Concrete Perception

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Index

Research, Re-think, Re-use

In the modern times the research around materials is becoming more and more popular. We are constantly looking for new ways of use and apply materials. Both environmental and artistic purpose push to discover alternative techniques, applications and aesthetic qualities. Some materials are originally more used, or even only used, in a particular practice and bringing them in another sector can create unexpected and surprising effects.

As a designer I think a good way to discover and create something new is to rethink and reuse something in a new context. Because of studying ceramic and working with ceramic materials I decided to explore the world of concrete. Since I was young and having an architect as a dad I always saw concrete as a material used for building houses, and that was it for me.

When I was studying product design I started to discovering projects where this material was used in new ways, not in architecture. Now that I'm working with ceramic I decided to explore this material deeply.
I changed my mind about concrete as something for architecture, now I see it as a ceramic material which can be used in any practice, and I want to know how is possible to change the perception of this material. I then started reading, researching and talking to find out the reasons and the ways to do that.

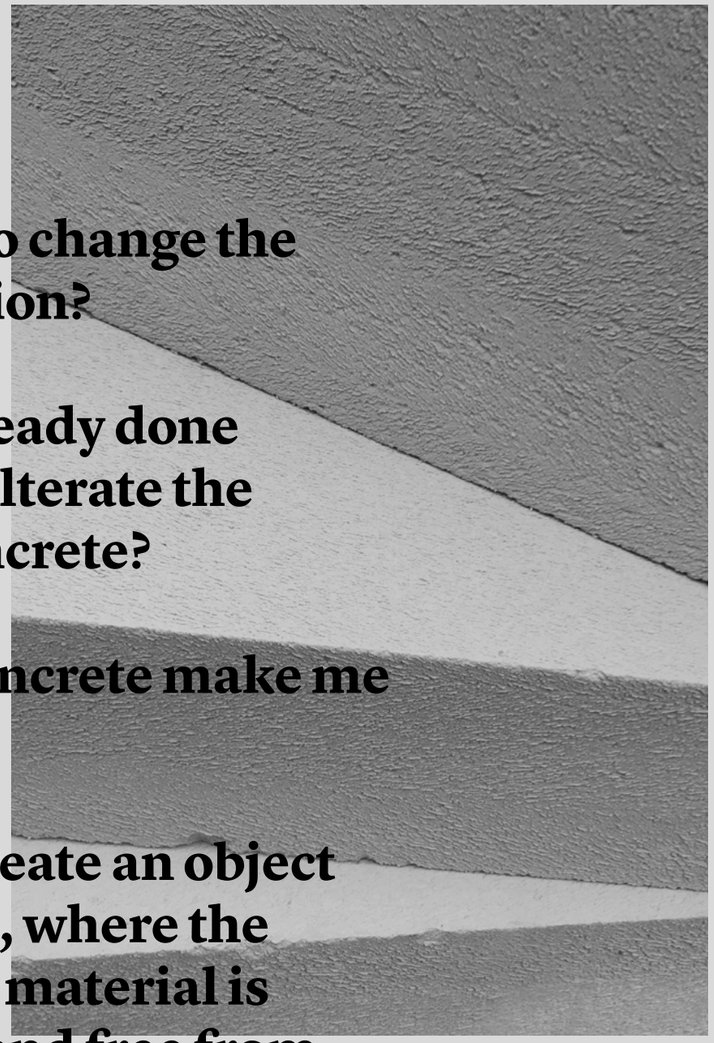
Why Concrete?

If a product designer uses cement as a material in his process, when the object is done it's still really far the idea to think back the cement as a production material for everyday products. This is what intrigues me, and that's why I would like to research and study a more phylosofical part of the design process, the perception.
The perception of a material is a really wide and deep theme to investigate, that is why I want to focus only on one specific material. I've already studied and worked with the philosophy of perception. I've read different books during my bachelor studies, from Kanitza[1], Arnheim[2] and attended prof. Laura Badalucco[3] lectures about the role of materials and affordance in the perception.
All this studies were general and focused on the industrial and product field of design. I want to investigate the role that concrete has today in architecture and design. The goal is to not solely to know if there is a way to change the perception of the concrete material, but also how it can be changed, experiment and discover what is influencing our perceptions.

I'm very interested on the perception of materials, and lately more in the ceramic materials. They are close and far at the same time from the world of industrial design, and this is what is intriguing and challenging me to rethink them.

Concrete.
When I hear this word it's difficult to don't think about architecture. I've asked different people from different backgrounds what was the first thing that came up in their minds after hearing concrete and the answers I received were: boring, buildings, comunism, grey, bridges, long lasting, strong, constructions, stif, architecture, etc.

To start this research I think it is important to know the story of concrete and why we had and still have some specific ideas of this material. My main questions in fact is based on that the people has already a culture and ideas of concrete. So, what are this ideas?



How is possible to change the concrete perception?

Has someone already done products which alterate the perception of concrete?

What does the concrete make me sense and feel?

Is it possible to create an object made of concrete, where the choice to use this material is totally expected and free from every connection with other contexts, such as architecture?

