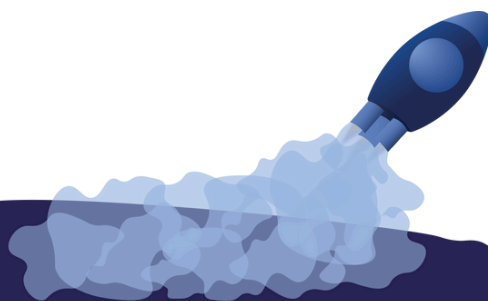




**SOLVING
WICKED
PROBLEMS
THROUGH DESIGN
BASED EDUCATION**

THE FUTURE OF MOBILITY IN THE REGION



university of
applied sciences





The Facility Printer

RUN



Inspiration



Dear reader,

At NHL Stenden UaS, students study within the educational concept of **Design Based Education** (DBE). Partners of the Regional University Network of Europe (RUN-EU), experience DBE as a new and very interesting concept to explore using.

For this reason we organized a YES!week where interested students and teachers of the **RUN-EU** partners could learn all about it. We approached the learning of this new educational concept through 'learning by doing' within a resonating challenge for the participants. NHL Stenden UaS strives to actively improve **Broad Prosperity** in the region, a relevant topic for all rural areas in Europe. So the challenge became:

The Future of Mobility in the region: *How do we keep the future of mobility available, accessible and sustainable in order to improve broad prosperity in our regions?*

To give body to this challenge, we were very lucky to team up with **P10**, a partnership of the 30 largest rural municipalities in the Netherlands. Jos Struik (policy advisor of municipality Hollands Kroon) was a great ambassador. *Jos, we thank you for your added value, intrinsic motivation and inspirational feedback on the proposed solutions for the Future of Mobility in the Region.*

Within this booklet you will find the quick and dirty **exploration results of 6 groups** that experienced just one iteration of Design Thinking using Future Design tools. *Imagine what could be created if students had more time?* At the end of this booklet, you will find the **context of the YES!week**. *What did the students experience whilst working on this wicked problem using DBE?* Please see this booklet as a first taste of inspiration from multidisciplinary young minds, and as a gateway to more amazing collaborations in the future.

Know that your challenges are so welcome: they add value to our students, as the students value to your organization.

Happy reading!

Amarins Schuilenburg

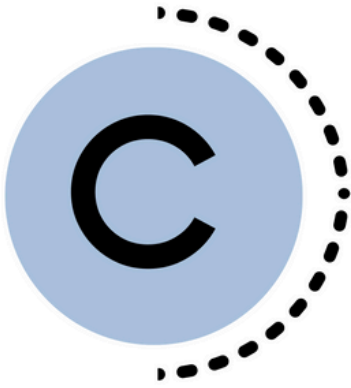


GROUP 1

The students of group 1 focussed on the lack of facilities in rural areas, and came up with a combination of their two best ideas:

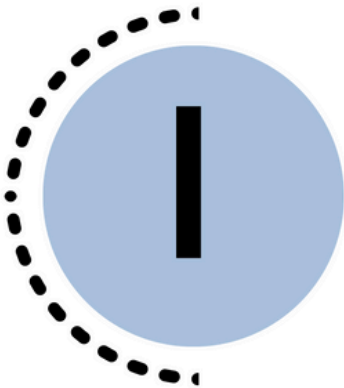
- a mobile assistant to help signal needs in the region and group these within a certain area, to buy collectively, facilitate needed healthcare grouped on location or share transportation;
- a facility printer that could be used as for instance pharmacy tools are needed. The raw materials and 3D printers will be available for use.

These solutions create more autonomy, higher availability of products and services, improve job opportunities and social interactions.

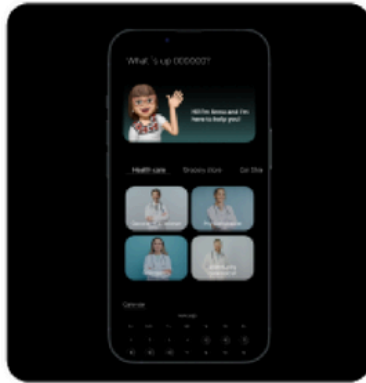


CONTEXT

- Inadequate offer of facilities to supply the need for groceries, medicines and healthcare assistance in rural areas
- Lack of transportation to move to other cities to go shopping/healthcare assistance



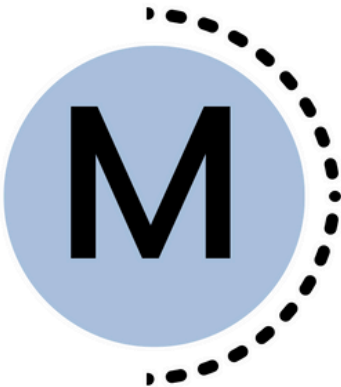
INTERVENTION



The assistant



The Facility Printer



MECHANISM



I need groceries!

