Appendices

A. Interview Transcript: Bernadette Janssen of BVR

BERNADETTE:
We believe if we want to take participation seriously and make it a real, integrated part of our thinking and designing process it's good to speak to people and organize a real life event where we can speak with them or design with them and see what the results are. We don't really believe in all the big systems that are really good if you want to speak to a lot of people but the designs aren't for everybody. There is a target group and I really believe in a more direct contact with them.

What we organize within our projects are sketch ateliers where we invite people to react on our first ideas and ask them if they have other new ideas, or if they can reflect on the ideas we already have. So it's both ways. It's the way of a more open "what are your ideas?" question and on the other side asking them for reflection. In our experience, not everyone is comfortable creating their own ideas so sometimes they really need some starting point for reflection. Both ways are really of value for us and it's very inspirational. Also the nice thing about it is when you talk to 10 people at one time in an atelier you can see the ideas of others and feel more connected to the necessities or values of somebody else. And they can relate to that instead of us telling them everything. They can hear it from somebody else with their own emotions and ideas. So that always works better in a group because sometimes we don't have to do anything,

we just draw what everybody says. And that works really well, so that's how we cope with the first phase of our projects. Most of the time we work in three steps: first step we are taking in all the ideas and concepts and values; second step is translating, which is something we do in our own office, so we take everything in and try to combine the ideas or translate the ideas into 2 or 3 different concepts; so afterwards, in step 3, we can reflect on that. And most of the time the reflection of that is with a bigger group and then we just hang all the ideas on the wall and invite people to come and reflect and then we also work with a question list, which works well because they can also ask us and then leave their critical points to us on paper.

BARBARA:
And the people that you involve are usually the ones that live around the space?

BERNADETTE:
Yes, mostly, but also sometimes developers or investors are coming from outside of the area but are very interested in contributing to the development of the area. [...]

BARBARA:
So you said in the beginning you take the big, open ideas, then you work here and the second time you meet with people is for reflection.

BERNADETTE:

What happens is that most clients are very interested in method but they are also a bit scared. Because it's a very open process. Of course, we have our own ideas but that is just a starting point and it can develop into something completely different, so that for our clients is scary. So they have to be really confident about the results and trust us in doing the right thing. But mostly our clients are really open to being blown away by new inventions or forms of design. So we are lucky as an office. We have very nice and curious clients.

BARBARA:
Yea because I think a lot of offices are scared to do this participation because they think it costs too much or takes too much time.

BERNADETTE:
It could be. If you start with it, then you can be really efficient. If you end with it, then it starts costing a lot of money and shit. So if you have a good start in atelier, it doesn't take much of your time and it's really, really inspiring, so the people help you to come up with new ideas and concepts. Not everybody, there are also people who are against everything but that's just a small percentage. Most of the people know that some things have to change.

BARBARA:
I'm interested in looking in the data or the ideas or the knowledge that the citizens generate so are they generating local knowledge and are they drawing? Do they make things?

BERNADETTE:
Yes, we use drawings, so we always put a big map on the table and we have a lot of images we use for mood boards and stuff like that that people can use to communicate with. That helps because sometimes people are not that skilled to speak up for themselves, so if they can draw or see me draw, so somebody, for example, you tell me as a citizen that you would like a tree in an area, I can draw it.

And people understand "oh this is a special area, we maybe don't touch it or improve it." Or "why is this on this map?" and then you can interact with everybody around the table. And also when there is a conflict, if somebody says "it should be water!" or "it should be green!", then you can draw it and make people understand that not everything is possible. There is a limited area and if you do both things, the quality is not good enough.

BARBARA:
Another thing is how you deal with this conflict, or when people have opposing ideas.

BERNADETTE:
It really helps when you draw it immediately on the table, not afterwards, but immediately, so you can see "ok, if you get your way, it's this - and if you get your way, it's that." And then they see, "ok, this is a problem, how can we solve this?" Or later, when you reflect on the concepts, you can say, "remember, this didn't work." Some of them at the end are still very angry, but they say "I understand - I don't agree, but I understand," and that's also something that is a good thing. They don't have to get their way, but they need to understand why decisions are made. That helps.

BARBARA:
Ok, so another thing is which ideas you take and design and continue with and which ones you reject or try to explain why it doesn't work. So you always try to give people feedback?

BERNADETTE:
Yes, "this is why..". Because they take an effort to come up with their ideas and put time in your project so it's really good to take everything as seriously as they do and give feedback. "No" is also an answer, but no answer is not ok!

BARBARA:
And you said that you always have some

negative people who don't like anything?

BERNADETTE:
Unhappy with everything! Whatever happens. And of course, if changes are made, and it's not your decision, you don't want it, then of course it's really a big thing to ask [of them]. People see it as a threat, not really as an opportunity. But in the participation process, they can also change their minds.

BARBARA:
And have you seen this?

BERNADETTE:
Yes, yes. This also gives us a lot of energy.

BARBARA:
When you bring the citizens in at the beginning, do you give them total freedom or you say there are some certain restrictions?

BERNADETTE:
Yea, if it is really limiting, like environmental conditions or financial conditions or restrictions of the building plot, then of course, we share that with people. But most of the times we also have a white board for the wild ideas, because even if it may not be feasible, it is still a very good idea. So maybe, if we discuss this with the local government, maybe there is a chance. Or maybe we can [at least] be inspired by this idea and translate it into something that can be realized. So it is nice to have this space on the side where anything is possible. Most of the times we try that with younger people, so students, or younger children from school. For example, with energy projects, we like to work with young people because they have a more open mind for the future.

BARBARA:
Do you have problems translating [the ideas] when they're gone and you're working in the office? Do you struggle sometimes to put all the ideas together?

BERNADETTE:
No, because we don't put all the ideas together - we make a selection of those things that combine very well, and that means that you have 2-3 concepts that are different. We always believe that there is not only one solution, so if the 2-3 concepts are equally strong then that's ok. And for me, as a designer, it's nice to work on 2-3 models, because then you don't fall in love with just one model. You get a lot of energy thinking about these different concepts. And of course, in the end you have to choose and make one design.

BARBARA:
When you make these concepts, how do you make these decisions for what goes together well? Do you ever have to throw something away that you really like but doesn't work?

BERNADETTE:
Yes, kill your darlings! Unfortunately. If we have an idea and nobody likes it, why should we proceed?

BARBARA:
So you really try to keep the citizens' ideas first?

BERNADETTE:
And the client of course.

BARBARA:
So at the beginning are the clients also involved in the brainstorming or are they separated?

BERNADETTE:
Well they start with giving us the assignment. So at the beginning they give the limitations and their own ideas. But we always invite them to the ateliers because they need to get involved and understand what the discussion and debate brings. And they want to be there because they're afraid of the open process. So they want to check it out. Most of the time they are really enthusiastic.

BARBARA:
So when you come up with the 2-3 concepts, is that when the citizens come back and choose?

BERNADETTE:
Well, they don't choose, they reflect. Because most of the time what happens is none of the 3 concepts are the final plan. Most of the time, people shop. So they'll think "oh, I really like this aspect from concept 1 but also in concept 3, there is this cute part.." but we tell them you can't just shop - it's the smart combination of things that make the concept strong. But we take in what everybody says and we come up with the new designs. And that's a combination of things, but that means you have to rethink and translate again. For us, we kill our darlings 2-3 times, start again, make new concepts. So that's fun for us, to make the concepts stronger.

BARBARA:
Usually these choices are based on the majority of people liking or disliking something?

BERNADETTE:
Yes.

BARBARA:
And everything is offline? Do you do anything digitally?

BERNADETTE:
So sometimes we design websites for projects that take a while longer. For example, we made a website for an island in the south of Rotterdam, an island with a lot of farmers. There's not much economic development but they want to be more of an island for tourists and they started with all kinds of plans and visions but nothing happened. So we said maybe you should involve citizens and developers and small business owners and see what is already there and how you can make sure those small initiatives can be combined into

something bigger. And if you map that really well and stimulate as the government and try to connect the dots and make it a bigger story and try to invite investors from other places, then you can really work on this economy. But it takes a long time, it's not done in one year - it takes 10 years. So for this project we made a website where people can interact and find each other and make sure everybody knows what the status is from the project.

[...]

BARBARA:
How do you assign value to the different desires of citizens and clients?

BERNADETTE:
Well, I'm an urban planner and designer, so I'm skilled in organizing and valuing different ideas. So I'm not only someone who combines ideas from somebody else - I have my own ideas and advice. [...] You can't make everyone happy - it's not the goal of participation that everyone gets their way. It's more that you know the ins and outs and you make the best, thoughtful solution for everyone, not only for the people who are surrounding the area. It's for one target group and not the common good. And of course there are also the politicians.

BARBARA:
Do you feel that your office is a minority? It doesn't seem that popular to work this way.

BERNADETTE:
We've worked like this for a long, long time and now it's very popular to work bottom up but we've been doing it quite a long time. I see other firms try to work in a similar way but.. I don't want to sound mean, but we are more interested and we really see the energy for our own work. It takes a lot of strength to cope with this open process because it takes a lot of effort to kill your darlings and put away your ideas and really be open. It's not given to everybody. Some designers have a different idea of how to do

their job.

BARBARA:
[talk about my experience as an architect, starchitect firms]

BERNADETTE:
Well, I think it's important to understand and let people know that you are the expert. Of course there is a difference between having ideas and being able to translate them into a design. It's my expertise. In the translation, there's a lot of your own expertise. The most fun is when you bring something new to the table that no one thought about. When you can make a new intervention based on all the ideas of the people, that's your expertise and skill as a designer. To bring that kind of gift.

BARBARA:
The things that people come up with, is it more like "I want a park here" and "I want water here," and it's not really connected?

BERNADETTE:
No, it's not really integrated. Mostly it's small ideas or big, "world peace" improving ideas, but most of the time it's not an integrated story. And that's ok.

BARBARA:
So you are the one who has to combine.

BERNADETTE:
Yes.

BARBARA:
So you're having a face-to-face conversation, combining on the spot, rather than having a thousand pieces that you have to try to put together later.

BERNADETTE:
No, no that's not good. Because there's no space for translation. You have to translate. You have to be able as a designer to cope with all of the ideas and get inspiration. You can't stay at this level - you have to bring it to a higher level. Otherwise there will be no

innovation.

BARBARA:
Yea, we're trying to figure out the best way to make this digital platform a conversation between people and experts, but right now it's still very separated. For example, we gave people little blocks to play with and put where they want, but of course everyone comes up with a different layout. So how to combine all these blocks, when everyone is in their own world doing their own thing, it's not really easy. So you think that conversation between people is really important?

BERNADETTE:
Yes, conversation between people and for the designer to have time and a moment to take in everything and really work through it, to make a researched design to translate the ideas into a concept. A concept is never just putting everything together, it doesn't work that way. You can't put everything and there will be no sense or innovation if you do. People bring in what they already know - the street, the tree, the park. They're not designers and that's ok.

BARBARA:
So at the end, what do you have? One concept?

BERNADETTE:
We mostly end up with two products - the end result, one design with diagrams, pretty pictures, and a collage of images and identity that you want to make. And also a workbook or document where they can see all the research and in between steps we took.

BARBARA:
And in that book you have all your citizen meetings and ideas?

BERNADETTE:
Sometimes it's a big book with all the ideas and sometimes it's just the conclusions, as we see it.

BARBARA:
And this is taken to the client or architects?

