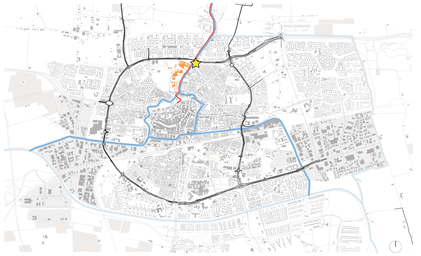
# BRAIN GAIN ACADEMY



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## BRAIN GAIN ACADEMY

*The Brain Gain Academy is an extra programme for the children of Leeuwarden to improve their performance in school. Facts have shown that their performance currently is below Dutch standards, this will have to improve. The hypothesis which started this development is:*
*Motivating young primary school children by introducing them to the professional Friesian knowledge will increase the grades and performance of students and will close the gap between job market and educational levels.*

The main reason for the low performance is believed to be a lack of motivation from their parents. Children see their parents as a role model to learn from. In the case of Leeuwarden, a large part of the adults have not been studying or do not even have a job. Therefore it currently is not possible for the parents to motivate and stimulate their children on the right way. Children simply don't see how much fun education can be.
The University Campus Friesland has noticed this tendency too and developed a new university purely for PHD students and professionals. The programme of this upcoming university is based on the specific Friesian knowledge like Dairy production, Friesian language, Water Technology and Robotics.

Cultural Capital 2018
In the year 2018, Leeuwarden will become the cultural capital. This will attract a lot of tourists and interest from all over the world. Constructing purely for this year would be a waste of capital, that's why investments have to deliver a legacy from which the inhabitants of Leeuwarden can benefit.

The main concept of this building is set up in two phases. The most important phase will become the legacy, cultural capital will only be a catalysator for this process. This will be an extra educational programme which will be visited 4 times per year by all the schoolclasses in Leeuwarden. The educational programme is formed by the branches of UCF and is specified for Friesland. Some professionals but

The impression above shows the first idea of mixing children with professionals

ucf University Campus Fryslân

- water technology
- tourism
- multilingualism
- geology
- sustainability
- robotics

Specialities of Friesian science

Mixing children and students

A combination of promoting Friesian knowledge and a family hotel

mostly students will lead the groups and explains their tasks. These students are having their own student apartment in this building too. The rent they pay will help the businesplan for the programme. The students are free to participate, but if they do so, they will get discount on the rent or study credits.

During cultural capital, this building will be an information point, hotel and transportation hub. All these functions can be used afterwards as educational space, student rooms and student canoe club. The building is situated perfectly at the border of the campus, at the canal de Ee, and at the ring road.

45% Of current Frysian Cito scores are below Dutch average

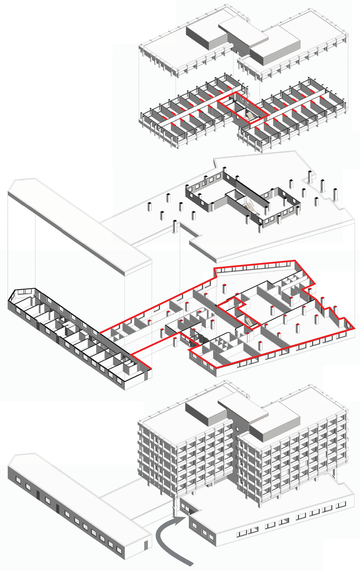
CONNECTIONS BETWEEN FLOORS

Several vertical connections have been made to gain interaction between the children, Friesian professions and sharing of excitement.

Floor 1, 2 and 3 is fitted with climbing walls and safety nets. This is created by demolishing a non-bearing part of the floor. Glass walls separate this "shaft" from the learning floors in terms of sound and climate.

The arboretum on floors 4 and 5 is a simulation of Friesian biology. Children learn how plants will grow and how special trees look like during the year. This is an exterior space in the open air, and can be combined with the camp-inn floor. Scouting boys and girls can create campfires in this open space and climb in the trees.

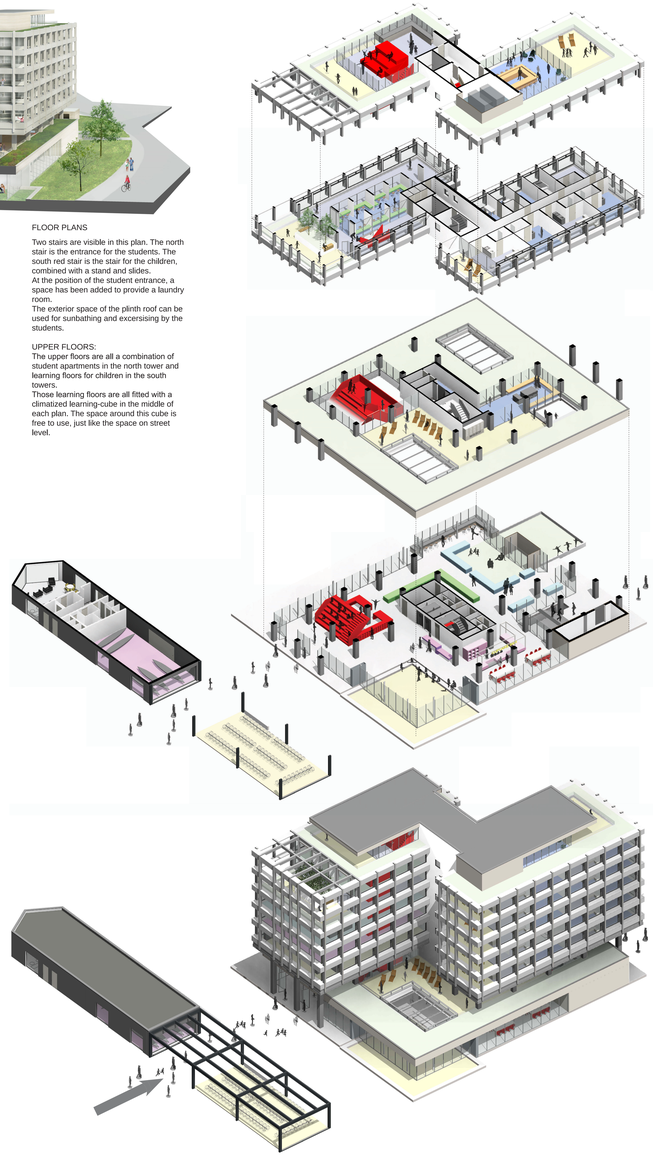
On top of the roof is the party zone for students and an panoramic space for the Friesian language classes. Stories and songs can be made here with the skyline of Leeuwarden in the background.



