



Exploring the world of children and teenagers in a 360° virtual environment

DLA Conference 2019

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Introduction

Multidisciplinarity



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Researcher

Social work



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Social work



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Copromotor

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Researcher

Landscape
architecture



Ruben Joye

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Landscape
architecture



Pieter Foré

Copromotor

Landscape architecture

Multidisciplinary



Opening of exhibition in Ghent
Tuesday May 21th 2019
(until June 19th)

More info: www.blok.cf

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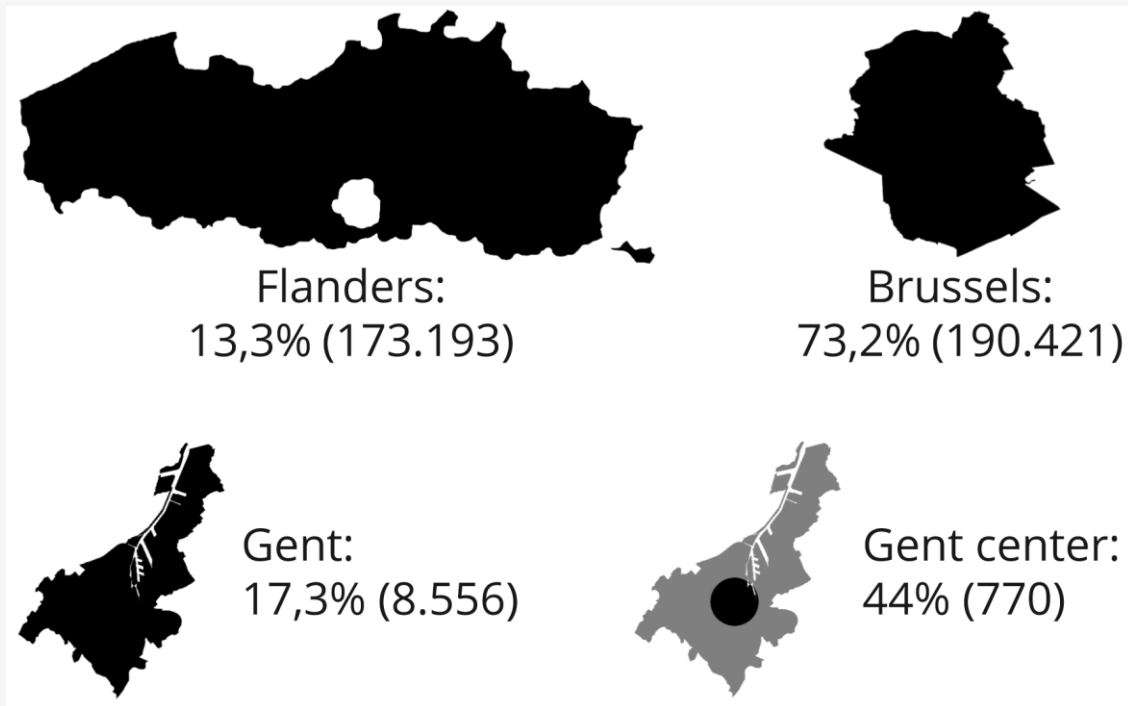


A question



A reality

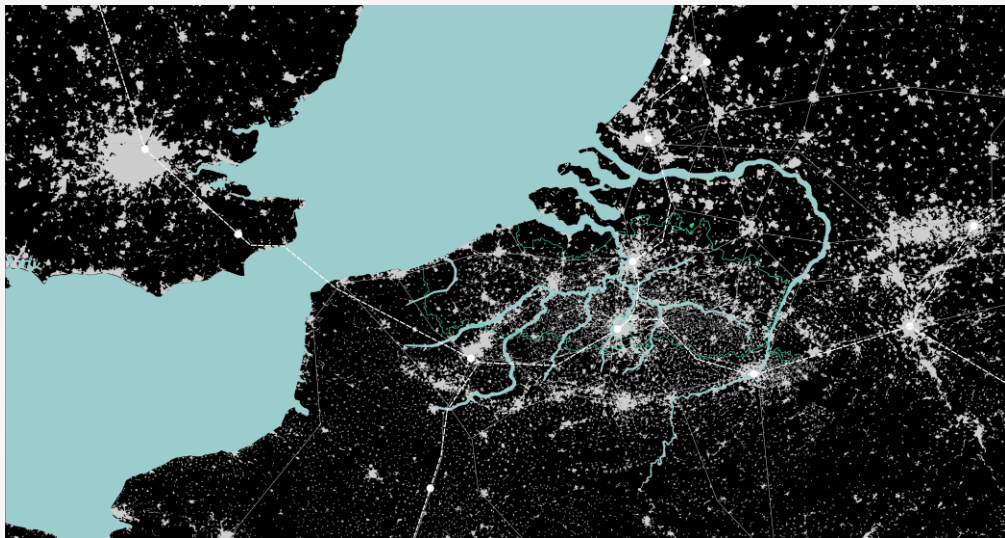
Amount of children and teenagers in apartment buildings