BERNADETTE:
To the client and sometimes we make something for the architects or we work together. Depends on the scale. Sometimes there is work already for the architects but it's not always the case.

BARBARA:
And this book with all of the process, do you think it could be in a better format? Is it read or people just look at the conclusions?

BERNADETTE:
Depends on the client. Sometimes they need the research to back up their own story because they have to go to their bosses or other organizations or other clients and investors they have to work with. So they need the research to cope with questions because I'm not always there to help them. And sometimes it's just something they put in the drawer and sometimes they don't even want it. And that's ok as well. Sometimes we only make the end result and we throw away the research.

[...]

BARBARA:
How long does it take usually?

BERNADETTE:
2-3 months or a year, depending on complexity and scale. Sometimes you have to do 3-4 ateliers at the beginning because the group is too big. So if there's 100 people we are just a small office, so we can't cope with all the people. You do the same atelier but in different places or at different times of the week so people are able to come during the day or evening or weekend. And that takes a longer time because you have more results to reflect on.

BARBARA:
So you said you have drawings but do you also have people writing or submitting any text or facts?

BERNADETTE:
No, we only work with drawing and images. Because otherwise you would get these long stories.

BARBARA:
And do you ever have historical input from citizens?

BERNADETTE:
Most of the time the people who know the area really well can tell you more than you can tell them. So it's really nice to hear all the stories and emotions. Sometimes there are a lot of obvious things such as monuments or special places that everybody knows that are meaningful and nice to keep, but sometimes you don't know. Sometimes people love this one tree because everyone had their first kiss there and it's more emotional and then this spot can be more important than all the monuments. So you have to ask - otherwise you don't know.

BARBARA:
And do you see a difference between older and younger participants? That maybe the older are less open to change or they want to preserve tradition and the younger more looking to the future?

BERNADETTE:
No, it's not always a question of age. Sometimes you just have the more conservative types and more adventurous types at all ages. But there is a difference between the really new developments like energy or how to deal with water. And there you can see some differences because a lot of older people have the fear of water so getting water involved in the public space or city development is very scary for them, or they have a very negative attitude towards it. Younger people don't have this experience and are more open. But most of the time we have this cool old guy or girl who is really open to new ideas, especially in

cities like Rotterdam where change is good and citizens are really open to change. They really want something new. So it's not really an age thing. And there's also a difference of course in political color. So sometimes a village or city is more conservative and sometimes it's more liberal. So that depends of course on the assignment we get.

BARBARA:
And when you have such a conservative place, do you try to push them in a more liberal direction or it's not your job?

BERNADETTE:
It's not my job. They get what they want, and something more. Of course you want to improve the world but the client gets what they can handle. If you are too ambitious, they can't cope and the project is doomed. You have to really look at what fits with the client and the surroundings. And that's a pity sometimes. But then you think, within 5-10 years more will be possible. Slow steps.

BARBARA:
And do you ever think about the fact that cities are changing and the people you have participating may not be there using the space in the future?

BERNADETTE:
Well yes this has to do with the target group. If we see that disbalance between what do we do now and what is good for the future, then we organize another group of young people, or we invite outsiders and ask "what if you were a citizen here?" or "what if you were to buy a house here?". Because then you need a broader perspective. Otherwise there's no debate. Otherwise people say I agree and don't inspire.

BARBARA:
[asking about her opinion if this could be done online]

BERNADETTE:
I think it's hard to be interactive. But at the beginning maybe you can do it online to make sure everyone understands the limitations.. Or, I don't know, I just really don't like computers.

BARBARA:
[explaining dummy test bed]

BERNADETTE:
But semantic analysis is a lot of work. You have to organize it all and make it work and everyone writes a paragraph. We just talk in a group for half an hour and we know everything. We organize things in good and bad and have this knowledge and sense of the place. This is not something you can read in text. It's hard to translate that creative process to the computer. I think it's not possible. It's not a goal to make everything more complicated with computers - only if it makes the process easier. And more fun.

BARBARA:
Do you have any ideas about making it more fun?

BERNADETTE:
We always think about the location. Not in some boring office where no one gets inspired. We think about nice snacks to make the atmosphere nice. We think about how to make the drawings more accessible or beautiful or more inviting so people take the pen and draw themselves. It needs to be easy for them. So we also train our designers to be open, enthusiastic, energetic and accessible. If they act like God then everyone is scared and vulnerable. The atmosphere needs to be really good. It's fun to make a drawing together. And at the end, people always say "you have such a nice job!". And it's true.

Main Takeaways

BVR works in 3 steps:

1. Idea Generation (experts + citizens + other stakeholders)
2. Translation (experts)
3. Reflection (experts + citizens + other stakeholders)

They believe in a more personal approach with smaller groups (max. 10 citizens).

If there are a lot of people, they will hold the same "ateliers" (workshops) multiple times.

They believe in talking and drawing together on one map.

Insights

The expert's role is to connect and unify the individual ideas given by citizens into a whole. Citizens contribute their personal experiences and what they know. It is the expert's role to innovate on that and bring it to a higher level.

It's a smart combination of smaller ideas that makes a concept strong.

You can't program or automate the creative process. You can't replace urban designers with an algorithm to turn data into a logical, coherent concept. You need human intuition to innovate.

The expert facilitates creativity. They encourage citizens to express themselves and draw citizens' ideas when they are not comfortable with it.

The expert should be there working with the citizens at the same time. They can draw together and have a conversation, guiding the participants and figuring out together what works and does not work.

The expert should not receive all the information at the end without knowing citizens' thought process. This results in a lot of disconnected, individualistic ideas.

Citizens should know any important restrictions before they start ideating, but it's also nice to save any "wild" ideas that may not be feasible at that moment.

The expert needs to give feedback in the moment so citizens understand why their ideas work or do not work. They may not agree, but they should understand. Drawing each idea in the space helps to explain feasibility.

Citizens need to discuss with each other and work together. Sharing helps them step out of their bubbles and see other perspectives. Together they can create something more rich that pleases more people.

The point of participation is not to please everyone. You cannot combine all of the ideas of every individual. You have to see what ideas work together and how they can be logically combined into a few different concepts.

B. Interview Transcript: Frank Werner of KCAP

BARBARA:
[explaining U_CODE]

FRANK:
Well participation is a very broad topic. It can go from informing the neighborhood of what you're doing and asking for feedback from citizens, which is common practice in NL, to co-creation or even turning it around, letting the stakeholders make the design. And as a professional, whether you're an architect or in the government, you test if it works. This level I would say is not really part of professional practice but I have some experience with it, as a citizen.

[goes on to explain that he and a team of architects challenged Rotterdam to design their own neighborhood through "Right to Challenge"]

Just because you're a citizen doesn't mean you represent all citizens. That's very important to remember. A lot of politicians don't even represent all the people who voted for them, as we know.

[...]

A lot of people are not used to being active in urban design. Normally you have an evening where you show the designs and sometimes there's 10 sometimes there's 100 people but usually not more and it's always the same people who show up. Normally people are sitting there and waiting for you to tell them your ideas and then they start reacting, instead of really thinking together. So what you see more and more now as a next step in this process, you try to involve them more by at the beginning sharing your ideas and analysis so you can get input at an early stage. You get more active influence.

[...]

Generally you involve people in what they can contribute themselves.

[...]

Creating a sense of community is very important in urban design. Even if you do it in a traditional, top-down way, planning the streets and blocks yourself, you have to make sure there is enough space for people to actually start using the design. [Explains a housing project in Amsterdam with communal gardens where people share the green space.] And this project was not done in a very participatory way but the citizens have gotten very involved and stayed involved.

[...]

From an ideological state of mind, it's not that you should have everyone participate - but it's good to have input from the stakeholders.

BARBARA:
[Asking if citizens only give verbal feedback or do they ever draw for these projects]

FRANK:
No, that is quite difficult. If they draw, they are usually architects or designers.

[Explains how in their neighborhood they

worked with citizens to make a planting design for in front of their houses, helping them sketch "because most people are not used to doing this."] You help them in making the design. And this could even be done by the municipality, who facilitates these sessions, giving people a manual that gives them options for what they can do and gives them freedom to choose. So the city will do the planting according to what the citizens want but the citizens need to take care of it.

BARBARA:
Do you think it's important to have this face-to-face interaction or can it be done online?

FRANK:
It depends a bit on the scale. I can tell you from my experience that you can do both. In our neighborhood project we had a lot of supporters who were interested and reading our newsletters as well as liking our posts on social media.. But we also know nowadays that likes don't really communicate the value of an idea and they don't necessarily mean that people agree with it. Maybe it can if you have a really good tool, but I don't know. My experience is that not everyone is interested in being very closely connected to this. We had about 600 people living in our street and 300 were subscribed to the newsletter, which is very high, and of those 300 I think about 30-50 were really actively involved. A lot said "ok, it's good that I'm informed, maybe sometimes I'll attend a meeting and say something, but I don't want to be really involved in the design or in the maintenance etc.". And in my experience, design only works when you are sitting around the same table with everyone and you can have a discussion and interaction. But of course, collecting ideas or data, you can do it over social media. For example, we had an agreement with the city that we had to update the sewage system. And we asked through a survey on social media if people were interested in connecting their individual water collection system to a collective, city one, because these houses are old and still

not connected. This of course costs more money, but if we do it collectively, maybe we can find subsidies and work together. So a survey was very effective for this. We got the information very quickly, we had all the addresses, we could talk to the municipality quickly. So you can use social media and internet for this kind of data but to really generate creative ideas, you cannot do it like that.

BARBARA:
[explaining the Dummy Testbed] Do you think there is value in letting people design like this with little blocks?

FRANK:
[starts explaining Kaisersrot project, about 20 years ago] This was one of the first projects trying to design from the bottom up. Looking at the individual demands or wishes, collecting them all, and trying to make a whole out of it. This was incredibly difficult, but we developed a tool with some computer wizards in Switzerland, where you could begin adding some parameters, such as plot size, heights, but also external factors such as infrastructure and nearby facilities. And we could organize individual plots and we did an experiment here in Rotterdam. It wasn't online then but people could fill in a form by hand. 5 questions about how they wanted to live, such as in an apartment or row house, with a garden or no garden, these kinds of questions. And we could translate it into Excel, which was then imported into the parametric design tool, and it organized certain plot structures out of it, including infrastructure. And that experiment showed that you can create a bigger thing out of only individual moves. It is possible. The question is if it has quality, because if you ask people who live in cities or neighborhoods what they really value about the place, it is of course very often something collective. They talk about the green streets, the nice park, the nice water, they talk about not having much traffic noise. They might talk about architectural style, like they live in a beautiful 1920's house, but

all their neighbors live in such a house, so people in their choice of living environment, they already have something in mind in a more collective identity. And that, of course, is not just created by asking everyone what they like. So what is necessary top-down to create identity and quality? Because quality is not by definition giving everyone what he/she wants.

BARBARA:
[...] Yea I never thought about this parametric design.

FRANK:
[Explaining neighborhood built in Arnhem with this tool.]