FLOOR PLANS

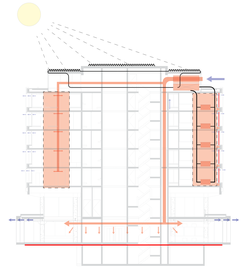
Two stairs are visible in this plan. The north stair is the entrance for the students. The south red stair is the stair for the children, combined with a stand and slides.
At the position of the student entrance, a space has been added to provide a laundry room.
The exterior space of the plinth roof can be used for sunbathing and excersising by the students.

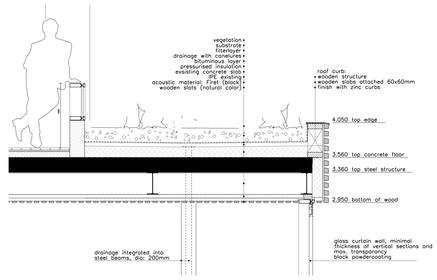
UPPER FLOORS:
The upper floors are all a combination of student apartments in the north tower and learning floors for children in the south towers.
Those learning floors are all fitted with a climatized learning-cube in the middle of each plan. The space around this cube is free to use, just like the space on street level.



CLIMATE SYSTEMS

The image above is a schematic image of the climate systems for this building. There are two zones to distinguish. The first one are the educative zones which inhabit the plinth and the learning floors. These floors have to be suitable for opening up large parts of the façade, providing fresh air and entrance to the gardens. The technical state of the upper façade is not comparable to daily standards and will not be upgraded for now, this will be too expensive.
Therefore I chose to heat the learning cubes and the plinth building with pre-warmed air. This will climatize the area very quickly and creates the possibility to form hot and cold zones (f.e. the dairy shop has to be cooler than the learning zones because of the dairy products).
Simple ducts can be mounted below the ceiling. Vertical transport of this heated air can be placed in the existing shaft by the elevators.
To prevent condensation, the plinth floor has to be isolated. This can be done by filling the space underneath the floor with isolation bulbs. By doing this, the floor feels less cold for the children.






STUDENT APARTMENTS

The student apartments can be heated by using the existing heating radiators.
The heating system itself can be replaced by a smaller and more efficient one. A combination can be made with solar heat which will be catched on top of the roof.
Black heat exchangers will help warm water for the showers heating up.
The single glass panels can simply be replaced by double glass panels.

DETAILING OF THE PLINTH

The choise of wood cladding for the plinth and rooftop has several benefits. Firstly the contrast has been made with the brutalistic upper stucture by creating a warm sensed and warm looking volume. On the first sight, this volume has a reduced detailing in comparison to the upper structure. But by adding setbacks or, at several places, no setbacks, the facade gets interesting for children and works together with the concept of the floor plans. Floor plan and gardens are now connected and embedded.

The acoustical problem which is caused by a lot of children, has been solved by placing wooden slats in combination with Firet, an acoustic material which absorbs an overkill of sound.
Additional materials have been added to reduce the risk of sound-damage. Artificial grass in different colours will silent all the high and low tones to a pleasant level of acoustics. This material is perfectly for children to play, sit or even chill on.

The wooden slats have been chosen for the ceiling to break with the cold and harsh look of concrete. My first thought of the usage of spaces was a quote of Herman Hetzberger who said that a children's building has to be made out of a concrete box to provoke creativity. I still share that thought but I do feel the urge now to soften the building a bit more (maybe the children otherwise would get brutalistic nightmares of the structure).

The usage of form has been changed now. Coming from the adaption of the upper structure, now the plinth has it's own statement and is more disconnected from the upper brutalist. All the new parts of the building have become more friendly, but simultaneously not banal or unfair-like.
The material of the ceiling has been folded into the vertical exterior accenting the horizontality of this lower structure.
On top of the plinth, a sedum roof has been created.
This reduces the rainwater impact on the drainage system, it reduces the swinging of temperatures and provides a pleasant sight for the roof terraces and upper floors.