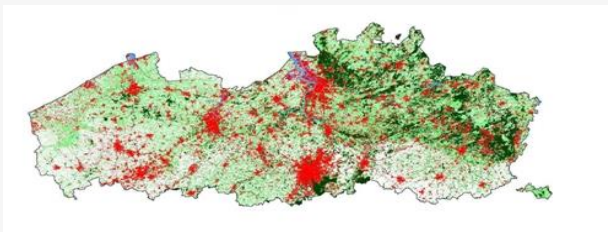
Flanders' and Brussels' numbers based on analysis of the Census 2011 inquiry (<http://census2011.fgov.be/>).

Gent numbers based on the database of Gent in Cijfers (<https://gent.buurtmonitor.be/>)

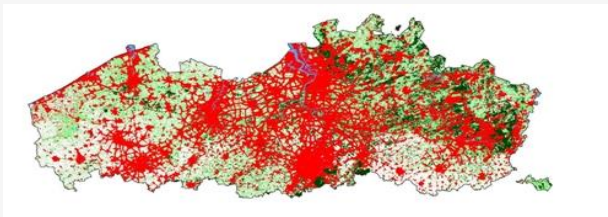
Flanders now



Departement Omgeving



Built surface in 2000 (Poelmans)

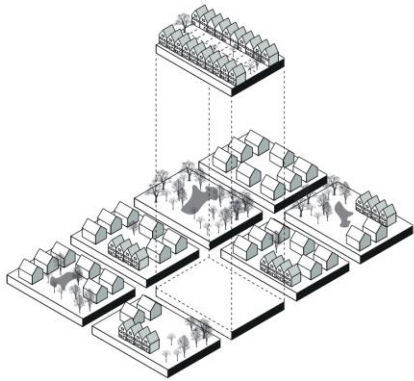


Prediction built surface in 2050 (Poelmans)

Flanders future (?)

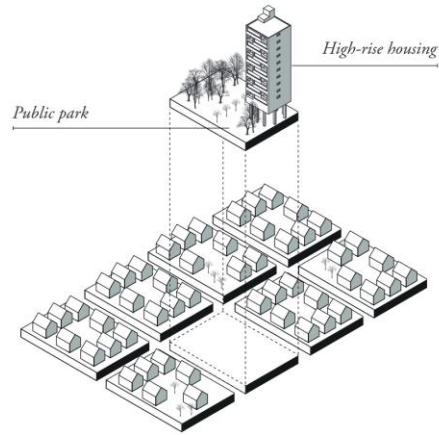
LOW-RISE DENSIFICATION

Existing has sufficient green



HIGH-RISE DENSIFICATION

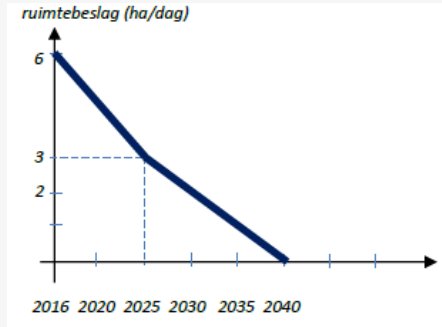
Existing does not have sufficient green



Graphics: Sarah Poot



Draft version of new long term urban planning vision (2018)