Yea this tool was quite groundbreaking at the time and it still is not very developed. You get this discussion of whether design is this creative, abstract process or something more rational.. Probably something of both. But in the end it's about the parameters. You can have one, two or a thousand, but the choice of which you are using and what you find important is crucial. And this, you could say, is the same that you are doing intuitively in design. You are making choices between factors and constraints that you have to use, and you constantly think, "ok, this one is more important than that one," but if you put it in a software, you can at least rationalize it. You can say, "ok, if these are the 5 most important constraints, this is what I get." And if you change it to a different 5, you get something else. And that's what we did. We experimented with what factors are dominant. You start with a lot of ideas and then you put the structure in, so you're cooking a kind of soup. And the interesting thing is you can mix a lot more than you can before. You are always working with these kinds of chunks - a street of apartments, a street of row houses, etc. They all have different plot sizes and you can't easily control them. But with parametric software you can easily control and mix and match, so a row house next to an apartment next to detached houses.

BARBARA:
So it's possible to mix and match to make a few concepts?

FRANK:
Yea, what we did was more individual, asking people the same set of questions and every time that 10 new people answered the questions at this fair, we printed out a new design. Basically, if you saw all the designs, they didn't look that different, but you saw that at first someone who was on one side of the neighborhood was later on the other side. You had people who wanted to be next to someone else and you saw them gradually moving closer and closer. What happens with parametric design is that not all parameters are 100% fulfilled, but it looks for an optimum, constantly.

[...]

People come up with very concrete ideas of what they want.

BARBARA:
Do you agree that people generally come up with smaller ideas and it's the job of the designer to connect them together?

FRANK:
Not necessarily. You can also talk about the bigger picture with people. It is a little bit different, because if you talk about abstract things, everyone will say they want green, everybody likes that, but you can ask people "ok, do you want green OR parking, because they both cost a lot and you can't have both". In the end, what do you find more important? Are you going to vote, that 55% want more green so they win, or you do a little bit more green and a little bit more parking, but less "more"? So being an urban designer is really about balancing these things. Mostly people are not used to making this choice. You have to tell them it's not all possible. You have to at least give people insight into the consequence of their choice. And you have to make them

aware that if they want more green, they will lose parking, etc. If you want to get quickly on the highway, the street may become dangerous and your children may be in danger.

[...]

Urban designers working on commercial projects usually do a very abstract research, looking at statistics and who is our target group, who could want to live here, etc. That's usually what happens. You have a lot of market research groups that are dividing the population in different target groups. But my experience is that it's too easy to think about target groups when designing, because you are building something that will be there for 100 or more years, and we don't really know who is going to be there in the future. Even in 10-15 years we don't know. We don't even know what will happen to mobility. There are a lot of things you can't predict. I'm really in favor of using data and it's the future btu the question is what kind of data? Just collecting data, it's fashionable, but it's not enough. You really have to be aware of the drivers for urban development and which things are just trends.

BARBARA:
So what do you think is important to know?

FRANK:
Well with traditional mobility, like cars and bikes, there's much more sharing, much less car use in cities, let alone the self-driving cars. Need for parking spaces is going down which has a huge impact on public space and how we are dealing with buildings, how we reserve space for parking, etc. Our economic timespan for buildings is 50 years but we think that in 20 years there will be almost no use for parking.. So why are we building it? Should we not be building something else that can be transformed? So those are very relevant things. But it's very hard to predict. All you hear are opinions. With driverless cars, people think suburban sprawl will increase, and others think cities

will densify because the cars don't need to stay in the city. Both can be true but there are no scientific way to predict.

BARBARA:
So when you are satisfying peoples' needs now, you still have to think towards the future and try to predict what will happen.

FRANK:
Yes, it's all about flexibility and coping with changes of use. And sometimes old ideas come back.

C. Interview Transcript: Alena Siarheyeva of ISEN-Toulon

BARBARA:
[explaining my thesis]

ALENA:
So I think when we talk about urban design, the most important thing is to understand what the input provided by the citizens is. If it's a picture, then we will have to process this data in one way. But when we work in VR, so we basically work with 3D models, and those 3D models, because people work in the same environment, you can take a cube that is located at an x,y,z space, so many people draw cubes in the same space, and you can somehow analyze this graphical data. We were for example thinking of heating maps, so you know what location people tend to place this cube, what the size of this cube or object is, and then we can even think of a shape. But basically the challenge is to provide an environment where people create their models. And then, because the data extension and data type is the same, then you can do a lot of things. So think about these graphical models in 3D space and then you can try to analyze this graphical data. I think you should look at data analytics methods which already exist, data analysis of 3D shapes. Then that would be possible. If there is semantic meaning attached to every graphical model, then you can analyze the semantic meaning of each shape, if people for example describe this model with more data.

[explaining BIM, professionals working on

the same model, people working on the shape outside, electricity, etc. Different layers of data in the same model.] Then if you have access to it you can analyze it. And people are working in the same data space.

BARBARA:
[asking about touch table]

ALENA:
It's a touch screen that you can put as a table or a screen. Barnabe is developing a prototype that would allow citizens to create design proposals in this 3D VR world. And then people will be able to visit it with VR headsets. We have not worked on data analysis but this was initially our idea. There is a big bulk of work to do before but I think this data analysis stuff would maybe not be in the scope of U_CODE, so I'm happy you're exploring this question.

BARBARA:
Do you plan to test with people how the screen and interface work?

ALENA:
Yes, we are going to do it. We are in the middle of the process. We started with the analysis of people using traditional boundary objects like pen and paper or clay, now we are analyzing how they engaged with these objects and how they used them to express their ideas of design. What was helpful, what was missing, what limitations they had. And against this data we are developing

interfaces to test on April 3. So we are in this initial testing phase to test utility, functions that we propose, and later we will also work on usability in later stages, end of April and beginning of May, in order to improve the interface.

BARBARA:
And when they use this interface, does it look 3D?

ALENA:
Yes, they can orient themselves. You feel that you're in that world because you see mountains, you can visit the city, you can zoom, you can unzoom, you can see the topography of the place.

BARBARA:
When they play with this, do you give them restrictions from the brief? Like the building height can't exceed x, we need this percent of greenery, etc? Or do you let them do whatever they want?

ALENA:
Well, this is something that needs to be better explored. Because on one side, if we impose too many restrictions, than people will spend a lot of time trying to analyze "ok, can we do this or not" and actually we have observed in public participation processes in Marseilles that in very early stages of design, even professionals do not have full information of restrictions and what is possible and not possible. So I think it doesn't make sense to try to introduce too many restrictions in the game. The second point is that we don't think it makes sense to present these restrictions in written form. We believe that the interface can vehiculate this. For example, what we also observed, is that people really need to understand the scale. We're not sure we will be able to develop it, but when people say "I want a building here," the interface will automatically be able to analyze and compare the surrounding buildings and adjust the size of the new building appropriately. In this way, if they say they want a 9 story building, they

can quickly see it's the only building that tall in the area and maybe adjust their idea. We think this needs to be embedded in the program and scaffold the creativity process. It's just natural. People don't want to make something stupid that goes against physical or legal constraints. People really do care and want to make feasible designs.

BARBARA:
[explaining parametric design]

ALENA:
This is the first time I hear it and need to read about it. But basically when citizens come to participatory workshops, they have 2 hours, so people will not spend 1.5 hours reading all the legal documents trying to understand the constraints - what they want to do is express their feelings, emotions, what is possible, what they would like to do in this space, what it should look like. They just need some minimum constraints and it's up to professionals to incorporate those ideas into meaningful proposals.

BARBARA:
When you watch people express themselves, are they comfortable drawing or making these cubes or are expressing themselves more verbally, like "I want a tree" or "I want a garden"?

ALENA:
They say it's really different when they engage with materials. It was really interesting because one of our session participants had also participated in a session which was run by public authorities in this city and she said they were just talking. And she said "it's so great to engage with this material. We create something really concrete together and we begin talking about real things because compared to that other session of just talking talking and talking, I had the impression that it was in vain, because we just talked about usual things. We did not innovate. We just came up with some basic ideas like we need some bike lanes, we need that, and

the conversation was not so concrete when people talked about what is possible to do in this space." So people liked it but it depends on the sensitivity of people. This needs to be tested more later. Some people like working with paper. One participant said "I really love it because it's so easy to cut and delineate spaces." Another participant said "paper takes too much time, I don't like it." So it depends on how people like to work and what materials they like engaging with. Some people like to work with little characters like little bicycles but others don't because they're not proportional with the model. So it really depends on how people feel about different materials and tools they have.

BARBARA:
Do you think an older person would be able to use this screen? They must be somewhat visual, right? Or can you bring someone in who thinks they're not creative and they can't draw? Or is it too shocking for them?

ALENA:
This is something we would like to test because in our first focus group that we did with classical, traditional material, there were people who felt very good with those materials and at ease, and some didn't really know what to do and said it was difficult for them. So we will see how those different profiles react to the touch screen.

BARBARA:
Do you think it's important to have the experts there at the same time with the citizens as they draw or the citizens can create on their own and the experts look at it later?

ALENA:
Well what we really understood is when our citizen group was creating this model, it was meaningful to them because they created meaning together. It was like a children's game and they were having a lot of fun, and when external people were coming from outside and asking "what is

this?" we needed to explain. So for us it was making sense but to those outside we had to explain. So to me it's very important that professionals should be in the same place with the citizens and listening and working together on this sense building. Because at the end, this prototype or model is meaningful when the meaning is shared - alone it doesn't make much sense.

BARBARA:
[explaining dummy test bed, that everyone created a different design, problems to combine and analyze] Do you think it's possible to make this kind of workshop experience including thousands of people?

ALENA:
I think in virtual worlds we can really make it possible. People can have an avatar and meet and this avatar can be in this space and participate in this model making. But still I think that we should imagine these people working together in groups of no more than 10 with a professional. So they meet in this virtual world with an avatar and they negotiate and make sense together. I think the engagement with those 3D models is important because it really becomes concrete. It's not the same as talking. People can visualize. And the most important is they negotiate and make sense together. It's the collective negotiation and sense making process.

BARBARA:
So maybe ideally it's 10 citizens and 1 expert. Do you think it can be many many workshops of this size going on over the course of a week, maybe with a total of 100 citizens, and then professionals trying to combine the results of all of these workshops?

ALENA:
Yea you could have virtual rooms and people can join and work in their group and present their work at the end. And somehow they can visualize what others have done. I really think that the organization cannot

be flat, with every individual creating something on their own, because people need to discuss. People need to make sense together. People need to understand what professionals say and professionals what citizens say. So the objects are vehicles for sense making and consensus finding.

BARBARA:
Yea the urban designers I've talked to have told me that the expert needs to be there because citizens come up with individual ideas but the expert needs to be there to create unity and connection and flow.

ALENA:
I think this work of unifying and connecting can be done afterwards. I think you have these 2 hours to work with citizens and you need to understand what people say. People talk about their personal experiences and how they want to feel in this space and I think this is the most important. They use those materials to express how they want to feel.

BARBARA:
So the citizens are the experts of their own experience.

ALENA:
Yes they are and then it's up to the professionals to understand and translate it into meaningful professional language.

BARBARA:
And the citizens and experts work in one virtual space, correct?

ALENA:
Yes.

BARBARA:
I know you haven't really gone into the data part, but you think that through some kind of software it would be possible to layer all the results and see what the majority of people want in different areas?

ALENA:

Yes when you have the same graphical model you have different proposals but because all data is structured then you can do this analysis. I think it's possible to imagine this kind of heat map analysis you see on flat webpages but for 3D models and to see how, for example, this left corner is populated or filled with different objects. Then you go deeper and see what objects they put - trees or buildings or parking, etc. In your model, your data is structured and there is meta data describing it. So it is possible. The challenge is to provide this initial environment.