The Roman Pantheon: The Triumph of Concrete

In the field of architecture, concrete-like materials exist since very long time. They were used since 6500 BC by the Nabataea traders or Bedouins in the regions of southern Syria and northern Jordan.[4]
Then the classical era begun and it was used in the ancient egyptian and later roman eras.[5]
Concrete floors, dated 1400-1200 BC, were found in Greece in the royal palace of Tiryns. The first ones to use concrete extensively were the Romans and they were found buildings from 300 bc to 476 AD.[6]
The concrete they were using is the Roman Concrete (or opus caementicium). It was made from quicklime, pozzolana and an aggregate of pumice.

Concrete, as the Romans knew it, was a new and revolutionary material. Laid in the shape of arches, vaults and domes, it quickly hardened into a rigid mass, free from many of the internal thrusts and strains that troubled the builders of similar structures in stone or brick.[7](Robertson 1969)

The long term durability of Roman concrete structures has been found to be due to its use of pyroclastic (volcanic) rock and ash.[8]
Thanks to this pyroclastic materials Roman concrete is significantly more resistant to erosion by seawater than modern concrete.[9]

During that period concrete was used only for his functional and structural properties, so it was probably seen as a mere construction material but still not the main one.
Later new techniques were discovered, but the idea of the concrete as a building material was still strong, therefor it was always hided.

During the industrial era, a new typology was developed in England in the 19th century. Joseph Aspdin patented a method for producing Portland cement in 1824.[10] To build such as high and complex structures that we are used to see nowadays, it was needed to reinforce the concrete, by adding frames and supports inside. Reinforced concrete was invented in 1849 by Joseph Monier[11] and presented at the world's fair in Paris 1855 as a new development. (Collins, 1959)

Fig 1, The Pantheon in Rome is an example of Roman concrete construction.
Photo: Jean-Christophe Benoist

Industrial revolution and modern movement

During the industrial revolution concrete was largerly used but never showed as a façade or exposed in public. The material that allowed us to build faster, bigger and more efficiently. It was the protagonist of the industrial revolution and we knew how to use it to build immense buildings, but still we were never showing it as the finishing material.

Later in the middle of 20th century thanks also to high-tech architecture, was possible to use new techniques to construct and build. The structure wasn't only not hidden, but celebrated (An example is Mies Van Der Roe, Illinois Institute of Technology, fig. 3). We can see a connection with the rationalist architectural theories of the Enlightenment and the use of the concrete. A new relationship with the materials and way of constructing started and the avantgarde in the 30s and 40s gave the impression that there was the “end of history” and beginning of a “new Building”.[12]
I think the concrete is one of the examples. Looking at a building with exposed concrete you can see which techniques and technologies were used, showing his story and character. Here we can then see the beginning of treating the concrete as a façade and material we enjoy to see. Before the focus was on its structural applications, but then the appreciation of surface qualities and construction-history came along.

One of the principle demands of the modern movement in architecture was for honesty of construction design. Making the structure legible and thus allowing it to become an element in the design. A living example are the 5 points of Le Corbusier[13]. Concrete seen as a timeless material, used and showed as an example of the modern movement which principles are: functionality and honesty of construction.
In fact only in 1923 thanks to the french architect Auguste Perret (1874-1954) concrete was first used as exposed façade material in public buildings.
The church, Notre Dame du Raincy, in the city Raincy (fig. 2).[14]
It was just one example, but it is a sign that someone was starting to see something more in this material, a new character and a new value.

Fig 2, Notre Dame du Raincy
Photo: Rocco Daniele

Fig 3, SR Crown Hall College of Architecture Illinois Institute of Technology
Chicago, IL 2013
Photo: Corey Gaffer

Fig 4, Monument of the Bulgarian-Soviet Friendship by Evgeni Barămov, Alyosha Kafedzhiyski and Kamen Goranov
Varna, Bulgaria 1978

Interview with Alin Stunned:

If I say "Concrete" which is the first thing that come up in your mind?
Communism. In the country where I come from, Romania, concrete has been used as a way of cementing all the social blanket. They destroyed the identity of the country and tried to rebuild it from the ground by using concrete. More specifically, they rebuild all the infrastructure and the living spaces for the workers, who were supposed to be the driving force of communism.

Therefore, the architecture was connected to politics?
Totally, our architecture has been always connected to political reasons, like the romans building the arches and bridges, it is a kind of conquest. Roman builded statues of gods, the soviets builded monuments out of concrete.

For you, how is concrete perceived today?
It is very subjective. But it is a matter of functionality. You need to be helpful to people in a way that boost their way of life.

In the 1960s and 1970s the concrete was used in building construction industry as an efficient, industrialised and standardised system building in the form of actual mass production.
In the 21st century is the largest used material in building and every kind of construction.

I can see how this material during the 19th century had different values for different people.
Someone was still seing it as a construction material, grey and boring, to be hided and used only for structural purposes.
Others, following the modern movement, realized that this material could be celebrated, showed and explored for also his aesthetic qualities. Still others instead connected it with political movements as the communism.
I talked with a friend of mine, Alin Stunned, which is not involved in design or architecture, and his first thought were about communism and how the concrete was used as a way of cementing the social blanket. (Interview at page 12)

The perception of this material in this period is yes subjective for different categories, but always connected to a movement.
It is not yet seen as a material but as a symbol.