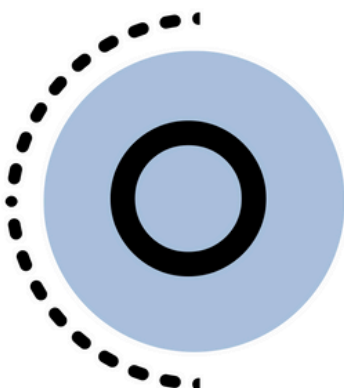
Virtual Assistant

Share the schedule and destination needed

Search for an available car-driver

Facility Printer

Choose of the categories among food, housewares or pharmacy tools. Then there will be the possibility to choose the specific thing and the generation of the correct facility through the use of material such as carbon and hydrogen.



OUTCOME

- Increase autonomy in transportation for people living in rural areas that doesn't have their own car
- Increase quality of life
- Create job opportunities
- Promote social interactions



What's up 000000?



Hi! I'm Anna and I'm here to help you!

Health care

Grocery store

Car Shar

Leeuwarden Map



Most Popular



What's up 000000?



Hi! I'm Anna and I'm here to help you!

Health care

Grocery store

Car Shar



General Practitioner



Physiotherapist



Emergency



community pharmacist

Calendar

MAY 2023

SU	MO	TU	WE	TH	FR	SA
1	2	3	4	5	6	7
8	9	10	11	12	13	14

What's up 000000?



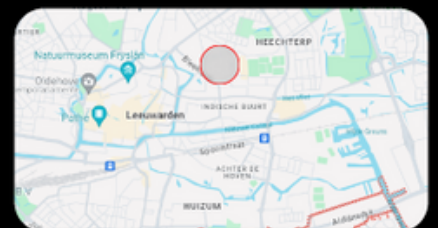
Hi! I'm Anna and I'm here to help you!

alth care

Grocery store

Car Sharing

Leeuwarden Map



Drivers Available





GROUP 2

The students of group 2 focussed on the lack of public transport & lack of facilities in rural areas, and came up with:

- an innovative system for delivering goods through an underground pipe system with airflow. These tubes can be used in both directions, from home towards a pick-up station to the city. No cars needed, only airflow (like in hospitals). It will be managing peoples need with the integration of AI.

These solutions reduce pollution, increase accessibility of goods to people that have trouble using regular transportation, and therefor autonomy. It will also promote the quality of life and help people socialize at the pick-up station.

AirFlowMart

Welcome to the future of
seamless deliveries where we
are redefining convenience, one
pipe at a time!



AirFlowMart

Innovative delivering system

Innovative system for delivering goods through an underground pipe system with airflow.

City



Small village



Pick-up station



IMPACT ON THE SOCIETY



Reduce the pollution by using the airflow system for deliveries and returns.



Increase accessibility to goods for elderly, disabled and/or people with specific needs.



Promote the socialization of people at the AirFlowMart (pick-up point).



Manage people needs with the integration of AI.



Promote the quality of life of the people using the services.



GROUP 3

The students of group 3 focussed on the lack of regional mobility, movement of individuals and sustainability perspectives and came up with:

- a conversion of energy towards transportation through kinetic energy. The energy of bikers and walkers on pathways can be collected and stored. Which can be used to power transportation like (underground) trains.

These solutions reduce pollution, increase accessibility within the region and motivate people to become healthy, move more and become a part of a collective effort

CONVERSION OF ENERGY TRANSPORTATION



Alessandra



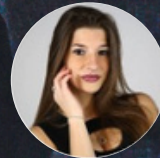
Santos



Silva



Carlos
Costa



Denise
D'Apuzzo



Elena
Mesca

PROBLEM

Connecting urban cities with urban countrysides.

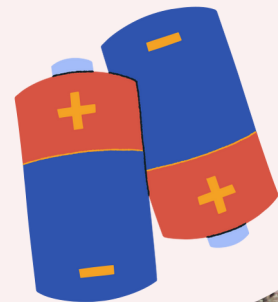


SOLUTION

Collecting kinetic energy and convert it into electricity, providing energy for underground and underwater trains.