BARBARA:
A lot of professionals can't explain their process and say there is no way to program it. It's a creative process and they have to leave some things out that people say. Do you think there's a way to make it more automated or experts will still have to go through the data very intuitively?

ALENA:
I don't think that our aim is to automate this process and replace professionals. They are still professionals. I think the idea is to provide professionals with data, some information which can inspire and be useful for the creative process. So if professionals see ⬚ of people drew a green place with many trees and relaxation in this spot, it should provide a clue for them what it should be like and what it should not be like - concrete or glass, whatever. So I think the idea is giving meaningful information of how citizens would like to live in this space.

BARBARA:
Have you thought about how these virtual models are given to experts later? Is it a file that they open and start designing within or is it something else?

ALENA:
To me it's more like a file against which they design. They have their own software and will just look at the output provided by citizens and just take what needs to be

taken.

BARBARA:
Do you think this output is something the expert can interact with or is it a printed report? Because I think most participatory design results turn into reports but I'm not sure if they look at them.

ALENA:
I think of course they can visit this virtual reality, put on a headset, use the touch screen. It shouldn't be a report. The most important is to communicate the desire of the atmosphere. And this is very hard to communicate in written form. It should be visual.

BARBARA:
Have you thought about if they receive feedback during the process or after? To show them which ideas were taken and which not?

ALENA:
Oh yea for sure, there should be a meeting point for when professionals take the input and then present what they did and why. So "you wanted to do this but we couldn't do it for x and y reason," or "you wanted this but we took it to another place." So yea I think there should be such a meeting. And actually in Marseilles they have planned such a meeting to see what will happen.

Really try to see this 3D data analysis, if there are any prototypes.

Main Takeaways

Alena and her PhD student Barnabe are part of the U_CODE project in France. They are developing a touchscreen interface that can be used as a table or vertical screen that citizens can interact with to express their ideas for an urban space. They work in a 3D virtual world where citizens can use shapes and icons to create their design (with experts) and experts can visit this design later with a VR headset when it's

time for them to translate their ideas into a professional concept. They initially intended to do data analysis of these 3D models but probably won't have time.. So they are happy that I'm exploring this.

Insights / Ideas

Citizens should work in groups of no more than 10 and with an expert present. This is a process of "sense-making and consensus-finding" and experts will not understand the designs fully if they are not involved. Making is more valuable than writing or talking. When you make, you already have something concrete to talk about and play with. Words are harder to visualize, understand and discuss.
Restrictions (from the initial brief) should not be given in written form - they should be integrated in the software. Citizens have only ~2 hours to express their emotions and desires for the space and they will spend too much time analyzing the limitations when they should be creating. The program they work in should automatically and naturally constrain their designs; ex: correctly scaling buildings they draw, maintaining required distances between buildings or widths of streets, maintaining a set % of green area (if this is a requirement) as people create. > Look at what role parametric design can play here.
But.. sometimes professionals don't even know all the restrictions at this early phase. So maybe these restrictions have to be added as they become known.
These 10 person workshops could be done in person but also online to reach more people. If the target group of users is very large, the same workshop can be executed many times online, even at the same time. The point of the workshop is for citizens to express their desired atmosphere for the space - and it needs to be communicated to experts visually. Atmosphere cannot be understood in a flat report - it needs to be experienced.
People are experts of their own experience. The professionals' job is to listen, look and

translate this.

Each workshop needs to design within the same exact virtual space. As in BIM design, where architects and engineers layer diverse information in the same 3D model, citizens also need to have the same, defined 3D space as their canvas. This makes data analysis possible later because the designs can be easily layered on top of each other and each x,y,z coordinate analyzed.

Look into heat maps and data analysis of 3D shapes. Like the heat maps used on 2D webpages to see how far people scroll and what they click on, this could be made 3D to see what areas of the space people place objects and if there is a majority in program (ex: 70% of people placed greenery in this corner of the space). The data should have levels of detail (going deeper into "greenery" to see if they placed trees, grass, etc.) and could have descriptive textual data attached to it. > Meeting with Birgit Hausleitner of the Urbanism Department next week about this.

Professionals absolutely need to give feedback later about what ideas they used and why.

D. Interview Transcript: Birgit Hausleitner of TU Delft

BIRGIT:
Ttalking about GeoHub] Now we have programs that can mainly design or programs that can mainly analyze usually in GIS but there is hardly a program that includes also evaluation mechanisms. So what you think about is something I also want to have. You should have something where someone makes a design proposal, people give an evaluation, and you have immediately the evaluation of what effect does it have, for example, in terms of livability, green connectivity, all kind of properties we know that cities should have, that isn't there. But there is this one program that can do something like that.

So the people who developed GIS, one person teamed up with a researcher who was thinking how do we design with a more evidence-based way of working, so the GeoDesign Hub is one of the first platforms built for collaborative design. So what they actually do is provide basic maps, somebody provides evaluation maps, and you can basically have online workshops with people and all of them draw together. It gets immediately evaluated what is the effect of what they do. [explaining the website]

And it's with normal citizens. [..] This is more rough because it's about regional design but you are more interested in spatial design. But it's meant for collaboration. One of the very few programs that exist. They always sketch the problem, for what and who

should use it. Then they explain how to set the scope, collecting data, building maps, create the project, upload, and conduct the workshop. [...] Even before they let people participate, they create evaluation maps of what is important, for each topic, that then allows for very quick evaluation. [...]

Each group discusses a different topic - tourism, environment, etc. And out of each discussion comes one map. [...] This is two dimensional, there is no 3D at the moment. [...]

BARBARA:
[asking is it more important what and where people draw or why they draw?] Should we be focusing on where they place things, or digging why they want a park?

BIRGIT:
It depends on what is your question. I don't think one is more important. I think it's interesting to see where they place things and find out if it's a conscious decision, this specific place? This is super important because if it's a place they are concerned with, they have an idea why they place things there. I do this a lot with the students, to understand when you have an existing place, to work with hearts and broken hearts, and stars, to understand what is core to the residents' wishes. And where do they see a problem, a very important location that has a problem, or a very important location that has high potential. Because usually you start

with these things as priority. When there are no hearts on something but there are on another location, people probably see the first as a given and the second as more important. To understand what qualities they focus on, that could also be one of the things. Just a quick thing to the general model I see, one of the key problems in representing space is that this comes very much from architectural modeling and not from urban. The focus is very much on the built and not the un-built. You have green for the park, but nothing for the in-between spaces that can be core to the people.

BARBARA:
[don't know why they did it this way]

BIRGIT:
But in general now your goal is to link the information you find here to a specific surface or line. Either to a block, or building, or aggregation unit, because you have to link the data to space. And then to find an evaluation, to see how many people like - what I would do, if you want to deal with this information

BARBARA:
The designers right now just got a PDF of this information and it's really hard to translate. [explaining Alena's touch screen interface] I'm wondering what is really important to the designer from these models.

BIRGIT:
So your intention for your thesis is what designers can learn from these kind of exercises?

BARBARA:
Yes.

BIRGIT:
And less about the modeling itself.

BARBARA:
Yes, I think something can be learned from each design, but it's not clear how

to interpret. For example, one of the DTB designs has many green roofs, so you could conclude that this person really likes green roofs, but the specific location or form of that green roof maybe is not that important. So maybe this information needs to be translated to a higher level to the designer, just saying "include green roofs." But I'm not sure what is more useful for designers.

BIRGIT:
I think all the questions you address are useful, because most of them are not really solved. We are at this turning point where we have a lot to analyze, but we don't know how to bring it into design. So you can really choose your viewpoint. Take that one that you're most interested in, because I can't tell you this is more important than that. But let's say that the main obstacle is not so much learning from the citizens - we defined a lot of ways to do that - but it's actually how do you make the step of using that information in design. So I can even imagine that since you have a lot of different outcomes, you started with telling that it's co-design, which means finding more the common base, which is integrated in all that. So it could also be that you try to find out what is in common or what structure remains when you overlay them all. Some are just outliers in a way.

BARBARA:
Yea I had interviews with urban designers asking how do you start designing with this information, even 2D drawings, and nobody could give me an answer.

BIRGIT:
Well, there are so many different ways of doing it that there you will not find the right answer. There are so many different approaches, and we all work differently.

BARBARA:
Yea and I asked well what challenges do you have or are there opportunities where I can help and they seemed ok with how they do things. Can you at all generalize how you

would do it - looking at majorities, at trends, themes?

BIRGIT:
I think what I see U_CODE's DTB doing right now is gathering a lot of ideas from the residents and you have to re-interpret what they mean. And this is clearly about building common ground. I have my students go out with maps and citizens draw on them and then we overlay them and we can see ok, this area is clearly a point of tension for many people, or a place of potential. So you get a better idea of what can be done. And there might be issues that you as a municipality want to realize but actually it's not the agenda of people at all, so you can conclude that you have to lobby for that or you take it from the agenda, because it's not necessary. But what I see the most is developing a tool to find common ground. That means integrating evaluations or proposals that people make in a geo-reference system and see where do they overlap.

BARBARA:
I agree. [Explaining that there are written comments on each design but they are not connected well to the models.] Is there a way already to attach verbal, descriptive or semantic information to 3D shapes?

BIRGIT:
Yes. You know, I don't work with models like this because I believe in abstraction. But you can.

BARBARA:
[explaining DFI masters] I'm looking for the urban designer perspective. I am the one thinking about the designers.

BIRGIT:
I think for you the most helpful thing is to talk to not just one person. Each of us will have a different opinion. You can use us as interview input. You can even do a workshop with students.

BARBARA:
[explaining workshop idea]

BIRGIT:
[recommending colleague about environmental behavior, focusing on the "why" question]

BARBARA:
[explaining previous interviews, that citizens give little ideas and designers unify these ideas into something bigger]

BIRGIT:
Yes, they are mediating.

BARBARA:
[asking about workshop]

BIRGIT:
[talking about colleague using board games with people] It's also important to understand that when you ask people questions, you get an uninformed answer. You can say residents always know about their environment, but at the same time, you get uninformed answers. I led workshops in Vienna before I came here and they said "I want a bed of roses" or "I want this exact iron bench" but in the end it's not about the bench, it's so they can sit. You have to always find out what is the need, not how it should look like. And it sometimes helps when you give them.. [talking about Rotterdam project] They started in a very smart way. They didn't just as how much green do you want or where but it was important to visualize alternatives for them, giving them an indication of what each choice would mean for air pollution, for safety, all kinds of topics. And ONLY giving them alternative options gives a more informed choice, because they don't know what is possible. Right now they put the park somewhere on the map but maybe it's because they only know parks in such locations. In this sense, the why is very interesting. You have to inform people what choices there are, and then they make a more informed decision, and the why gets less important.

BARBARA:
[agreeing, explaining..] Do you give options, do you give restrictions? Do you let them go?

BIRGIT:
This really depends on the municipality. Sometimes you have more enabling and sometimes more restricting authorities. I lean more towards the enabling because you can always come back and leave something out or shift it a bit, but first starting with enabling. So ideally it's more open. [going to repository] This thesis describes really nicely how she did decision making in a game process. So what are the processes and decisions being made. She assigned roles in the game but you already have roles. It's about sketching a profile of needs for each role, such a bookshop owner, and figuring out where to best place their building. She fixed the program that needs to fit and the people had to negotiate where to put everything. So in this sense there was limitation with program.