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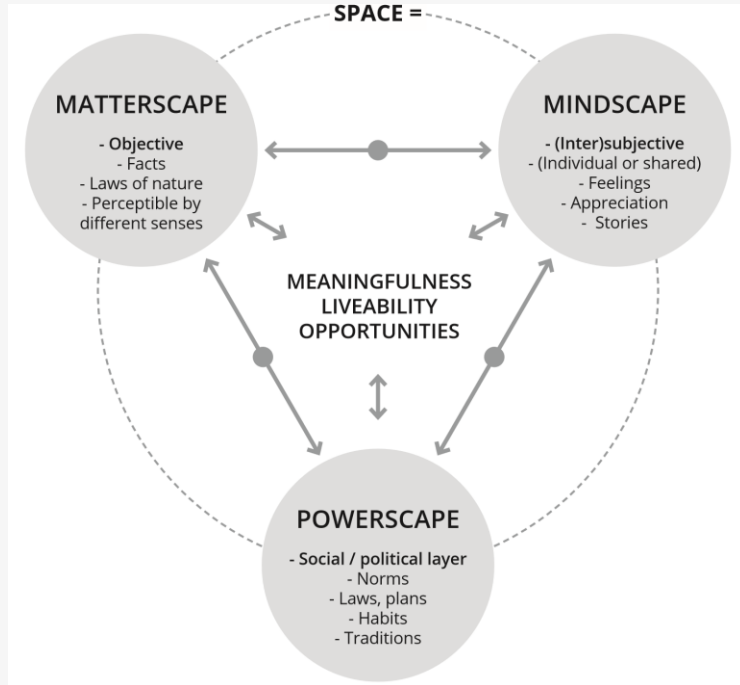
Multidisciplinarity

Housing *environment* influences the opportunities, livability and meaningfulness for children and teenagers (> Role for L.A.!)



How can we ensure the spatial quality of (existing and new) vertical housing environments for children and teenagers?

Multidisciplinarity



Graph based on: M. Jacobs (2014)

Europark (Linkeroever, Antwerp)

Europark (Linkeroever, Antwerp)



- Diverse modernist highrise neighbourhood (1970's)
- 160 nationalities and large amount of families with children
- 44 children and teenagers (age 6 to 18)
- Methods
 - Individual interviews
 - Mental mapping exercises
 - Discussions around a model
 - Group walks
 - Photo-essays
- Mostly verbal/written information
- Coded in Nvivo software for qualitative data analysis

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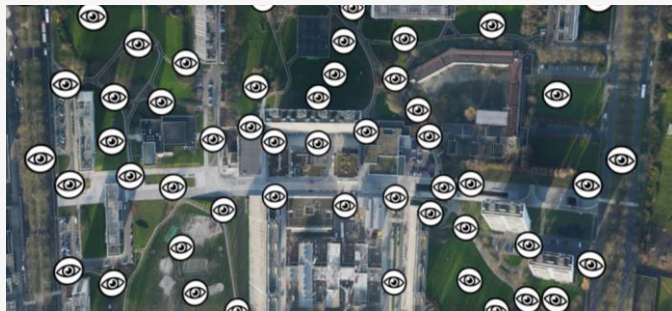
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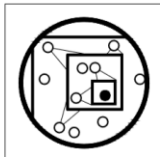
Three cycles of qualitative data analysis

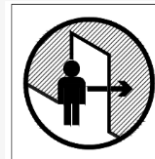


1. Specific places
2. Meanings, opportunities, activities, qualities, shortages, conflicts
3. Building blocks of spatial quality



Building blocks: **Accessibility & borders**,
Vitality, Ownership, Uniqueness, **Provisions**,
Social contacts & conflicts, Scale, Privacy,
Safety, key persons





Accessibility (Social and mental barriers, processes of exclusion)



"Sometimes, when I'm playing football behind the block, my mom calls me from the apartment to come back inside because it's getting dark or I have to come to have dinner."

(Boy, 7 years)



"My parents allow me to come there, but I don't really like behind the block. Behind the Chicagobuilding, there's a field where you can only play basketball or so, and nothing else."

(Girl, 11 years)

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Safety (Objective and experienced)

“There are many dogs and cats in my building and I’m scared of all animals except horses. (...) When I see a dog while waiting in front of the lift, I quickly take the stairs and tell my brother “let’s do a race”.”

“I don’t like living in an apartment. The lifts are nearly almost broken, the lifts are always dirty, the stairs are dirty, it always smells like pee. You always have to be quiet, because when you make noise or jump around, the neighbours, from downstairs, always come to complain. There are always rats and mice and cockroaches and so on.”