Concrete today

Today concrete has reached really advanced developments. There are a lot of new typologies, especially used in the construction industry. Fibre-reinforced concrete, Textile-reinforced, self-compacting, High-Strength and High-density concrete are only some of the more frequently used. We see them applied in many different ways, from precast to cast on site.[15] Firing-concrete is another member of this family but unlike the others, it needs to be fired and it's composed by different aggregates.

Thanks of all this new developements, today is possible to control and use concrete in ways that before were considered impossible or unusefull, opening new options to give character and values to the material.
Here I think it starts to change the perception of this material, and it all started with architecture.

What is it the idea of the concrete nowadays in the field of architecture?

I think today the majority of the people still see this material as only for construction. Obviously I'm not talking about artists, architects or designers, but all the rest who are not directly connected with this material except for the buildings in the city.

In the concrete industry we have nowadays a wide range of means to control and vary its appearance. Shaping concrete with untreated softwood is the oldest method. Today in the industry are used many different new ways to control it: smooth formwork, textile formwork[16], formalisers, filter mats and oriented strand board.
To give character to the material is it also possible to work with the surface, exposing the aggregates, adding photographic effect, treating with acid, blasting and other different surface dressing, such as bush-hammering, boasting, grinding and polishing.
Not last it can obviously be added color.[17] Some of this concrete were specifically developed not for structural, but for aesthetic purpose. This shows how the idea of this material is changed.

All this qualities and ways of constructions are really interesting, but only indirectly connected to my topic. I'm more interested in how you perceive it. It is still important to not forget them because to create what we want with concrete we need to know practical and technical developments.

I think a good way to gather information is to make interviews to see what people thinks about it and study different project and look into architecture magazines where this material is used.
Especially looking at it from different point of views.
The public and the artist.

Fig 5, Construction prototype for ultra-thin concrete roof
Zürich, 2017
Photo: Block Research Group / ETH Zürich

Cases

Today probably every architect firm has used or is using concrete for his projects. Some architects by the way, use it in peculiar ways and not only for his properties but also for his message.
As I wrote before concrete is always connected with some ideas and the majority of people think it as a mere building material which can't give feelings as wood does for example. They are wrong, concrete can tell as many stories as other materials and I will present some architects and their projects and thoughts, showing that this material is as noble as all the others.

Cukrowicz Nachbaur Architekten

I will start from a small but famous and established studio in Austria: Cukrowicz Nachbaur Architekten. I tried to contact them, but I couldn't manage to get an interview. I will analyse anyway how they design and work with this material. They have a really particular approach to concrete and we can see that especially in one of their most famous projects: the Voralberg Museum renovation. They decided to use concrete not only as the main material for load bearing walls but also as clothing[18] of the building. The main side of the building face to the most important square of the city and from afar it seems just a smooth texture made from uniformly distributed dots. Going closer it appears an infinite and - seems like - casual arrangement of the bottom part of PET bottles (fig. 6). The idea of the bottle bottom casts was developed in close collaboration with the Southern Tyrolean artist Manfred Alois Mayr and the inspiration was coming from the museum collection, clay pots from the Roman era with their contemporary equivalent as the polyethylene terephthalate (PET). They decided in fact to create 17cm thick and 6x2 m wide concrete casted panels to cover the main façade.
This is not a usual way of using concrete and chosing to paint it white, made it appear more refined, gentle and in a way a lighter material. Its vivid play of light and shadow provides it with a three-dimensional impression with enormous haptic presence.