BARBARA:
So each approach is different. Some are blank canvases, some are filling in empty spaces.

BIRGIT:
[mentions Kaisersrot]

BARBARA:
[...] Do you think it's good to have it this way with the parametrics? That no matter what citizens design, the street widths stay correct, etc.?

BIRGIT:
This project is not so much about the parametrics, but as an urban designer I think about the flexibility. Of course you have the public streets fixed, but people have too much freedom. It's good if you want an optimized solution for each person but not good for the future as a city because you have these individual designs that

are tailored to a specific family. So it's not flexible for the future. It also creates these awkwardly shaped parcels that are hard to work with, so there is a plus and minus for everything.

BARBARA:
[how could this theory adapt for a public space?]

BIRGIT:
Maybe a main comment is [in the DTB] it's not about the scale of the resident, it's more about understanding of public services, what information can you get about flood services, what do you need for fresh water provision, the environmental things? Mitigating heat islands, how to get enough sunlight, etc? How to not get too much wind? A lot of points that can be conditioning BEFORE you bring in residents.

BARBARA:
So what can citizens contribute when there is so much expert knowledge or conditions that have to be taken into account?

BIRGIT:
You can think about, for example, environmental interventions that often have a lot of multi-functionality. Flood defense, for example, if it's not flooded it can have a different purpose. Usually in the NL these flood zones are combined with parks, nature parks, even on a smaller scale with playgrounds, flowers that are important for the ecosystem, biodiversity, flowers that are important for the bees. So there is a lot of things that you can link together and residents can really help with multi-functionality. You can understand what the residents need. They have much more experience of the area and fresh ideas of how they'd like to use a multi-functional space. So you need both sides - experts and citizens.

BARBARA:
[explaining U_CODE's Stuttgart situation]

BIRGIT:
So your thesis is about advice what should be integrated. You have a major task of outlining what the program should do in order to be useful for designers. I think you will end up with different categories.

E. List of Interview Questions

What does your participatory process typically look like?

What tools / methods do you use and when? What kind of constraints are there for citizens?

Do you work offline, online or both?

What kind of data do citizens generate?

How do you process this data?

How do you manage opposing ideas / conflict? How do you assign value?

What is the end result? How do you present all of this data?

What is the best way for urban designers to experience this data? How would you like to do it?
What information is the most important? The least?

How do you actually design with this data?

How do you give feedback to people to make them feel heard?

F. Clusters and Quotes from Interviews

A qualitative analysis was conducted with the responses from my interviews with Urban Design professionals. Relevant quotes were highlighted then clustered. Each cluster was summarized into a statement or "aspect."

It is important that the following aspects inform and / or are incorporated into my end design. The bulleted quotes are evidence for each aspect. Included are the number of professionals who expressed support of this aspect during the interview but this does not mean that the others disagreed - it simply did not come up in conversation.

You have to ask citizens the right questions to get useful answers.

"Don't ask about local knowledge in general - ask, for example, 'What part of this area is historically important to you and you want to keep?'" - Aleksandra GMP

"We like to ask easy questions about people's daily lives and experiences. The needs of people are most important and how they live in and use that space." - Johan ZH

Diversion in ideation can and should happen but based on a clear starting point (or problem statement), not a blank space.

"Citizen ideas should build off of restrictions within the brief." - Aleksandra GMP

"If it is really limiting, like environmental conditions or financial conditions or restrictions of the building plot, then of course, we share that with people. But most of the times we also have a white board for the wild ideas, because even if it may not be feasible, it is still a very good idea. So maybe, if we discuss this with the local government, maybe there is a chance. Or maybe we can [at least] be inspired by this idea and translate it into something that can be realized. So it is nice to have this space on the side where anything is possible." - Bernadette

"You can think about, for example, environmental interventions that often have a lot of multi-functionality. Flood defense, for example, if it's not flooded it can have a different purpose [...] and residents can really help with multi-functionality. You can understand what the residents need. They have much more experience of the area and fresh ideas of how they'd like to use a multi-functional space. So you need both sides - experts and citizens." - Birgit TUDelft

Citizens are not always comfortable designing - or even drawing.

"A lot of people are not used to being active in urban design." - Frank KCAP

"Sometimes people are not that skilled to speak up for themselves, but if you tell me

as a citizen that you would like a tree in an area, I can draw it." - Bernadette BVR
"It's not a goal to make everything more complicated with computers - only if it makes the process easier. And more fun. We think about how to make the drawings more accessible or beautiful or more inviting so people take the pen and draw themselves. It needs to be easy for them." - Bernadette BVR

"Some people like working with paper. One participant said 'I really love it because it's so easy to cut and delineate spaces.' Another participant said 'paper takes too much time, I don't like it.' So it depends on how people like to work and what materials they like engaging with. [...] There were people who felt very good with those materials and at ease, and some didn't really know what to do and said it was difficult for them." - Alena U_CODE

Citizens need to design together, not individually.

"Creating a sense of community is very important in urban design." - Frank KCAP

"Design only works when you are sitting around the same table with everyone and you can have a discussion and interaction." - Frank KCAP

"When our citizen group was creating this model, it was meaningful to them because they created meaning together." - Alena U_CODE

"The most important is they negotiate and make sense together. It's the collective negotiation and sense making process." - Alena U_CODE

"The nice thing about it is when you talk to 10 people at one time in an atelier you can see the ideas of others and feel more connected to the necessities or values of

somebody else. And they can relate to that instead of us telling them everything. They can hear it from somebody else with their own emotions and ideas. So that always works better in a group because sometimes we don't have to do anything, we just draw what everybody says." - Bernadette BVR

Experts should be present during the citizen design process (offline or online) or at least pre-design the questions and tasks citizens receive (online).

"Experts should be there to give information." - Aleksandra GMP

"When external people were coming from outside [our session] and asking 'what is this?' we needed to explain. So for us it was making sense but to those outside we had to explain. So to me it's very important that professionals should be in the same place with the citizens and listening and working together on this sense building. Because at the end, this prototype or model is meaningful when the meaning is shared - alone it doesn't make much sense." - Alena U_CODE

"We get the most useful information when we put some work into the session in advance." - Johan ZH

[talking about GeoDesign Hub] "Even before they let people participate, they create evaluation maps of what is important, for each topic, that then allows for very quick evaluation. Each group discusses a different topic - tourism, environment, etc. And out of each discussion comes one map." - Birgit TUDelft

"When there is a conflict, if somebody says "it should be water!" or "it should be green!", then you can draw it and make people understand what it would look like

and that not everything is possible. It really helps when you draw it immediately on the table, not afterwards, but immediately, so you can see "ok, if you get your way, it's this - and if you get your way, it's that." And then they see, "ok, this is a problem, how can we solve this?" - Bernadette BVR

"Well, I think it's important to understand and let people know that you are the expert. [...] The most fun is when you bring something new to the table that no one thought about. When you can make a new intervention based on all the ideas of the people, that's your expertise and skill as a designer. To bring that kind of gift." - Bernadette BVR

Making is better than just talking.

"[When you draw something], people understand "oh this is a special area, we maybe don't touch it or maybe we improve it." Or "why is this on this map?" and then you can interact with everybody around the table." - Bernadette BVR

"They say it's really different when they engage with materials. It was really interesting because one of our session participants had also participated in a session which was run by public authorities in this city and she said they were just talking. And she said 'it's so great to engage with this material. We create something really concrete together and we begin talking about real things because compared to that other session of just talking talking and talking, I had the impression that it was in vain, because we just talked about usual things. We did not innovate. We just came up with some basic ideas like we need some bike lanes, we need that, and the conversation was not so concrete when people talked about what is possible to do in this space.'" - Alena U_CODE

"The most important is to communicate

the desire of the atmosphere. And this is very hard to communicate in written form. It should be visual. " - Alena U_CODE

Form, function or location - none of these is more important than the others when it comes to citizen data. The "why?" behind the form, function or location is.

"The "why" and the needs behind are most important for us." - Aleksandra GMP

"You have to ask them the reason behind what they draw. Why did they place it there?" - Johan ZH

"People talk about their personal experiences and how they want to feel in this space and I think this is the most important. They use those materials to express how they want to feel." - Alena U_CODE

"I don't think one is more important. I think it's interesting to see where they place things and find out if it's a conscious decision, this specific place? This is super important because if it's a place they are concerned with, they have an idea why they place things there." - Birgit TUDelft

"It's also important to understand that when you ask people questions, you get an uninformed answer. You can say residents always know about their environment, but at the same time, you get uninformed answers. I led workshops in Vienna before I came here and they said "I want a bed of roses" or "I want this exact iron bench" but in the end it's not about the bench, it's so they can sit. You have to always find out what is the need, not how it should look like." - Birgit TUDelft

Data generated by citizens needs to be processed into "designerly" language.

"Citizen input needs to be translated into urban design language - 'we want greenery' into a specific % of greenery which we understand. You can't just give us a list of ideas or facts or even individual models. Everything needs to be processed." - Aleksandra GMP

"Mostly [citizens give] small ideas or big, "world peace" improving ideas, but most of the time it's not an integrated story." - Bernadette BVR

"You have to translate. You have to be able as a designer to cope with all of the ideas and get inspiration. You can't stay at this level - you have to bring it to a higher level. Otherwise there will be no innovation." - Bernadette BVR

"People bring in what they already know - the street, the tree, the park. They're not designers and that's ok." - Bernadette BVR
"I think this work of unifying and connecting can be done afterwards. I think you have these 2 hours to work with citizens and you need to understand what people say." - Alena U_CODE

"Now we have programs that can mainly design or programs that can mainly analyze usually in GIS but there is hardly a program that includes also evaluation mechanisms. [...] You should have something where someone makes a design proposal, people give an evaluation, and you have immediately the evaluation of what effect does it have, for example, in terms of livability, green connectivity, all kind of properties we know that cities should have - that doesn't exist." - Birgit TUDelft

"We are at this turning point where we have a lot to analyze, but we don't know how to bring it into design. The main obstacle is not so much learning from the citizens - we defined a lot of ways to do that - but it's actually how do you make the step of using that information in design." - Birgit TUDelft

Not every citizen idea will be incorporated into the professional design.

"We don't put all the ideas together - we make a selection of those things that combine very well, and that means that you have 2-3 concepts that are different. It's the smart combination of things that make the concept strong." - Bernadette BVR

"We make decisions based on the majority liking or disliking something." - Bernadette BVR

"You can't give everyone what they want - you are the designer in the end." - Johan ZH

"What I see the most is developing a tool to find common ground. That means integrating evaluations or proposals that people make in a geo-reference system and see where do they overlap." - Birgit TUDelft

"So what is necessary top-down to create identity and quality? Because quality is not by definition giving everyone what he/she wants." - Frank KCAP

Every office and designer designs differently and this cannot be generalized.

"You can't tell a design office how to design - each office has their own style and process." - Aleksandra GMP

"There are so many different ways of doing it that there you will not find the right answer. There are so many different approaches, and we all work differently." - Birgit TUDelft

"I don't think that our aim is to automate this process and replace professionals. They are still professionals. I think the idea

is to provide professionals with data, some information which can inspire and be useful for the creative process." - Alena U_CODE

Citizens should be given options to choose from.