HOW DOES IT WORK?

Citizens stroll and bike along city streets, where the kinetic energy produced by people is harnessed, stored, and subsequently used to power underground and underwater trains.



WHY INVESTING IN THIS SOLUTION?



Embracing a clean and renewable energy source not only powers progress but also encourages more exercise and collaboration. A better future where sustainability and well-being work hand in hand for transporting people.



Public City
○
↑



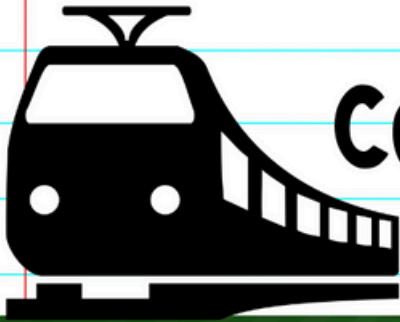
GROUP 4

The students of group 4 focussed on the challenges a small village like Tijnje face in order to become more desirable and livable. They combined their 2 best ideas into:

- community gardens per village - grow healthy foods without pesticides, communal responsibility and connections, spend time together and grow together, combined with a entertaining area for children.
- excess foods will be shared within the area by food trucks and public transport. Knowledge and information will be shared to help everyone grow.

These solutions strengthen local communities, and increase accessibility of goods within the region and help people become a part of a movement.

High speed train as a Communitary Garden



01 Context

In this village lived a 1500 people without much medicine service and without supermarkets or workplaces.

It's necessary to use the car because the public transportation not so good.

The vilage have many mobility issues and the services are needed for the community and the space becomes more desiriable for get more young people.



02 Intervention

The comunity garden and high speed train are a good idea because you can met a lot of people and spend time together in here.

The mobility increases.

You can grow your stuff without pesticides.

This is a place for a good relax time, doing sports, entertainment for children.

The train is good for food delivery to others regions.

03 Mechanism

Our garden produces vegetables and the villagers consume the majority of them.

The acessible train distributes excess to other regions and the city offers a place where to grow your stuff.

Everyone can participates to the maintenance and zero waste

04 Outcome

We did some research by asking citizens of Leeuwarden and they thought that idea is generally good.

The crops can be cultivated without pesticides and information is exchanged.

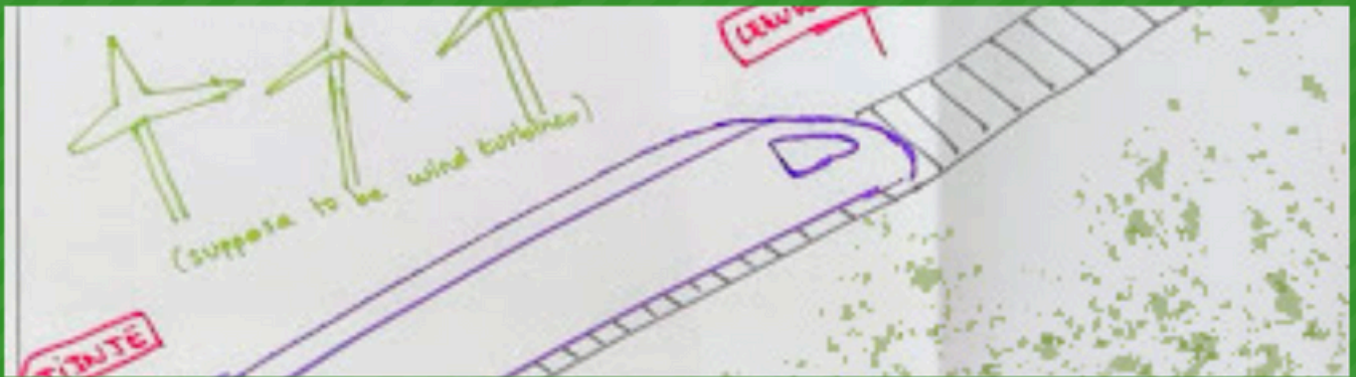
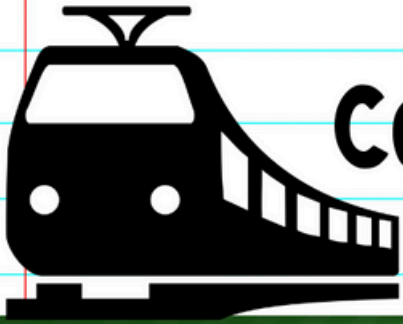
Garden is not for people who don't like gardening or going outside.

