the migration of play, which are the underdeveloped neighborhood and the poorly-educated young kids. The project tries to integrate experiences from both other different disciplines and other countries and to adapt them into a sustainable program for this specific site. This attempt is expected to be an innovative conclusion of existing experiences and to set an example for districts with similar context to learn from.

5. The Ethical Issues and Dilemmas

The main dilemma in this project is to decide in what aspects or to what extent should the concept of "recycle" be integrated in the design.

Programmatically, it is a problem whether the whole collecting and processing of waste materials should be included within the building. Solution for now is to fully make use of the satellite sites to gather waste and to transport demanded certain types of materials to the base center to up-cycle. It is also worth questioning whether the whole building should be constructed out of recycled material, or even be renovated from an original building. The performance, cost as well as aesthetic of recycled materials can disagree with the design ambition, thus in this project, only small part of the building is constructed out of recycled materials. Moreover, some of the recycled materials will not keep its original look and could be quite implicit and hard to recognize in the space. The appearance and readability of these materials will further influence whether and how people will interact with them, so to speak its playfulness, which is hard to quantify or predict at design stage.

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