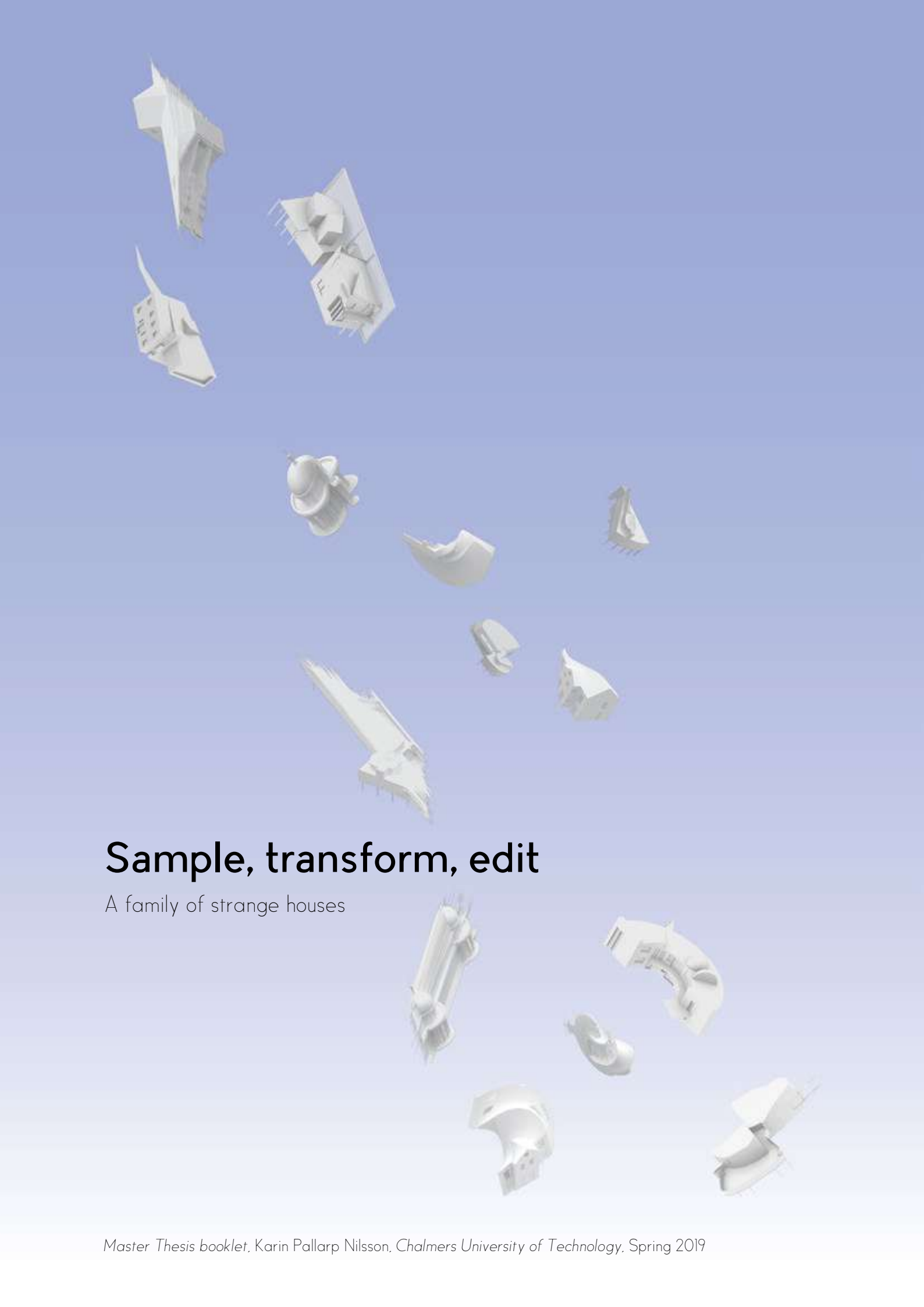




Sample, transform, edit

A family of strange houses

Sample, transform, edit

A family of strange houses



CHALMERS

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"What order-type is universally present wherever there is any order in the world? The answer is, serial order. What is a series? Any row, array, rank, order of precedence, numerical or quantitative set of values, any straight line, any geometrical figure employing straight lines, and yes, all space and all time."