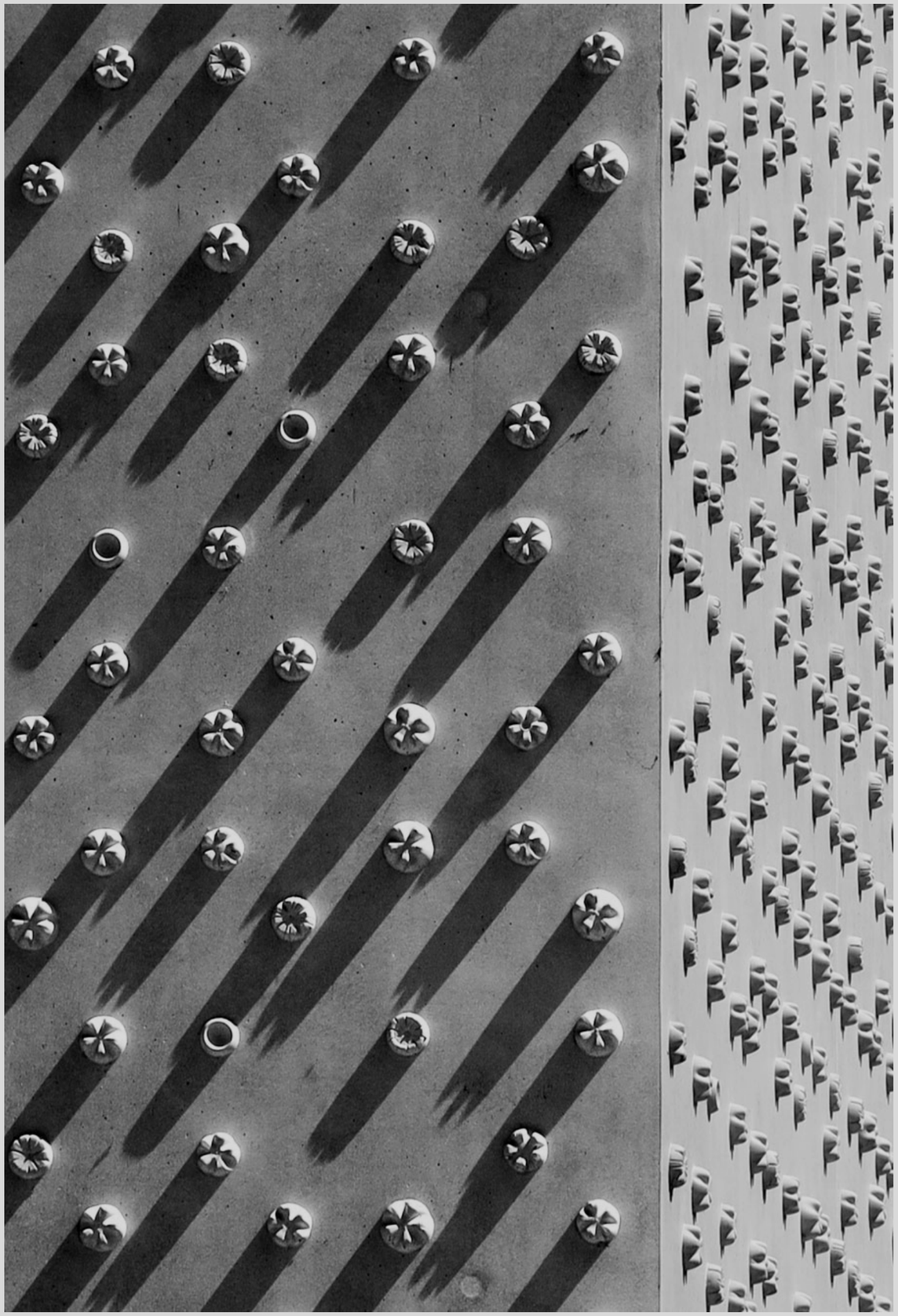


Fig 6, Voralberg Museum, Detail of the façade
Bregenz, A 2013
Photo: Detail.de

The body of the object
How do you approach concrete as the constructive skeleton of your object, here in relation to the way in which it affects you aesthetically?

Material Compatibility
How do you approach the juxtaposition and collaboration of concrete with the other materials?

Levels of Intimacy
How do you approach concrete scale, size, proportion and distance of observation in relation to the body and feeling of intimacy?

The sound of the object
How do you approach the way concrete affect the transmission of sound?

Temperature of the object
How do you approach the way concrete react to its surroundings in relation to temperatures?

The light on things
How do you approach the way concrete affect te transmission of light with reflection, absorption, but also in terms of light/shadows and nuances and is separate materiality?

Between Composure and seduction
How do you approach concrete as composited material, structuring, placement, and manufacturing in relation to its narrative and seductive power?

Tension between interior and exterior
How do you approach the concrete as what creates a compartment/ shielding and those that are teens as such from the outside?

Architecture and Surroundings
How do you approach the concrete dialogue not only with other materials in the building but also with those that appear in its surrounding?

Coherence
How do you approach the cohesion of concrete in relation of all the other things that take place in the events you plan for the concrete to exist in?

The beautiful form
How do you approach the beauty of the concrete as the aesthetic sublime in all of the question above?

Reformulation and re-edition of the "Atmospheres" themes.

Fig 7, Bruder Klaus Kapelle by Peter Zumthor
Mechernich, DE 2005
Photo: Tim Van De Velde

Fig 8, Casa unifamiliare by Ruinelli Associati
Val Monastero, CH 2014
Photo: Ruinelli Associati SA

Ruinelli Associati

A vey different but not completely opposite way of using this material is the studio of Armando Ruinelli, based in Switzerland. He is a really peculiar architect, a down to earth person who for all his life only worked and designed buildings around and in his home town, Soglio. He has a really simple and natural way to use concrete and create a dialogue with other materials and the surrounding objects and space. Which I think is the starting point for me to rethink this material. In my case the surrounding area is not the city or the nature, but other objects and space in a smaller scale. I've been lucky to get the chance to talk with him in a private interview were we focused on the use and values of the concrete in his practice. (Interview at page 23)