Social contacts (space creates, supports or denies opportunities for social contact)

“Sometimes, mostly in summer, dad prepares barbecue and we eat on the balcony. (...) We unfold the small table, wipe it clean and put the plants aside for a moment” (Girl, 11 years)

“One of my friends from school also lives on the backside of the building, and I can talk to her through the shielding of the balcony. (...) Sometimes, when we have to practice a play for French class, we do it through the balcony.” (Girl, 11 years)

“Mostly we can play outside until my mom calls us from the balcony. Because yeah, we can hear that. Because we aren’t that far away because we are allowed to play close to the apartment.” (Girl, 11 years)



Provisions (Local services, amenities)

“I come here (in the library) every week. Sometimes on Wednesday, sometimes on Thursday. I know you can do some workshops here and you can use the computers for free, but I only come here because of the books.”

“Here in the library, we do small projects and there is Europarkmagazine and so on. And, I’m not sure, but I think that this is not the case in most of the other libraries. (...) If it wasn’t for this library, I couldn’t do all the fun things I do with Benita. And we also wouldn’t have met you (the interviewers).”

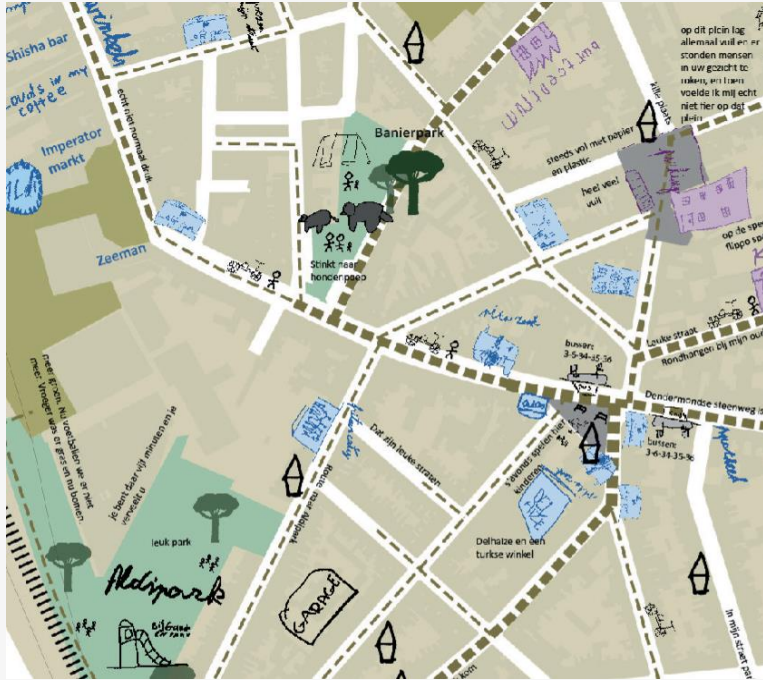


Reporting the data

How to translate and report the data that go beyond the possibilities of a common research report?

- **visually represent the space as it is experienced**
- **readable both for the inhabitants as for a broad spectrum of professionals**
- **readable across disciplinary borders**
- **enables discussion**
- **facilitates the exchange of different meanings given to the same space**
- **Consultation both individual and in group discussions**
- **Different ways of navigating through the results**

Experience map



Fragment of an 'experience map' from the previous research project (KIDS) showing how children experience and perceive their living environment



- Urban places shown by their nicknames
- Features small versions of their own drawings
- Map as a base helps to spatially organize



- Lacking visual feel of the annotated places
- No way to connect additional (raw) information

3D C.A.V.E.



The 3D C.A.V.E. setup from the previous research project (KIDS) showing an ongoing design-oriented workshop with teenagers



- Shared experience
- Engaging way to discuss urban living environments



- High setup time
- Need of (big enough) space
- Making of detailed virtual 3D-model is very time consuming.



360° environment



- 360° panorama's as rational approach
- Important details or traces of use of the environment are included
- Physical environment enriched by overlaying quotes from children and teenagers
- (often non-visual) individual experiences and opinions, socially shared values and standards, opportunities for activities etc. that the space holds (Jacobs, 2004) are made visible

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The tool opened in a browser shows navigation buttons, some image buttons and two quotes about this specific place in the environment, linked to our theoretical concepts of spatial quality.