–Josiah Royce, Principles of Logic

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Abstract

In the 90's the potential of *The digital* was explored intensely in certain architectural communities. Architects engaged with digital tools visualized the architecture of the near future as the end of the era of standardization and mass production.

Today we know that the predicted revolution was a little bit optimistic. New digital tools and ways of designing has been of fundamental importance in the development of the profession last twenty years. It has both been used in the search for new aesthetic expressions and to facilitate architects every day work by standardize and secure quality in projects. But standardized solutions may risk an even fully automated process without architectural input. This could be seen as an opposite of the ideas in the 90's.

Working in series is a common method used by many creators within the field of art, design and architecture. It's a way to study a certain topic closely and generate new iterations. The result can look different due to the creators own definition of series. The working method in this thesis combines serial work with a partly automated process which has led to unexpected results in a search for new aesthetic expressions.

Through literature research and several design studies a design method has been created. The method was developed in order to generate a series of buildings that are members of a design family. Models of three well known buildings were transformed using commands from the transform-menu in a modeling software. This method was then tested in two other scales applied on a room and an object.

A catalog-house has been the input that forms the base of four new villas. The villa has first been automatically transformed and then manually edited. The same procedure has been applied to several rooms and objects which then has been merged into a collage-like house. This operation has been repeated four times and results in a series of villas where every villa is unique with similarities.

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Introduction

Background

The idea of working with seriality was raised from the criticism of standardization and prefabrication in our every day life architecture. It is very clear that we're trying to reach variety in the contemporary architecture to avoid creating a "miljonprogram" again, with repetition of identical big scale housing blocks. The concept "blandstad" (mixed use), used by politicians and planners has formed an aesthetic style where decision makers early in the planning process are pre-deciding a variety in height, facade materials and aesthetic expression. Even though the buildings has different expressions they are all the same underneath their facades. They all consists of standardized building parts that purvey in standard sizes that shapes the architecture. They are produced and delivered by a few suppliers to favor a few contractors to build fast with economic efficiency.

The Industrial revolution in the beginning on the 19th century was a time of change in the world and architects got inspired as well.

New industrial materials and fabrication methods where used by architects and Le Corbusier said: "Look at the makers of cars, planes, or steamships, they know how to deal with today's technologies of mass production and how to exploit the assembly line; we should take our lead from them" (Carpo, 2004).

Chris Knapp explains in his article *Why it's time to give up on Prefab*, how prefabrication worked as a platform to justify the public sphere of opinion but since we left the industrial age and step into an era of information this claim is not valid anymore. We now have the capacity to produce customized objects on a mass-production level enabled by automated and digitalized production processes. The mass-production is today diminishing the roll and impact of the architect on the market (Knapp, 2013).