Peter Zumthor

The last architect I want to focus on is probably one of the most known and famous architects in the world. Peter Zumthor. He has and incredible relation with all his projects, material and environments. He needs to be fashinated from a project to work, he doesn't work for any client. When he has the feeling that his name is used for marketing purposes, he is not interested. He choses his projects carefully and everything he makes always creates a perfect dialogue with the environment, people, history and other materials in the surroundings. Architecture is something substantial, not virtual. It has always been possible to perceive it through the senses.[19]
He describes his use and manufacture of regulated atmospheres and architecture in general in his book "Atmospheres"[20].
He divides his book in 11 different themes and for each of them it is possible to connect not only architecture practice in general, but in my case the concrete itself as a material. I will start from the reformulation of this themes made by Anja Margrethe Bache[21] and adjust it for this topic.
(Re-formulated themes at page 18)

Fig 9, Magazzino and Atelier Miriam Cahn, detail of the artist intervention
Malans, CH 2016
Photo: Ralph Feiner

Interview with Armando Ruinelli:

If I say "Concrete" which is the first thing that come up in your mind?
A dam, the Mass of a dam.

Is there a project of you where the use of concrete is not only functional, but especially formal, aesthetic and speculative? If yes, which project? and how and why the concrete is used in that way?
Yes, there are more than ones. One is, for sure, the stable format with beaten concrete, RM house. It's the connection with the old stone wall. The old wall made of stone and the new one made of beaten concrete are talking together.

There is another case, that house made of concrete almost white in Val Monastero (fig. 8). Since there are marble caves close by, we wanted to experiment what it was possible to do with marble. In fact, after factual research about the frost, -we were not sure, marble could resist frost- but at the end the idea worked out. In the concrete granulometry, which normally range from 0 to 32, we used up to 8 millimetres of marble waste. A very special color, really elegant.

How do you approach the concrete dialogue not only with other materials in the building but also with those that appear in its surrounding?
The concrete, as the plaster, has a myriad of possibilities to be treated. React in a particular way to light. In a completely different way depending on what type of concrete is been used. Then can give the feeling of something strangely cozy, warm. Instead many people feel that the concrete it's only a cool thing.
It is not. It has today all these options that probably 50 years ago were not yet discovered. Nowadays It may also give the impression of wood. We made this big warehouse and atelier for the artist Miriam Chan and the concrete responds to the formwork that we used.

How do you approach concrete scale, size, proportion and distance of observation in relation to the body and feeling of intimacy?
The scale has nothing to do with the concrete. If a building needs a space, that's it. It's more a matter of proportions and they havn't directly to do with the concrete. It Can help define where is the thread of the window or the bench. These are optical signals that make you think: "hey, that's a nice bench". The concrete, having the sign of the formwork, allow us to be really precise on this type of things.

Talking about formwork. In the project of the Cahn Atelier, there is a particular and very visible detail in the concrete formwork.
It is an artwork by the artist (fig. 9). Talking about with her, I asked why not leave a little mark.
We didn't want a building that looked like a kind of exposition of Cahn works, yet we thought a little sign seemed something nice to do.
She carved this two axes and leaned in the trunk, creating this light abstract figures in the corner. Where you enter in this kind of tongue that leads to the entrance.

What does the concrete makes you sense?
When I choose the concrete, it is not a choice based on the material, it is a choice based on the space where we build, depending on where we build. We are not beholden to the concrete in a particular way. There are exposed brick or wood-related architects. We basically let us react depending on where we are building.
If it is in the context already built, like a town or a village is an account. Sometimes maybe it's the landscape that tells us what to use. Let's say that I have no prejudices towards any material and the concrete allows me to express certain things, in certain cases better than another material. That's because it's so immediate. It is not a material applied, but it's him, it's the material itself.
Concrete is also an adventure. As you enter it into a formwork blindly. There is always a little tension about how it will come out.

I know that, it's the same with ceramics.

I really liked the sentences "it's the landscape that tells us what to use". What do you mean by that?
There are some situations where, it seems, that the concrete can respond more correctly

to the landscape or the city. I build often in the urbanised environment, where there are already houses. The concrete often responds to needs in a very charming way. It can be stained, treated with all the techniques we talked about before. This brings me not always, but once in a while to believe concrete is the right answer.
Because the houses in the second line are usually workshops, stables, small warehouses they wear a more modest dress.
The house on the street, which has some significance, often has a shirt and tie.

Why when we look at a determinate finishing or material used on an object we connect it with a specific idea?
There are lamps made out concrete. We can build them because today we can throw in the order of a few centimetres.
And then there is this memory of home and his materials too.
In Paris there are concrete handrails pretending to be wood. They get back the idea of wood.

Is it possible to change the way of thinking a material in his context?
The handrails are an example. It's made in a very immediate way. It is evident that is concrete. The handrails look like tree branches. Probably from the 1900.
It also depends on the period, probably then, it was the liberty period. The desire to do very elaborate things. "Design" things we would say today. So, let's say that the concrete has this plasticity that allows us to do many and bizarre things. One has to wonder if it is correct.
Since the technical possibility is there. Things developed with concrete could have been done with other materials, but there is the moment we do too much with the concrete because it can be done. At the moment we are doing too much with concrete, only because we can do it. So the fact that it is made of concrete doesn't mean anything.
It's like thinking that the flat roof is contemporary architecture. It has nothing to do with.