"A lot of people don't know what they want. Do you want A or B more?" - Johan ZH

[Talking about a project in Rotterdam] "They didn't just ask people how much green do you want or where but it was important to visualize alternatives for them, giving them an indication of what each choice would mean for air pollution, for safety, all kinds of topics. And ONLY giving them alternative options gives a more informed choice, because they don't know what is possible. Right now they put the park somewhere on the map but maybe it's because they only know parks in such locations. In this sense, the why is very interesting. You have to inform people what choices there are, and then they make a more informed decision, and the why gets less important." - Birgit TUDelft

"You can also talk about the bigger picture with people. It is a little bit different, because if you talk about abstract things, everyone will say they want green, everybody likes that, but you can ask people "ok, do you want green OR parking, because they both cost a lot and you can't have both". In the end, what do you find more important?" - Frank KCAP

G. Creative Session Results

Below are the clusters of post-its created during the Creative Session with design students, with each post-it listed below the cluster name. Some may not fit perfectly and / or be a little "crazy". The bolded post-its are the ones I found most new / interesting / valuable.

Co-Creation

Layered papers (drawing papers): every citizen gets a template and creative tools

Also include kids if it's a school region, or there is a school nearby

Something like SimCity

Make a competition for the best design

Pin-board to pin shapes to

Show a map and ask citizens which block / part is most important

Layering existing, designer and citizen data

Design party, BBQ, pub crawl?

Simulate the designs

Model spatial template

Interactive 3D model

Legos

Legos representing function not form ->

conclusions made from this data

Each block has bubbles of what is important

Instead of a design for each person, one design for all

In a group design, show how many times a zone is changed

Comments are put on a precise location

Social Media

Personal photos

Instagram page to retrieve / upload clustered values or a Pinterest-like website to gather all the collages

Use social media to comment the models and other citizens' projects

Make the citizens "fight" / discuss with each other

Digest citizens' words / semantic analysis to understand opinions / feelings

Create a "comic" telling the design story

Gather social media data of citizens to see their values

AI + VR

Use AI to make sense of the data

Mind-reading

VR group urban design

Change the location of things using superpowers

Create a model of the "average" citizen with AI

AI checking the expressions and reactions of citizens

AI where you have the model of the area and you get to choose more detailed items for different locations (?)

Vocal / Video Recording

Streaming real life videos of people and their encounters with their environment

A smart complaint / wish recorder collecting data in general and turning it into a word cloud

Voice recording of the complaints and comments. "Real Smart One" that can detect when someone talks about that place.

Recordings attached to model

Vocal recording attached to model

Create an image of the opposite of citizens needs (to encourage debate)

Let them reflect on a moment they experienced (a bad one so they can explain the reason)

Record comments with each modification

Photos / Moodboard

Images of example projects

Images of designs people like (inspiration for designers)

3D models of other projects

Citizens current problems before the design "game"

Sharing current photos and photos of desired atmosphere

Photos representing values / needs

Mood board showing bigger vision

Photos of environment attached to spaces / volumes

Grouping similar images of values / needs to show trends

Connect similar ideas of the mood board

Combine data with 3D / spatial visualization

Statistics

Overlay the designs

A data "heat map" showing which regions have more consensus

Digesting the heat map into percentages designers can use

A live billboard pie chart showing what people want - in photos

Statistics of values (health, sun, etc)

Different shapes for each value / why - heart for health, leaf for nature, paintbrush for aesthetics, etc. Shapes placed over objects on the area

Categorize the "why" of the citizen

Rating system for each design

Demographics

Social group of the sector

Divide demographically the population

Basic questionnaire at the start, end or both

Ask the expectations of each citizen with their design (what is their goal)

Showing statistical demographics of each design

Comments on the changes made by previous person

Not Fitting Anywhere

Areas change color with the "why" - layers of preference

Award to the best design

Idea A vs. Idea B in a boxing ring

H. Transcript of U_CODE Tool Evaluation Session

PARTICIPANTS 1, 2, 3 = P1, P2, P3

P2: If you have an empty plot, you can already have certain blocks that people can place here and there, so at least you know you can provide the proportions of the blocks already to them. So that's something they can play with like Legos. And then they should also choose like, yea, this Pinterest board, I think that's really good.

P1: I like it, but as well, sometimes I know from experience in real architectural projects, when you meet with a client and the client has come with his Pinterest board, it's very difficult then, because the ideas don't match together. But they want it. Even if it's not possible, they want it. And probably the same situation with the city. "I want a park" in a city which isn't offering that.

P2: But I think to open the discussion, I think it's important that you can show pictures that came in my mind - in my mind I have this. Maybe it's not possible to realize but I have something in my mind. (all agree)

BARBARA: Yea and it's more valuable than this ugly blob.

P3: But I think it's interesting what you said, that it's important to know WHY you like this, and not just putting things in a 3D model. (all agree)

P1: ?? It's also kind of like an internet forum, with comments progressing. It's good if the comment has some kind of explanation. Maybe in order to put a comment that is valid, you have to give 3 reasons.

BARBARA: [explaining that it shouldn't be just lists but processed, presenting semantic analysis] Would it be helpful if this was associated with a 3D block?

P1 & P2: I think would be useful.

P2: But it's also difficult because for every nice comment you have also "this is shit." So how to sort of evaluate what is the valid opinion?

BARBARA: Maybe it can be combined with the statistics? You can already see that the red here is not as big as the green.

P2: But this has already been processed - the bigger the word, the more times it was used?

BARBARA: Yes yes. And this was associated with the DTB.

[...]

BARBARA: Most of these tools are not thinking about the directions given to the citizen, just giving them total freedom. Do you think it's important to give them some kind of questions before they start? Maybe "what is the local history here? Is there anything we need to preserve?" Or give them very specific tasks?

P3: Yea I think that's quite essential.

P2: Yea for example in this case [talking about VR walk-through], they have to understand that it's not about seeing nice

buildings around, it's really about how high is the building. They may not like it if they see something like this [blank object]. So if they understand, they know what to focus on.

P1: Yea I think this view is more for showing ok, we can have a low, medium or high-rise building here. Just to present the 3 options, but not much else.

BARBARA: All the designers say you have to give citizens some direction, some options.. [...] They should be able to express themselves but give them somewhere to start.

P2: Yea I think that's the problem because things like this [talking about Kaspar's interface] are lovely, people can just give a smiley face, it's easy for them, but as designers, of course we would like more input. What exactly is it that you like? But then it becomes more difficult. It's not just adding a smiley anymore. That could put people off, I don't know.

BARBARA: What do you think about vocal recordings associated with objects? Or it can be written.

P3: Yea, that would be awesome actually. Some people might have problems with recording themselves though.

BARBARA: It could be part of the workshop that instead of writing the comment you record it.

P2: In one of these things there was this hashtag, but it was only for functions or locations, but what if it could also be describing the atmosphere - #sunny, #lunch?

BARBARA: What do you think about the different views? Should they be designing from this kind of bird's eye view? Looking down? Or it should be more fixed? Designing in a life-size view? And how would you like to look at their model? From above or walking through it, etc.?

P2: Well when they put a building somewhere, I think it's good that they can check this [talking about life-size view].

P1: From a citizen point of view, it's more rounded. I think in general people can't read maps. I think something to indicate sense of scale is super important.

P3: But I also think VR programs like this [talking about VR tool], they still have a lot of problems with perspective, it can even seem very dystopian so.. I don't know if that's the perfect tool either.

BARBARA: Would it help to have windows for reference? To understand the scale better? Maybe later when it's developed they can more experience the place.

P1: I think it should be kept abstract. To have a balance between abstraction and also giving a sense of scale. If you use windows, I think people will think 'ok, this is the final result.' But if you can distinguish the levels while keeping it abstract, that would be ideal. Color for functions, levels, text maybe. So it's still obvious you're in a virtual world but you do get a feeling. But there's no conditioning like if there's an arched window or square window, etc.

BARBARA: So you like if there are little trees or people around instead for a sense of scale [like in the Playground]?

P1: Yes yes. And I think this one is good [talking about the touchscreen] because you have some reference what is around it. So you have something to compare to.

BARBARA: Do you think that the comments or vocal recordings are the best way to get the 'why?' out of people?

P2: Yes some comments would be great. (all agree)

P1: Yea, if all decisions could be

commented, so there's a why behind each.

BARBARA: But in the end, not just a list of 100 comments, but a summary for you? Something that you can look at really fast?

P3: I think I would also really like to read individual comments and not just generalizations. (V agrees)

P1: Yes or at least the comments should be able to be filtered by type of user - I want to know what children think, I want to know what women think. A younger person vs. an older one.

BARBARA: Ok, so you can dig more?

P1: Yea just some different kinds of filters.

BARBARA: [writing down 'demographic, gender'] Yea all your suggestions I will put into my first interface design.

P1: But you are using one [of these tools] or..?

BARBARA: [explaining to start with touchscreen interface, but taking pieces from other interfaces] [...] How is it with the restrictions you have from the city? Do you know from the beginning or you learn as you go? What do you really start with from the city?

P1: Well in a real project you start with what is possible - law. Regulations, what heights, what setbacks. What restrictions are on the lot. If something justifies breaking the rules, there is already some thinking behind it. But first you have to just look at what constraints you have and then within that you start creating. So in this case, that is really missing. There could be some kind of feedback mechanism, so when they do something, [the program] tells them this is not allowed or possible. Or how can you justify that? It's not always sacred and you can overpass it, but to give some sense of what is possible and the reasoning behind it.

So maybe [the user puts] a 2 hectare green space but the program tells you you cannot have so much green because it doesn't rain enough in Spain.

BARBARA: [agreeing]

P1: Of course you could also say it in a more positive way. How can you explain the potential instead of saying what you cannot do?

P2: Can this be a repetitive process?

BARBARA: Yes!

P2: So first they have this freedom where they can put so many buildings how they want but then there is a 2nd round where you simplify the regulations, then they realize they maybe have to change some things.

BARBARA: [agreeing, that it goes from more open to more narrow]

P2: Yes because then it's something that they can be involved and they go along with the process with us.

BARBARA: But do you think there is value in giving them this empty space with no limits at the beginning?

P3: I think even for a designer it's a very difficult task to have an empty space at the beginning. (all agree) So I think you should always have some sort of preset.

P1: I think these kind of interaction sessions are more fun when they become a kind of game with some rules that you have to find your way out. Something co-creative. Otherwise if you have a blank space you start throwing stuff in it without thinking too much. Like a strategy game. You can have different roles in the game and interact in that way. Could be useful.

BARBARA: So you could give them a set

number of housing blocks and ask them to arrange them in different ways.

P1: There could be different steps. So the first step is more abstract, so what do you want here, housing, sports, etc. without telling where things are. Maybe the system tells them ok in this area you can have this amount of housing or this amount of green. So it's not so much of telling them at the beginning what you can and can't do but more of playing around with it. You can already go to the core of the decision making.

P3: The thing with this is what do we want to achieve with things like this? Do we want ideas for design or do we just want to know what kind of activities people want to see here? Because this is already - the preconditions for this workshop (the DTB) are like a first year urbanism assignment. (all agree)

BARBARA: I think they want some hints, some clues of what people would want. They know that people are only experts of their own experience or daily life and not designers. (explaining U_CODE meetings, that architects don't know how to use this information created by citizens) They say it's not specific enough, not asking the right questions. Every project is different so some projects you want to know how people use the space already, where the sunlight is, different things. So if it was asked in this way at the beginning, maybe it would generate better results.

P3: Yea and I think you said it how it is exactly. People are experts of their daily life. That's where the value of their input is.