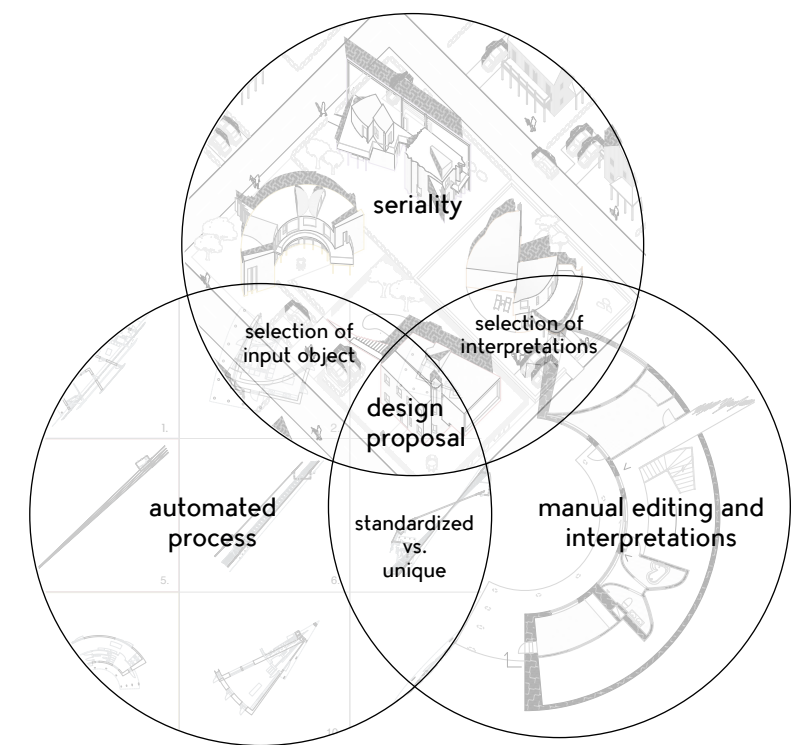


Fig. 1. Method diagram
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The thesis is situated in the field of the post-industrial era. The research is based on how seriality as a design method, both digital and analogue can be used to come up with a unexpected design connected with digital fabrication. The investigation is a search for a method that can be used as a tool to reach beyond standardization.

The aim of this thesis is, based on design studies, to design a series of buildings. The final product could either be a series of buildings as objects where their form is what's defining them as a series or it could be a building consisting of smaller components where the components is different. The main point is to lift the discussion about standardization versus customization and gain new knowledge in this topic and contribute in this discussion and in the field of architecture.

The theme for the working method in this thesis is design through seriality. The early phase of the thesis semester started with several design studies. Relevant reference projects was studied with special focus on their design methods and on their take on seriality. The following design studies, influenced by the references, has formed a new design method suitable for the thesis project.

The working method has been applied on three scales; volume, room and object. They together form the design project. The whole processes itself can be described with the thesis title: Sample, transform, edit. One object is sampled, transformed and edited. The transformation part is automated which is suitable when numerous iterations is to be created, it also generates unexpected outcomes. This whole process is repeated until the desired number of series members are reached.

What is a series?

In what way will a serial method influence a design project?

How can seriality increase customization and uniqueness in architecture, and how can a partly automated process favor that?

Where is the boarder between unique and strange?

References

Introduction

This chapter is the theoretical base of this thesis work. The research began before the thesis work itself had started. At that time the exact topic wasn't set. The first ideas and thoughts revolved around digitalization and our use of digital tools. This led on to Mario Carpo and his book *The first digital turn*, which opened a new door to the 90's and the discourse concerning the digital. Further the subject seriality was added to the discourse, firstly as an art reference. One example Rachel Whiteread's *100 chairs*. The research came across Greg Lynn, who's work both belongs to the discourse about *The digital* and *seriality*. Greg Lynn's definition of seriality, or what he calls a family has been important for my own interpretation of series in this thesis.

Most of the references presented in this chapter where engaged in the topic *non-standard* and part of the exhibition with the same name at Centre Pompidou in Paris 2003.

They all have their own take on series and how digital tools can contribute to the discussion about *non-standard*.

A big part of the thesis has been the search for an adequate design method, this has been a part in the research as well. Greg Lynn is using a set of curves in different combination as the generator of his *Tea and Coffee towers* while Zaha Hadid is making artistic paintings which later is interpreted and edited to work as physical buildings.

All these references has played an important roll in the research and has pushed the project forward in the search for it's own design method and in the creation of a new series.



Fig. 2. Repetition nineteen III, 1968
Eva Hesse

Seriality in art and music

Mel Bochner describes *seriality* in *The Serial Attitude* as a method that results in a diverse and surprising outcome. Various artists has been working in series through out the history to create variations of a basic theme. *Morandis Bottles* or Hesses *Repetition Nineteen*, are two examples. Bochner describes *seriality* as a attitude rather than a stylistic phenomena; The serial attitude is a concern with how order of a specific type is manifested.