What do you mean with "we are doing too much with concrete"?
It may be that when we discover the materials and technologies that allow a technique breakthrough, there's this tendency to try them all (which is the right thing to do). Maybe then I see a lamp and I say "it would have been more beautiful in marble". The fact that it is made of concrete is not yet a value; it must be done well. The work has to be done right and understandable. Understand that concrete was the right material to use.
Today there are many furniture and objects in concrete, it is fascinating.
Occasionally we do things that maybe it was better to do in other ways, in metal, plastic or other materials.
Just because it's fashionable. We are all affected by the fashion and at the moment we can say that concrete is fashion.

What do you think about what I'm trying to do?
The only way is to try. On the spot is difficult, it is a bit intellectual. It's Possible. If the object is -we could say- "perfect", than it had to be in concrete. You will see. let me know how it goes.

Copenhagen-Soglio, 23 October 2017

The perception

After talking with many people coming from really different backgrounds such as art, architecture, design, engineering or other not-design related practice I realised how this material has very different values and not always is seen as a boring grey mass.
My initial questions were headed to find what concrete means for people and sometimes this was too complicate or personal and I didn't receive and answer. In the case of Cukrowicz Nachbaur Architekten I posed the same question as Ruinelli Interview but they could answer only to the first one.
All the other were too general or sentimental for them to be explained with words.
More I read, talk and experiment, more I realise that there are many ways to modify and change concrete, and consequently his perception. One way which I found easy and very direct to experiment is terrazzo. Working with the aggregates and additive materials inside the concrete, which usually are hidden into a grey smoothed and flat surface in architecture, is possible to give a different touch and also show how this material is created and formed.
Perception is relative and subjective; it depends from culture and the individual person. There are, by the way, some common characters that define the final idea. Usually people connect an idea with some specific adjectives and characters. Is with contrasting these characters that I can change the perception.

A composite is a material made up of two or more solid materials, which thereby acquires qualities that the distinct materials do not contain by themselves. (Holliday 1996) Concrete is a composite and there is virtually an infinite amount of different concrete mixtures, all characterised by their hydraulic, chemical binding. In the everyday life we never experience it like that. It is the most widely used material today, but it is presented to us always as a mere surface: smooth, polished or rough, flat and grey. Concrete used in disciplines like art, design, and architecture must also live up to demands of aesthetic performance, and an experience thereof thought up by the designer. It is, then, something that has to do with shape, surface conditions,

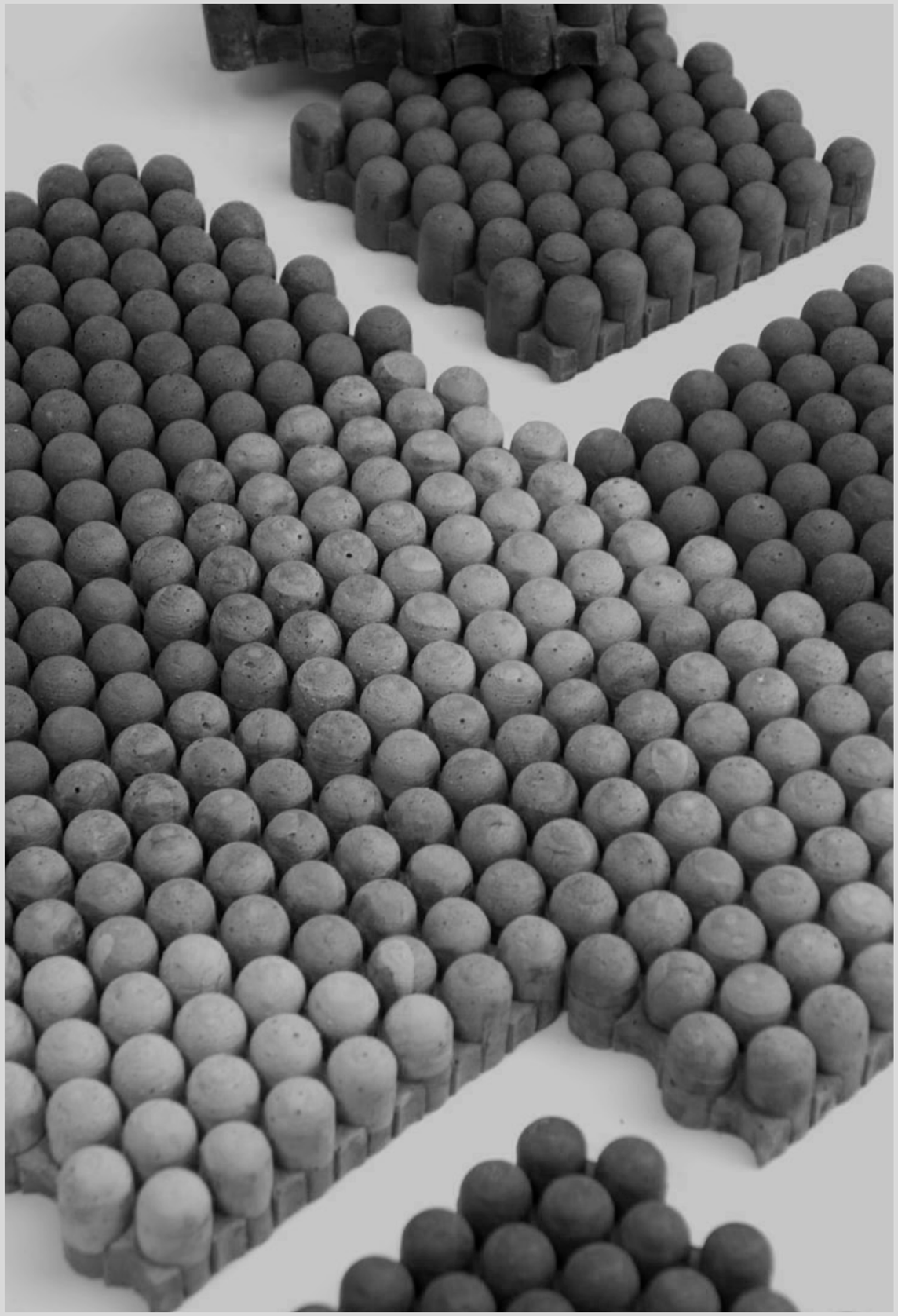
Fig 10, A façade panel for a mounted façade solution in specific ceramic glazed concrete by Anja Margrethe Bache.
Copenhagen, DK 2013
Photo: Ole Akhøj