360° environment



The tool opened in a browser shows navigation buttons, some image buttons and two quotes about this specific place in the environment, linked to our theoretical concepts of spatial quality.

- We hope that creating an **environment** where both **physical and social realities** are **connected** in a readable way creates **awareness** for the multi-layered character of space and increases clarity and effectiveness in **striving for spatial quality** by **multidisciplinary** teams (Marreel, Boonen, De Visscher & Foré, 2018)

360° environment



Children from the neighbourhood Europark during a visit of our school campus. Together with them we explored the 360° environment, which was a work in progress at that point in time.

- Interactive way of presenting the research information
- Still offers opportunities for immersive experience
- Combined benefits of both 3D-C.A.V.E. and experience map
- Speaks to the imagination of children and teenagers

Building the 360° environment

Hardware



NCTech iris360 Panoramic Camera

- 360° images processed to .jpg images
- 89 panorama images
- quality: 300dpi; 8000x4000px
- eye-heights 1m20 - 1m50
- All taken same day for consistent light and weather conditions
- Edited in Adobe Photoshop to improve lighting and colouring

Software

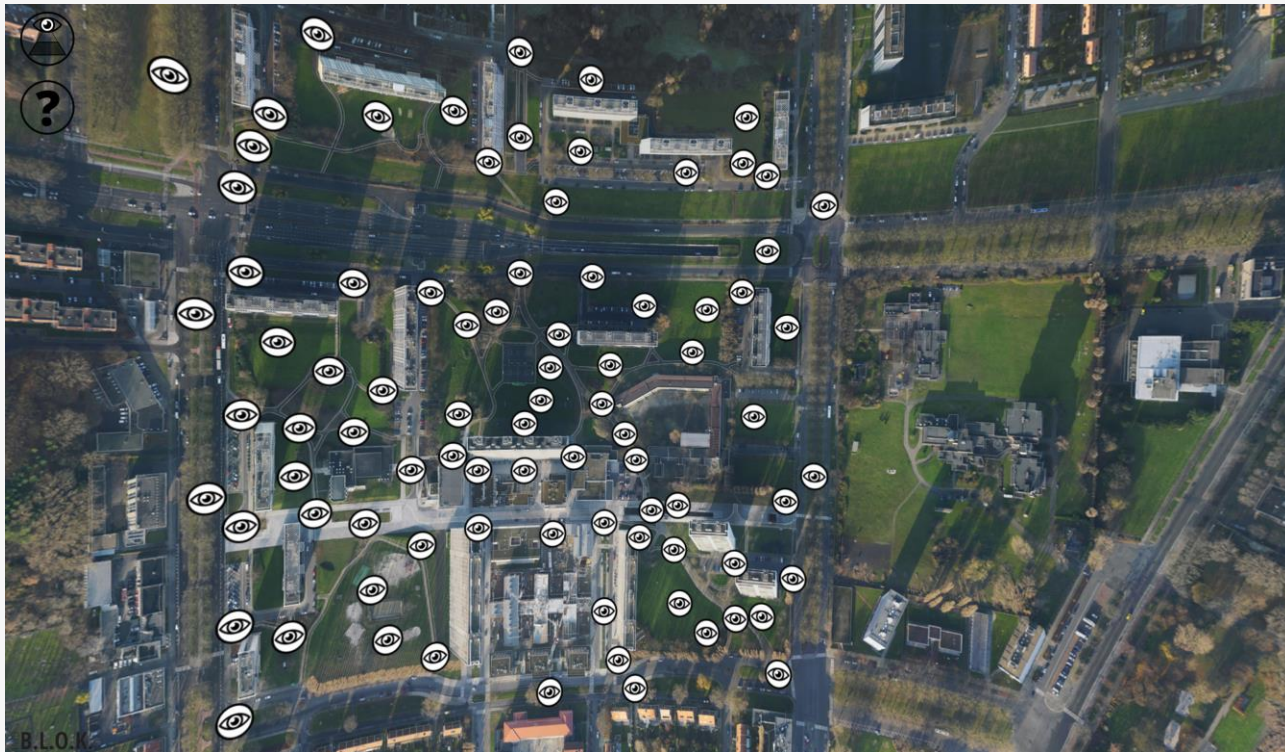


3D Vista Virtual Tour Pro

- Commercial software
- 89 panorama's added and connected
- Added quotes, navigation, hotspots, facts, images,...
- Features
 - **VR headset support**
 - Customizable interface
 - Export to own server
 - Audio function
 - External content can be added (e.g. survey)