Another way of working with series in art is modular works. *They* are based on repetition of a standard unit. Andy Warhol's soup cans is one example of that, where the object does not alter it's basic form. Modularity has a history in the cultural methods of forming and architectural practice (Bochner, 1967).

Their term *Serialism* is a method used for musical composition. It's a way of composing using series of

musical elements such as rhythms, pitches and dynamics. (wikipedia, n.d.).

The *Dodecaphonic composition*, a twelve tone composition, uses this kind of composition method. The order of the notes throughout the piece is a consequence of an initially chosen and ordered set. Note distribution is then arrived at by permuting this prime set. Any series of notes (or numbers) can be subjected to permutation as follows: 2 numbers have only 2 permutations (1, 2; 2, 1); 3 numbers have 6 (1, 2, 3; 1, 3, 2; 2, 1, 3; 2, 3, 1; 3, 1, 2; 3, 2, 1); 4 numbers have 24; ... 12 numbers have 479,001,600 (Bochner, 1967).

This way of combining numbers into infinite combinations is close to design methods being used in programming where geometrical objects are being generated from combinations of curves (Bochner, 1967).

Alberti's algorithms

During the Middle Age many replicas were made of famous religious buildings. One example is Leon Battista Alberti's (1404-1472) family tomb inside the Shrine of the Holy church in Florence which is a replica of the Holy Sepulchre in the Anastasis in Jerusalem.

During the Middle Ages they were seen as similar and recognized as copies but the architecture historian Richard Krautheimer meant that the archetype and the copy do not resemble each other even though they had proportions, geometrical diagrams and their name in common (Nilsson, 2007).

In his work *De re Aedificatoria* Alberti presents what came to be one of the modern system of the of the architectural orders. Alberti is not describing his order visually with illustrations instead his order is a normative definition and a series of compositional, morphological and proportional rules, what we would today call an algorithm (Carpo, 2004).

Families

The American architectural critic Jeffrey Kipnis explains the concept of families as an analogy to music genres. What once began as a single species of music in the early 19th century developed through interpretations, variations and improvisation and resulted in different genres. One genre can be the host of other sub genres which he explains as different spices of music. Traditional genres then influenced new music and helped to form new genres. (Kipnis, 2008).

Greg Lynn, Professor of architecture at University of Applied Arts Vienna and professor at the UCLA School of the Arts and Architecture is known for his work with families. Lynn's work is often based on a geometry which he develops in different versions to reach his designs. The new versions derives from that first geometry and are all different from each other but still recognizable as members of the same geometrical family.

One example is his Tea and Coffee Tower for Alessi which is an ensemble of mass-produced one-of-a-kind objects. The geometry of every object is generated by 8 different curves. The curves are combined differently into 99 unique teapots (Carpo, 2004).