The people thinks this is good for your health and is a good space from people who lived in small houses.

This is a space for community and sharing of information.

The train enchances mobility.

High speed train as a Communitary Garden





GROUP 5

The students of group 5 focussed on the problems and needs that a small village like Tijnje face in order to become more desirable and livable in the future. Their two best ideas:

- Galaxy Rider - subsidize and improve public transport
- Taste Truck - Food trucks in villages without grocery shops at times that people are home. Use a mobile app to track the truck's location and order goods ahead. so the Food Truck delivers your specific needs.

These solutions optimize circulation, making villages more appealing to families, reduce pollution, increase accessibility of goods to people, and more freedom of travel.

Created by:

Clemence Defrasne
Inês Coutinho
Mónika Hamuth
Rafaela Martins
Ushani Chandrasena

Tijnje

MAKE TIJNE A MORE LIVABLE VILLAGE

Context

We have been working on a solution for improving the mobility in Tijnje village by reconstructing the bus schedules and the availability of groceries.

Intervention

We reckon that it would be beneficial to add bus services in the evening and on the weekends. Moreover, we would hire bus drivers instead of volunteers.

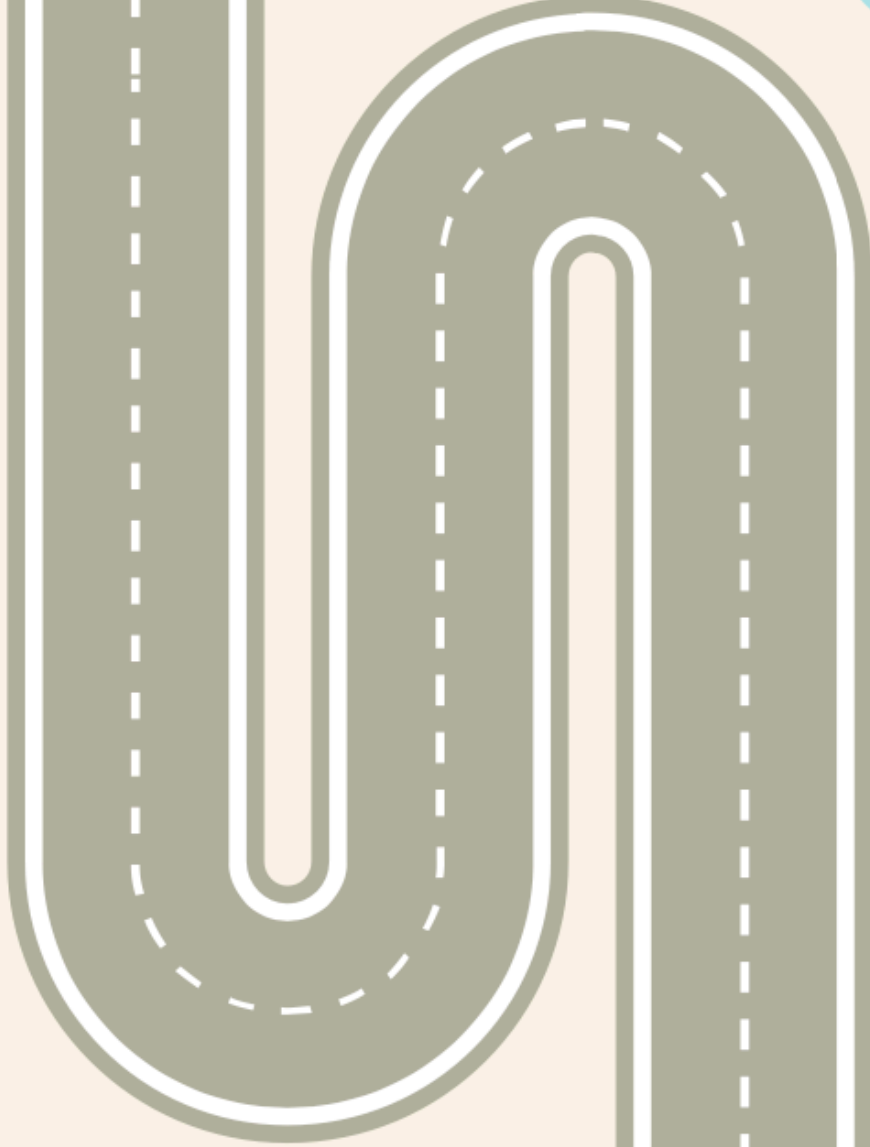
Mechanism

For better mobility we can implement a food truck which drives through in the region without grocery shops. The ideas should be applied step by step with advertisement.