its texture, tactility, visual expression, colour, ornamentation, as well as how it relates to its surrounding.
Materials must also be designed in relation to sustainability, resource use, and cradle-to-cradle considerations. This is why materials used in one context, in this case for architecture, cannot be directly transferred to other context. It is necessary to redesign and develop the materials in relation to the context they are going to be part of. (Bache , 2014)

Bache refers is artistic-research to six different categories: Form category, Surface category, Form characteristic, Arrangements, Positions, Relations.[22]
She focuses on the question that follows the list of terms, wondering if it might be possible to arrive at the same answer, which is the object, artwork or design, by using other materials.
The comparative aspects is then comparing the observed materials to the others in relation to how these materials would look if they pursued the same expression.
The art researcher's questions about the distinctive expression of the materials are accompanied by the questions of how this distinctiveness has been realised.[23]
I can see some connection with this research to how the people unconsciously perceive things and which unique characteristic a material has to define itself in relation to the conventional.
Talking more close to the topic, the characteristics that define concrete. I also realise after all that this is exactly what already some artist, designers and company have done. They changed maybe only one of this category/characteristics (Happy concrete by Iwan Pol[24]) shape, (terrazzo color and composite materials), arrangements (Bache firing concrete[25]), but later I will analyse them. These are both artistic and public context which means that concrete is already used in unusual ways where is not perceived as commonly an architecture material.

More than researching and reflecting in November 2017 I started directly experimenting with concrete. The aim I have in the practical practice is the same as in this reflection: try to materialise the questions that I'm posing myself using the material itself.
To start the process I begun with analyse what the people told me during different conversations, what I discovered and realise reading books and what came out from the interviews.
I extracted a list of different qualities and adjectives of concrete and then I extrapolated the opposites. Here is where I started.
The general view of concrete is not only a grey boring mass. It is seen also as massive, stif, fixed and long lasting material, strong, not fluid, poured and formed from other structures. However today this material is already used in ways that change his perception.

Fig 11, Detail of a façade panel for a mounted façade solution in specific ceramic glazed concrete with exposed fired concrete juxtaposed with a white stoneware glaze Anja Margrethe Bache. Copenhagen, DK 2013
Photo: Ole Akhøj



Cases

Iwan Pol

He started from the point that concrete can take shape or form, as it does in architecture following the different fabric, metal or wood formwork. This allows to create incredible sophisticated formworks to then cast concrete into it, creating more fluid and liquid effect (something that concrete doesn't seems to usually be). The designer decided to aim for a softer look and feel, as a contrast. By experimenting with various pigments and pouring techniques Iwan Pol aims to give the coarse and grey building ingredient a colourful makeover. The result is a series of small objects (fig. 12). This research intents to show new aesthetic possibilities of our most widely used material.
I think he achieved his point and in some of his pieces is almost impossible to recognise the material, in other is definitely used in a peculiar way which makes you rethink the character of the material. I think Iwan Pol achieved to change the perception of concrete. Working on the shape and color, giving it a new look, concrete gets new qualities but it cannot be used in the design or architecture field, they are art pieces.

Cohann Rémy and Bertrand Van Dorp

Another project I discovered is from a friend of mine, student at KADK, MA Spatial Design. The project was developed in 2014 during the 2nd Semester at HEAD-University of Art and Design of Geneva by Cohann Rémy and Bertrand Van Dorp.