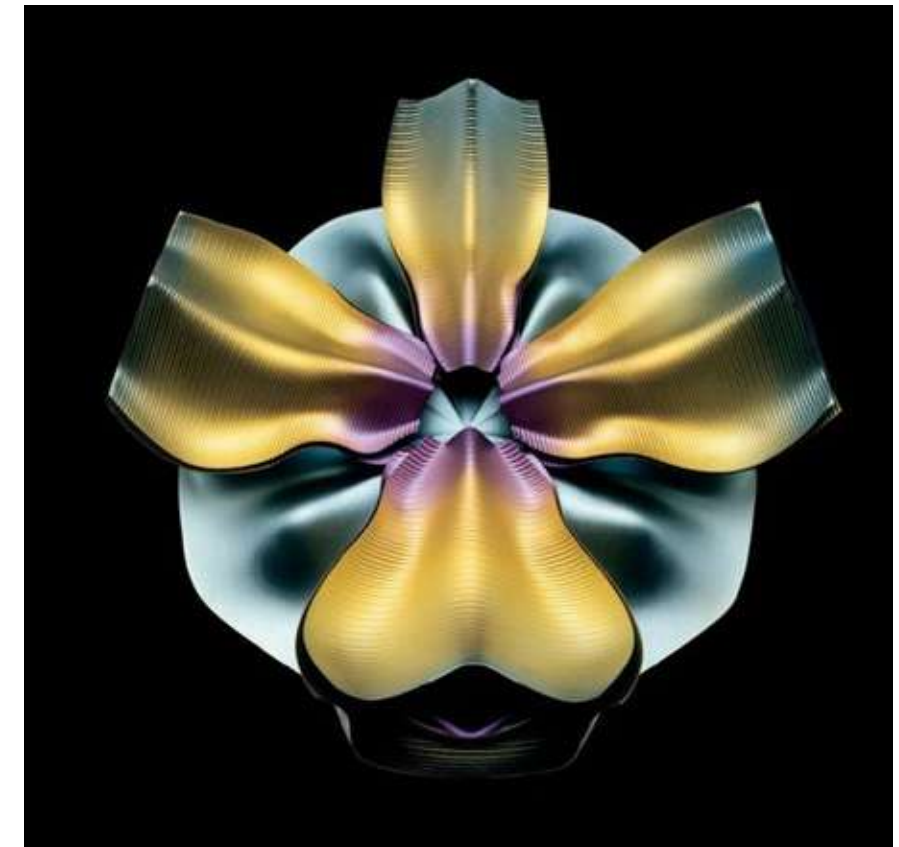


Fig. 3. Tea and Coffee towers for Alessi, 2003
Greg Lynn

**"You can't have similarity without difference and
you can't have difference without similarity".**

-Claude Lévi-Strauss

Pattern recognition

Mario Carpo explains the difference between forms in the mechanical universe and forms in the digital universe inherited in two technologies: *the mechanical world produces objects; the electronic world produces sequences and numbers which generates objects.*

A digital production process enables one algorithm to generate an infinite number of mathematical functions, various forms and surfaces where each product can be one of a kind. Mario Carpo calls this "*Logic of serial production*", which is the opposite to mechanical production. Another term that describes the same term is "*mass customization*", a serial production of one of a kind pieces. What defines a *mass customization* series is not the form of a single object but rather the difference between the objects in the series (Carpo, 2004).

Carpo introduces the family concept with the parable of the design of a car brand.

All cars of one brand have the same geometric similarities so that their design can be recognized. But there needs to be a difference, big enough, to different the cheapest car model from the most luxurious. What they have in common would be defined by an engineer as a mathematical function but in most cases it would just be similarities measured by sight called *Pattern recognition*. The human intelligence can recognize an almost invisible generative structure shared by two visibly different forms (Carpo, 2004).

Variety vs. variation

Variety (difference) and variation (self similarity can be described as two general developments. Similarity can rise from difference and difference can rise out of similarity. Deleuze and Guattari claims that a race horse has more in common with a gray hound and a draft horse with an ox, than each to the other (Reiser, Umemoto, 2006).