BARBARA: And if you could at the end see the results of the questions you had at the beginning, if you could go into the model and see those results, I think then it would be a lot easier for you to pull it into your design than just looking at 100 different Lego models. (all agree)

P1: Yea then at least you can see some patterns that you could extract easily.

P2: Don't you think that if people could play with this VR then they wouldn't really pay attention to or focus on the task itself? Because it's the experience of VR.

BARBARA: That's what I told the engineers. (explaining difficulty of using VR)

P2: Yea and those are exactly the people (older people) who you want to talk to.

BARBARA: (explaining what the easiest way would be to use the VR)

P2: I was working in a VR room before and I know how people handle it.. Or can't handle it.

P3: I think VR would be great in a later stage of the design for people to experience and then give comments. Just to simulate a walk in the neighborhood and they don't have to, it's just such a pain in the ass to pick the square and put it somewhere. But walking is cool.

BARBARA: Yea more when you are choosing materials or something.. Then it's useful.

P1: Yea it can be used in a later step.

P3: But are all these tools meant to be used in a workshop situation or available online..?

BARBARA: (explaining, explaining virtual room idea)

P3: Yea and I think it would be beneficial to have an architect there to assist you.

BARBARA: (talking about a neutral facilitator) Someone who is an expert who knows the laws or rules but they're not pushing the project in a direction the firm wants. (all agree) (explaining BVR process, facilitator there to draw people's ideas) Do

you think it's valuable letting people create like this or is asking questions enough?

P2: It could really be a step by step process. More effective than just talking. (V agrees) If people are willing to participate, maybe they are more willing to compromise with the architect because after a while they will understand that designing is not so simple.

P3: Exactly! It's for them to realize what a huge task it is to place 5,000 apartments somewhere. And also maybe help them see what rules or restrictions you have to play with.

BARBARA: Yea to understand that not everything you want can happen.

Ok we have only 8 minutes left so I don't know - do you have any more suggestions or tips for me as I make the interface next week? Think of what YOU want to see, the easiest, most understandable way for you to get information from citizens.

P1: I think it depends on the stage of the project. I would use this for an existing area or I would give them a project that we have to get approved and they can assess it in some way.

P3: And also sort of establishing do you want to make a game or do you want to make something that is actually helpful for the design process.

BARBARA: Well, whatever makes sure that the citizens' ideas are listened to and translated - not just something stupid they do and the designer throws it away. (all agree) That's the whole purpose, to make them feel heard and that they have contributed. To be fun but also useful.

P2: For me what we discussed is missing in all of these tools is the steps. So if you can set up the process and name the steps, so the first one is just abstract freedom, next is adding regulations.. What are the steps, how many?

BARBARA: So how the tool can be used differently in each step.

P1: Yes I think it can be on a spectrum of more general to more specific. At the beginning it's a playground, by the end you are using the VR to make a final evaluation. But you won't start with so much information and reality at the beginning. You have to decide what question(s) you want from the citizens. It is not their job to design strictly to this brief - that's ours.

P3: Also what is lacking from all of these is the freedom to just draw or make blobs or whatever. They're all fixed blocks you are putting in the model. So maybe a tool for sketching or I don't know.

P1: Yea I think it could be like a Sketchup thing where you can manipulate the given shapes. (all agree)

BARBARA: Yea I also heard from designers that the programs are really using only volumes so the citizens may not even think about the empty spaces in between. Unless the designer is there to ask, maybe they won't even think about it because the tool isn't giving them that option. Maybe there's a paint bucket where they can paint a space in concrete or grass etc.

I. U_CODE Tool Evaluation Results

Comments written by participants on individual screens during workshop.

GOOD
NEEDS IMPROVEMENT

Dummy Test Bed (DTB)

Too much of precise brief

Too much information

Too abstract?

Possible to combine comments with specific area? "This I put in here because.."

Why did you like it?

Good to know the reasoning behind the design!

Creating detailed models might give unrealistic expectation
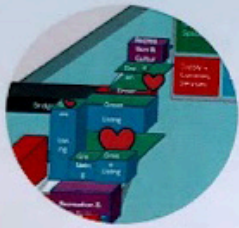
Good that they can show which detail they like - but would be useful if they could elaborate on it (add comment)
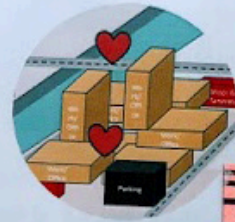
Who is writing these texts? ("Hyperdense work and office area")

The Playground
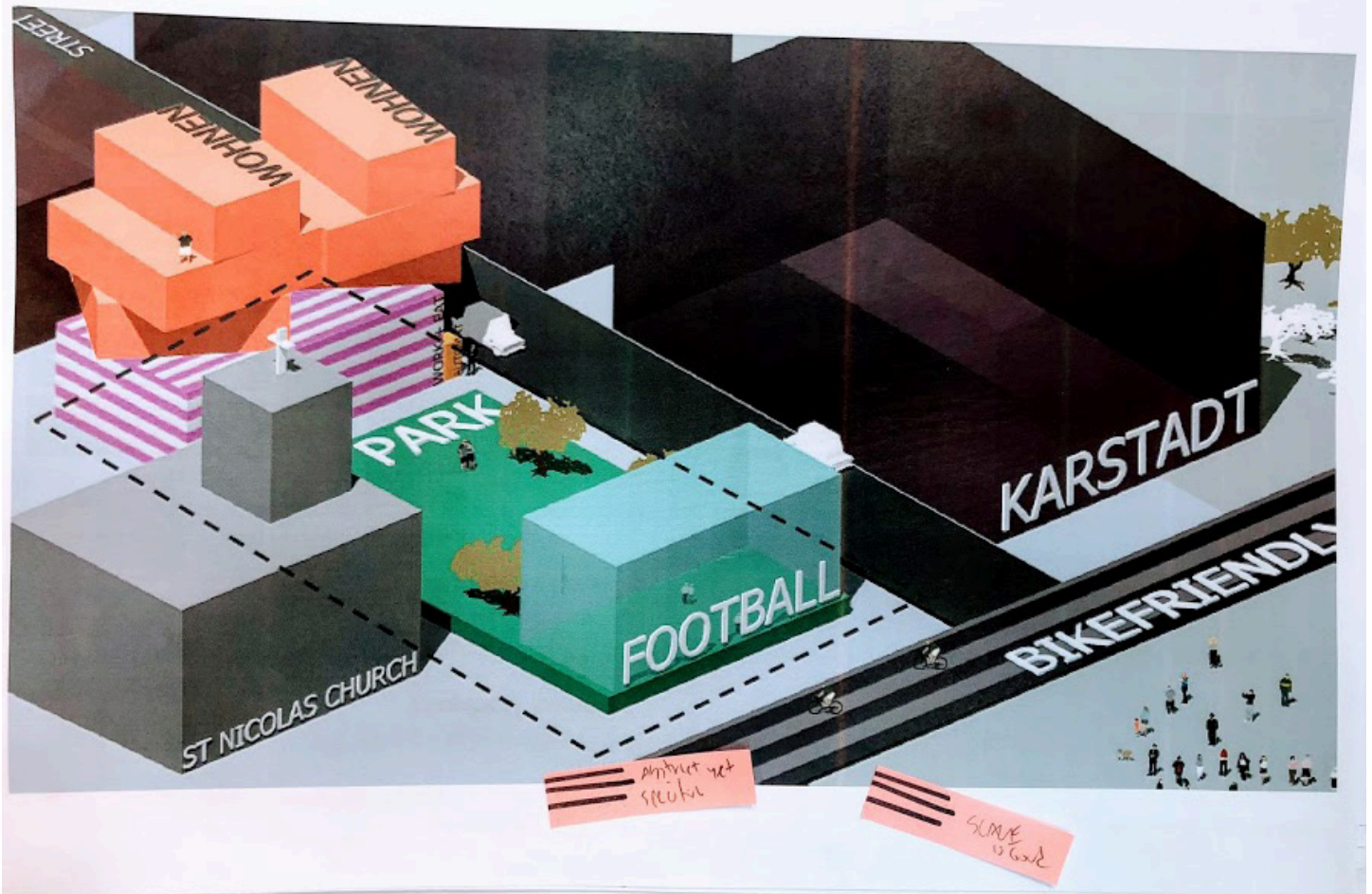
Abstract yet specific

Scale is good

ideas	+	colors referring to functions	+	shapes	=	city module

ideas
- #kindergarden
- #musicschool
- #fancyconcerthall
- ...

colors referring to functions
- Urban Tissue
- Living
- Supply + priv.Services
- Culture + Recreation
- Green
- Office
- Workshop + Industry
- Traffic
- Municipality, Education

shapes
- Cubes
- Larger Cubes
- Places
- Streets + Ways
- Additional Shapes
- Trees + Decorations

city module
- #JUICESHOP

(handwritten) # is good, but would be helpful to have # not only with functions, but with experience, adjectives
#lunchspot   #kids   #picnic
#meetingplace   #walkingmydog

Concepts + ideas

is good but would be helpful to have # not only with functions but with experience, adjectives (#lunchspot #meetingplace #kids #walkingmydog #picnic)

shortcut to #ideacreator

time until result is shown

trash bin for Ideas

team participant at work

map to build on, fills up during playtime

animations of citizens and moving cars

piece library:
-drag pieces for exact placement
-special pieces like trees and decorations may also be found here
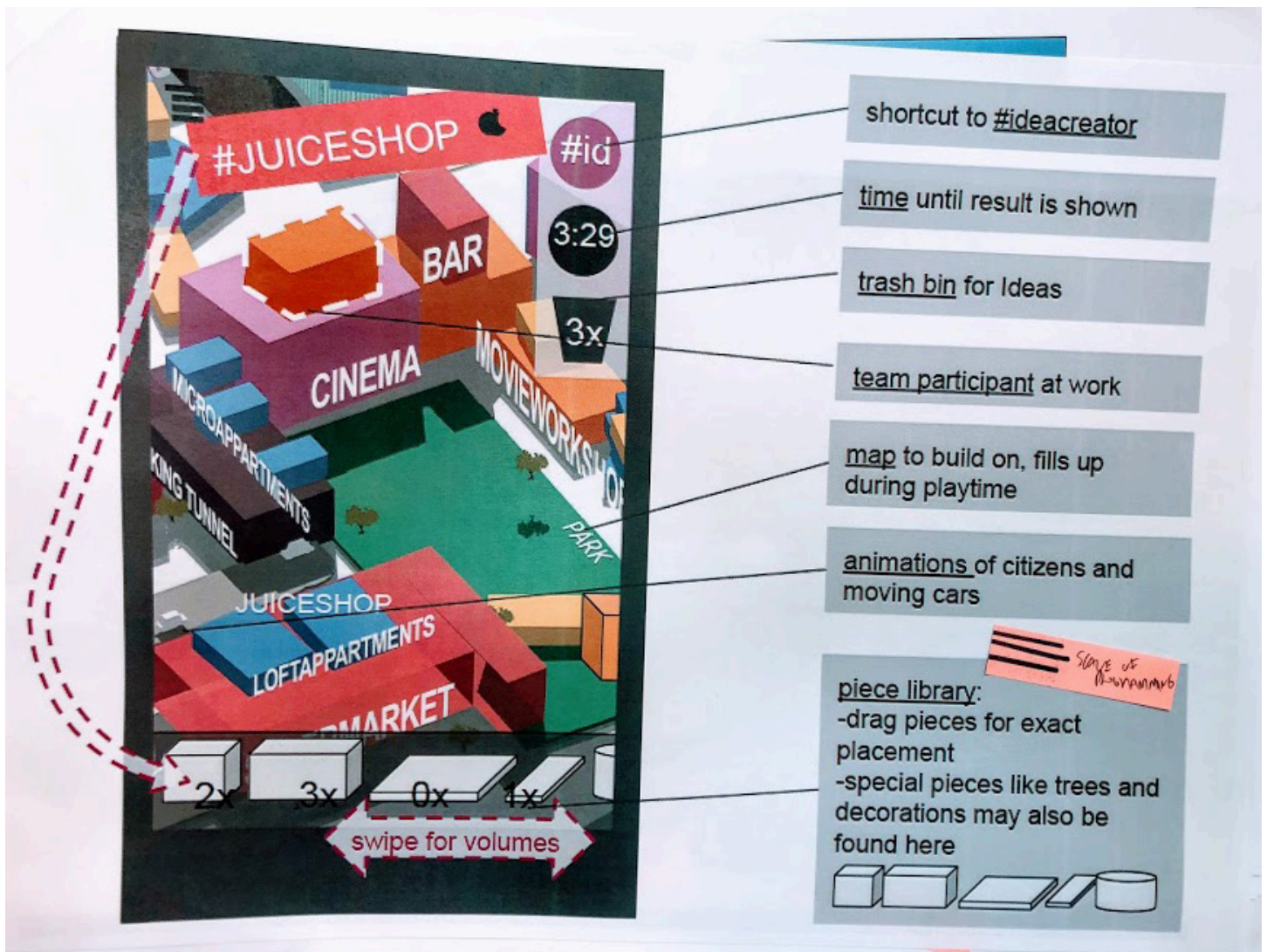
Scale of programming