One day I was having lunch at the Kantine in KADK and I started talking with Bertrand about project-related topics and just while discussing, it came out that during his bachelor he did a project focusing on the concrete use in architecture. The project is a spatial esperimentation. The workshop was focused on 1:1 scale objects, results of material and building techniques researched and tested throughout the semester. The studio was based on two theme words "Challenge and Obsession". After building the Peter Zumthor Chapel (fig. 7) smaller replica in order to learn from this model, experiment and eventually

Fig 12, Happy Concrete, one of the artefacts
Rotterdam, NL 2017
Photo: Iwan Pol

find their obsession, they chose to focus on concrete. It is really nice to realise how all the inspirational people are sometimes the same, as here Zumthor, in different practices and fields.
They were obsessed with the idea of finding a way to offer a lightness to their material. They studied different percentages of water mixed with concrete in order to find different textures. Numerous tests were done in order to find the perfect dosage to obtain a uniform degra-dation of a two meter high column (fig 13).
Concrete is a material that works well under pressure, so the fragile and perforated part bellow could easily carry the full and heavy concrete above which gave the effect of degradation and lightness. The shape of the model had to surround the visitor in order to feel a notion of space.

The obsession and the challenge of a semester, in which a strong contrast appears: a raw and imposing material in a fine and harmonious object. (Bertrand 2017)
When we were talking about his project I was very fascinated by it and in a way very happy, because I was also experimenting in the same direction as me, just in other scale and environment.
They succeed in making you feel the concrete as a week and degradate material. This is, for me, another way to change his perception by working not on his aesthetic qualities, like the designer Iwan Pol, but on his physic and structural qualities, which contrast with his primal practice: architecture.

Fig 13, Spatial experimentation, detail of the columns' different density
Geneva, CH 2014
Photo: Bertrand Van Dorp

Beauty here is not an objective thing, a characteristic of the object alone. Nor is it understanding something that merely exist in the subject as the ability to adjust our imaginary powers to reason and intellect. (Kant 1790) Beauty here behaves quasi-objectively, between subject and object as a loaded atmosphere where the aesthetic sublime makes you affected by it on an emotional level. (Friberg, 2006, p. 234). The quasi-objective equals the relationship between the qualities of the surrounding objects and the condition of the observant subject where both are co-constituents. An atmosphere relates to both the subject in a reception aesthetically perspective and the object is a production aesthetically perspective. (Böhme 2010) This is what fills a room with a mood that affects us emotionally. (Ibid. p 234)

The artwork is no spick and span unit facing a passive spectator. The perception of the work plays a role in putting it and its context of ways of understanding and linguistic devices into play. Then another kind of dialogue emerges when and if the subject is able to devote itself to the work, which functions in relation to its sensuous surplus and idioms. Taking delight in art has no end goal, but rather is an event that makes linear time fall off its hinges and makes strategic preferential theories expire. You must be ready to capture the event; you must be worthy of it. The conditions for this dialogical exchange are that the visiting, sensitive, and sentient subject is capable of minimizing the noise and preceding expectations they bring themselves. (Lassen, 2005)

Rather than mind and body, man is a mind with a body, a being who can only get to the truth of things because its body is, as it were, embedded in those things. It is not only true of space but, more generally, of all external objects: we can only gain access to them through our body. Clothed in human qualities, they too are a combination of mind and body. (Merlau-Ponty 1948-2004)

The unity of the object does not lie behind its qualities, but is reaffirmed by each one of them: each of its qualities is the whole. The things of the world are not simply neutral objects which stand before us for our contemplation. Each one of them symbolises or recalls a particular way of behaving, provoking in us reactions which are either favourable or unfavourable. (Merlau-Ponty 1948-2004)

Fig 14, Sample of sandblasted concrete. The aggregates are red bricks (ceramic), marble and sand by Davide Ronco.
Copenhagen, DK 2017
Photo: Davide Ronco

Conclusion

This extensive research led me to discover how different this material is perceived from all the people.
On the other side I also know that it is possible to change this perception.
In order to do so, the designer, artist or architect has to work with the characters of the material that usually are unexplored. In the case of concrete for example working with the aggregates or the formwork. Everybody knows that concrete is composed by stones and sand, but they are never visible. It is also obvious that it is poured, but usually the formwork is static and straight, like a wall.
Moreover I discovered that it is really easy to disconnect this material from architecture, just coloring and polishing it, becomes terrazzo or it could even seem like a plastic material.

This journey around the perception and material research helped me to understand how to approach in a different way to something that I already know. Being a product designer I would have never thought to create an art piece or research and experiment for a aesthetic or psycological purpose.

To explore this way of changing the idea of concrete I studied and experimented with aggregates to create an art installation (fig. 14 - 15).
A column, symbol of architecture, made of concrete but with different aggregates in layers, hidden in the same grey and boring look.
The column is then sand-blasted to reveal the different chacarters, colors, materials and textures, to show the plurivalent value of this amazing material. Something that you know is there, but don't usually realise.

The concrete is the most used material nowadays, but still is a kind of unknown material to be yet fully discovered, full of potentiality.

Fig 15, Concrete samples made with different aggregates: ceramic, glass, mdf, wood, stones, common quartz, marble by Davide Ronco.
Copenhagen, DK 2017
Photo: Davide Ronco

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