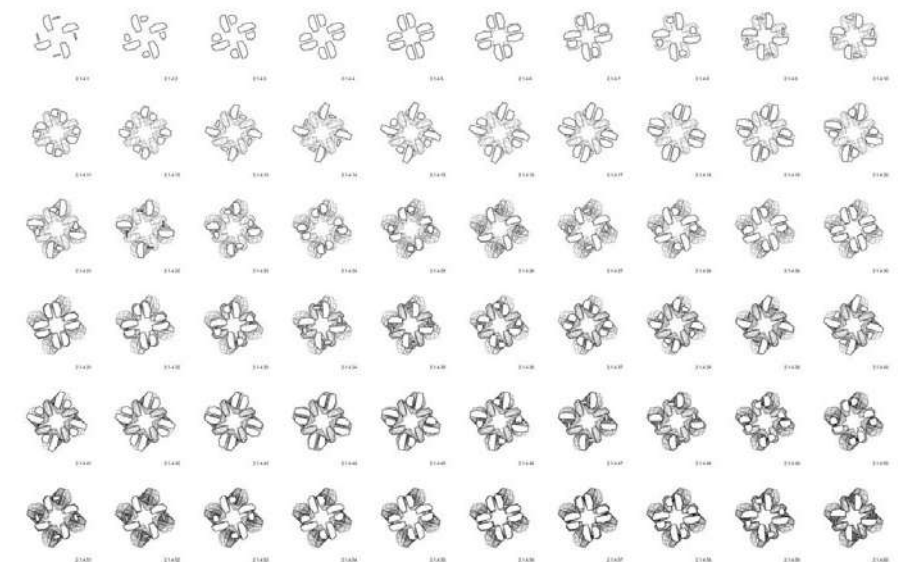


Fig. 4. Architecture- System of multiplicities, 2010
Rocker- Lange



Fig. 5. Subjectile, Sans titre 1998
Objectile (Bernard Cache and Patrick Beaucé)

Objectile/ Subjectile

One person prominent in the non-standard debate is the French architect Bernard Cache. Cache describes the early digital tools very similar to the analogue, traditional methods. They could be used for mechanical and building design. When more advanced geometries was being designed such as cars and airplanes they were drawn by hand and calculated manually.

Objects made by the new generation of digital design software are no longer designed, they are calculated. This new parametric systems enables a non-standard mode of production which allows production of unique objects within the same series.

Cache divides objects in two different categories, variable objects from a surface, subjectiles and variable objects from a volume, objectiles (Nilsson, 2007).

The French philosopher Gilles Deleuze (1925-1995) continued developing Cache's concept of the objectile in his book *The Fold: Leibniz and the Baroque* from 1988. Deleuze forms a new definition of the object where it no longer has a definitive form but is defined by a mathematical function within a "continuum through variation".



Fig. 6. Objectile, Sans titre 1998
Objectile (Bernard Cache and Patrick Beaucé)

Bernard Cache founded together with the artist and designer Patrick Beaucé their practice Objectile in 1996. The practice has been working with housing projects, interior and industrial design projects and has been publishing writings on architectural theory. Working with digital design tool, researching the field of "non-standard" objects utilizing the new available technologies (Frac Centre).

This kind of digital production is usually called "mass- customization" instead of "mass-production" – or in architecture "non-standard" especially after the exhibition with the same name in Centre Pompidou in Paris 2003. The exhibition was organized by Frédéric

Migayrou, director of the MNAM-CCI at the Centre Pompidou Paris. The exhibition brought together international names engaged in non-standard architecture; Asymptote, dECOI, DR.D, Greg Lynn, Kol/Mac Studio, Kovac, NOX, Objectile, Oosterhuis, R&Sie, Servo and UN Studio. E.S (Domus, 2003).

The living factory project was Objectile's contribution to the Centre Pompidou exhibition. Their project is both a product and a manufacturing process at the same time. The customer could select differed parameters from a computer screen, the order was sent to the factory and delivered the next day. (Pattern Recognition)



Fig. 7. Good vibrations top cabinet 2015
Ferruccio Laviani for Fratelli Boffi

Glitch

A *glitch* is a temporary disturbance in a system. The problem usually corrects itself which makes it hard to find its source. This term exists for instance in computation, the electronic industry and video games (Wikipedia, n.d.).

Our technical devices are far from perfect and when failures appear,

artists has been quick to capture unexpected results of malfunctions both analogue and digital errors.

The Dutch artist Rosa Menkman describes in her Glitch studies manifesto the advantage of glitch studies as a way to reach beyond genres and find imperfection and reach unexpected results (APRJA, 2012).

1 The dominant, continuing search for a noiseless channel has been — and will always be — no more than a regrettable, ill-fated dogma.

Acknowledge that although the constant search for complete transparency brings newer, 'better' media, every one of these improved techniques will always possess their own inherent fingerprints of imperfection.

2 Dispute the operating templates of creative practice; fight genres, interfaces and expectations!

Refuse to stay locked into one medium or between contradictions like real vs. virtual, obsolete vs up-to-date, open vs. proprietary or digital vs. analog. Surf the vortex of technology, the in-between, the art of artifacts!