Building the 360° environment

www.europark360.cf



Overview of the 360° locations on
www.europark360.cf

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Europark (Linkeroever, Antwerp)

Gebruiksaanwijzing 360° Europark



Welkom in deze digitale woonomgeving van Europark, Linkeroever! Je kan in deze omgeving allerlei dingen doen: op zoek naar weetjes, oude foto's of informatie over de appartementsgebouwen, op schattenjacht, een tour volgen, vragen beantwoorden óf gewoon lekker rondkijken en de buurt verkennen. Veel plezier ermee!

Hieronder vind je de betekenis van de verschillende knoppen. Klik erop of kijk ernaar met de VR-bril.

NAVIGATIE:



Verder naar volgend panorama



Open een overzicht van panoramas



Open de gebruiksaanwijzing

INHOUD:



Open een foto of filmpje



Weetjes (rode vlaggen), foto's (groene vlaggen) en vragen (blauwe vlaggen).



Open een vraag of quiz



Volg een 'tour'. Elke kleur staat voor een bepaald thema.



Open de tool in V.R.
(je hebt hiervoor een app of V.R.-bril nodig)



Ga op schattenjacht!
Pas op: in sommige kisten schuilt gevaar...

QUOTES:

Verspreid over de omgeving vind je uitspraken van kinderen en tieners. Deze zijn verbonden aan 'bouwstenen van ruimtelijke kwaliteit.'



Voorzieningen



Sociale Contacten



Veiligheid



Schoonheid



Uniceit



Personen



Toegankelijkheid



Groen en water



Bruikbaarheid



Leesbaarheid

Meer info over de bouwstenen

Short introduction to the use of the online 360° environment giving an overview of the features and content.

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Europark (Linkeroever, Antwerp)



Presentation of the tool and its content for a varied group of professionals working in the environment of Europark, Antwerp.

Different (potential) uses of the tool

Opportunities for using the tool

Main goal of **the 360° environment** was to create a **visual representation** of the research data collected through **participatory research** with children and teenagers.

However, we reflected on other opportunities for using the tool:

- **As a presentation and dialogue tool**
- **As a participatory research tool**
- **As a (research by) design tool**

[1] presentation and dialogue tool



- Three different opportunities to test
 - Children from the neighbourhood
 - Colleagues from our University College
 - People working in local neighbourhood organisations
- Young people have an easier time navigating
- People who are familiar with the area have a much easier time exploring
- Facilitated a discussion about the environment (both physical and social themes)
- Focus of discussion remained on children and teenagers

[2] participatory research tool

- Appealing technology for this age group
- Overlay in VR has advantage of children reacting to the statements of others and more in depth discussions
- Practical considerations that favour the tool
 - Walking around is more quick
 - Not dependent on weather conditions
 - Bringing the environment to the children vs. the other way around
- Many creative ideas
 - Have children map out guided walks (themed/question)
 - Treasure hunt on strategic hiding spots we know little about
 - Have children respond to statements, information or images
- Could work both for individual and group approach

[3] (research by) design tool

- Possibility to incorporate suggestions/alternatives for changes
 - Drawings/collages
 - Renders
 - Stereo rendered panorama's
- (multi-)screen projecting still possible
- Same methodology as used in 3D C.A.V.E. is possible

Conclusions

Conclusions

We believe the **360° environment** is an interesting way of **visualising the meanings and opportunities** spaces hold according to children and teenagers

A few critical reflections:

- Use of V.R.-glasses can be **confusing** for some people
- V.R.-glasses are an **individualistic experience** (can be overcome)
- attention needs to be paid to the **amount of information** incorporated in the environment
- 360° images are a **snapshot in time**
- Difficult to assess and discuss the effectivity of the tool as a participatory research tool or as a research by design tool with children and teenagers

Conclusions

We believe the **360° environment** is an interesting way of **visualising the meanings and opportunities** spaces hold according to children and teenagers

More positive:

- **enthusiasm** with which children received the environment!
- we believe a **thorough knowledge of the meanings** a space holds, should be the starting point for a good design process
- can create a **more in depth discussion** of spatial quality (space is not only a physical space)

Closing

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Thank you!

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