Optis VR Tool
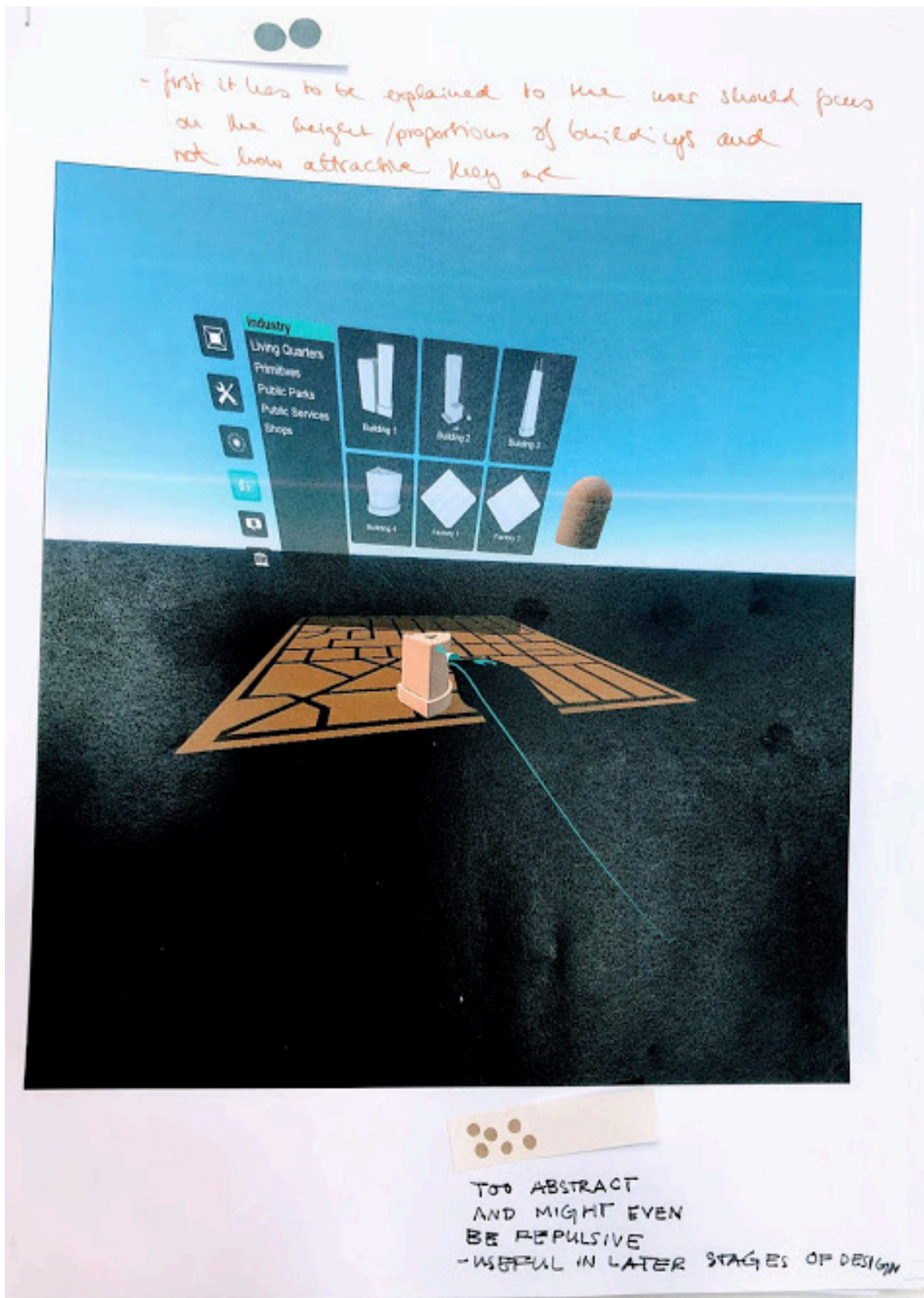
First it has to be explained to the user (that they) should focus on the height / proportions of buildings and not how attractive they are

Too abstract and might even be repulsive - useful in later stages of design

Multi-Touch Screen Table
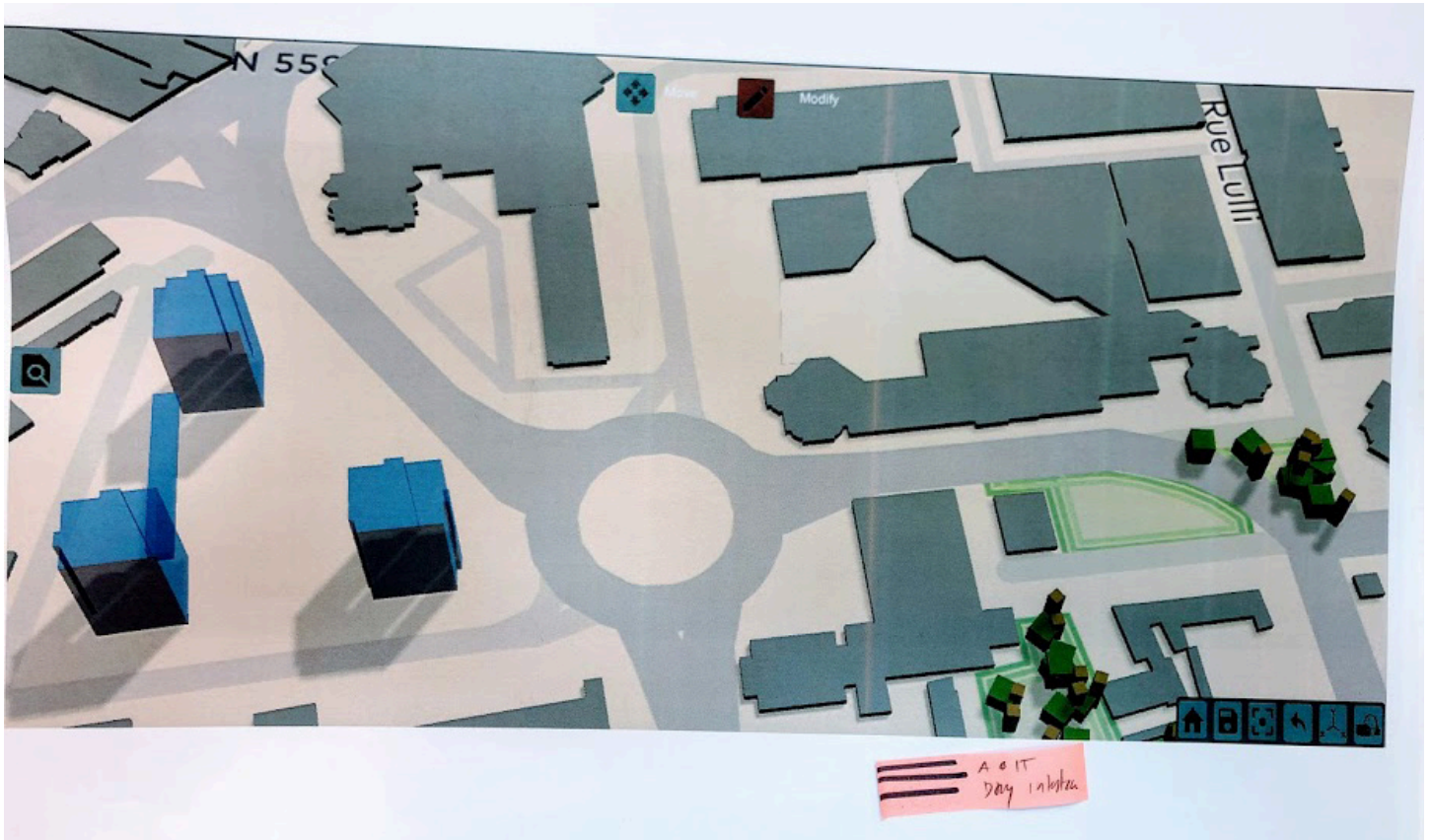
A bit dry.. (?? can't decipher handwriting)

Comment feature is nice

MENU   HIDE
    HOME

CONTENT   HIDE
    New Project
    Edit Projects
    New Model
    Edit Models
    Analytics
ADMIN   HIDE
    Your Profile
    Options
    Security
    Logout

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STATS

| | NUMBER OF PROJECTS | | | | NUMBER OF COMMENTS |
| | 4 | | | | 6 |

CONTENT MANAGER

Id	Projet	Date	City	Reference	Number of models	See Comments
14	renovation vieux port	2017-01-08	Marseille	MRSLURB015842	1	💬
15	Ville du futur	2017-02-01	Marseille	MRSURB047864	1	💬

COMMENTS AND STATS

Comment	Models
Un retour aux materiaux nobles je dis ouiii	3
ca me parait tres leger	3
Vous denaturez Marseille!	3

STATS

% Emojis for this project

40% / 20% / 25% / 20%

● Happy
● Love
● Devor
● Tears

(handwritten notes)

comments are really useful
even if it's just 1 word about
what they like (e.g. spacious)
don't like (dark)

Explination of Comment

Comments are really useful even if it's just 1 word about what they like (eg. spacious) or don't like (dark)

Explanation of comment

Localab Dashboard

Why is it shit? Comments?

Possibility for uploading a picture / taking a street view snapshot of "good / bad" place + add comments

Residents' feelings

Good that I can easily distinguish what places they like / don't like.. But I should be able to click on sad face and see explanations / comments

Good that you can check individually (each person)

Stakeholder info

How can you apply this in a planning with sense?

Image (from) an existing database?

As a 2nd step (after placing the abstract building blocks) for us it would be really useful to check out how people imagine that square / street etc. ("picture board")