Outcomes

It is our expectation that through the implementation of the project, we have mitigated mobility challenges to a certain extent and we have increased employment opportunities.







GROUP 6

The students of group 6 focussed on inclusive housing: how to attract new and young people to a village where most inhabitants are now elderly and less mobile, also taking into account that it could become culturally attractive. Their best idea:

- Raising houses to save space, creating a communal area where young people live upstairs and elderly downstairs. Community gardens and shared cars. All housing and gardens designed by artists from the region.

These solutions optimizes the community feel, creates effective use of space through smart architecture and attracts visitors. It reduces pollution and increases freedom of travel.



HOUSING HARMONY

CRAFTING SOLUTIONS FOR AN INCLUSIVE FUTURE

CONTEXT

Tijnje is a small town in the Friesland region of the Netherlands. The town is looking to expand and attract new citizens while for elderly and people with reduced mobility. Using the limited spaces effectively in order to create united community while maintaining original look of the houses is a key element of the project.

INTERVENTION

Redefining housing design and layout for future neighbourhoods, while incorporating a shared community yard. In addition, encouraging private owned cars for ride sharing among neighbours.

MECHANISM

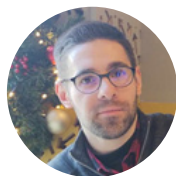
Raising up some of the houses without changing the architecture. Lower houses for people with reduced mobility and the upper houses for younger people. Shared gardens among the area for people to mingle and retractable slides for children to play together.

OUTCOME

A more united community where people are helping each other and have fun together. Highlighting being part of community without trespassing on each others. While creating a new kind of architecture that could attract visitors interested in the topic.



Sérgio Santos



Zoltán Toth



Ilona Blanchon



Cinta Pañña



Sofia Sá



Module photos



CONTEXT

The context of YES!week:

30 students from **RUN-EU** immersed themselves into the educational concept of NHL Stenden by tackling a wicked problem head first. To experience **DBE**, the programma at a glance (below) was created.

PROGRAMME AT A GLANCE

NHL STENDEN - THE NETHERLANDS

LOCAL TIME	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
MONDAY 4/12	COMMUNITY, DBE & BRIEFING		BRAINSTORM AND PITCH V0.1		LUNCH BREAK	DOT VOTE AND GROUPS		CITY TOUR OF LEEUWARDEN			
TUESDAY 5/12	EMPATHISE & DEFINE				EXPLORE THE REGION						
WEDNESDAY 6/12	IDEATE				LUNCH BREAK	EXPLORE SOLUTIONS AND TOOLS					
THURSDAY 7/12	PROTOTYPE STUDIO				SHARED LUNCH	TEST IN LEEUWARDEN		PITCH V0.2 & FEEDBACK		COMMUNITY DINNER AND MOVIE	
FRIDAY 8/12	RE-ITERATE 2.0 SOLUTION				LUNCH BREAK	PITCH V1.0 FOR CLIENT		NETWORKING			

Within this packed week, students

- explored multidisciplinary, multilevel and multicultural collaboration in a full-time community-based setting;
- grew in personal leadership of taking ownership to travel to another country and actively participating here;
- learned new Future Design methods to tackle the given wicked problem and work together with a real-life problem-owner;
- participated in an iteration of Design Thinking, focussing on Empathize, Define, Ideate, Prototype and Test;
- presented iteratively through a pitch, poster and presentation;
- and applied all this to a question that resonates throughout their regions in Europe and beyond.

This YES!week could not be organized without the amazing co-facilitators **Sanna-Maaria Siintoharju** (HAMK), **Natasha Doshi** (Vorarlberg), and student of Communication & Multimedia Design **Manon Postma** (NHL Stenden). And a big shout out to all the participating students and teachers. Thank you all!

Amarins Schuilenburg

(Future Design Factory, NHL Stenden)



**SOLVING
WICKED
PROBLEMS
THROUGH DESIGN
BASED EDUCATION**



Welcome to NHL Stenden
RUN-EU students
& colleagues!

**NHL
STENDEN**

university of
applied sciences



frisian design
factory



THANK YOU!