5 Realize that the gospel of glitch art also tells about new standards implemented by corruption.

Not all glitch art is progressive or /something new./ The popularization and cultivation of the avant-garde of mishaps has become predestined and unavoidable. Be aware of easily reproducible /glitch effects/, automated by softwares and plug-ins. What is now a glitch will become a fashion.

6 Force the audience to voyage the acousmatic videoscape. Create conceptually synesthetic artworks, that exploit both visual and aural glitch (or other noise) artifacts at the same time. Employ these noise artifacts as a nebula that shrouds the technology and its inner workings and that will compel an audience to listen and watch more exhaustively.

3 Get away from the established action scripts and join the avant-garde of the unknown. Become a nomad of noise artifacts!

The static, linear notion of information-transmission can be interrupted on three occasions; during encoding-decoding (compression), feedback or when a glitch (an unexpected break within the flow of technology) occurs. Noise artists must exploit these noise artifacts and explore the new opportunities they provide.

4 Employ bends and breaks as a metaphor for différance. Use the glitch as an exoskeleton for progress.

Find catharsis in disintegration, ruptures and cracks; manipulate, bend and break any medium towards the point where it becomes something new; create /glitch art/.

7 Rejoice the critical trans-media aesthetics of glitch artifacts.

Utilize glitches to bring any medium in a critical state of hypertrophy, to (subsequently) criticize its inherent politics.

8 Employ Glitchspeak (as opposed to Newspeak) and study what is outside of knowledge. Glitch theory is what you can just get away with!

Flow cannot be understood without interruption or function without glitching.

This is why glitch studies is necessary.

Fig. 8. Glitch studies manifesto
Rosa Menkman



Fig. 9. Tel Aviv museum of art 2011
Preston Scott Cohen, Tel Aviv

Projective geometries

Preston Scott Cohen works with *projective geometries* as working method in many of his projects. He uses one basic geometries that he projects onto a plane from different views. Then it's projected back on the basic geometry and creates a new building geometry from the original (Appendix, 1996).

Cohen's working method is a clever way of working where a very simple volume is resulting in a complex geometry. He is editing the volumes after the automated process to adapt them to a program and to adapt the geometries to a building context.

The connection between the input and the output is visually clear. When looking at *Tel Aviv art museum* and the cardboard models in his process there is a clear resemblance.

During the design project most of the transformation has been applied in a x and y axis and not so much in z. This is visible in the series of catalogue houses. They are quite complex but not in the z-axis.

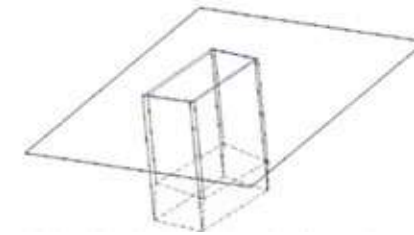


Fig. 10. Stereotomic Permutations, Preston Scott Cohen
1. A basic geometry is projected onto a plane from different angles.

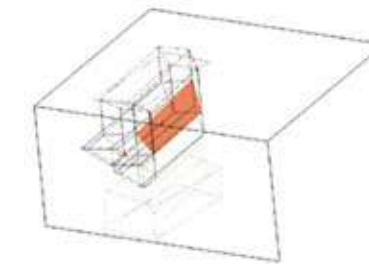


Fig. 11. Stereotomic Permutations, Preston Scott Cohen
2. The curves are projected onto the original geometry

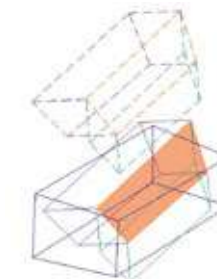


Fig. 12. Stereotomic Permutations, Preston Scott Cohen
3. The new curves creates a new volume which is joined with the original volume



Fig. 13. Stereotomic Permutations, Preston Scott Cohen
4. Final outcome, cardboard model



Fig. 14. Painting, base for Maxxi museum
Zaha Hadid

Generative drawings

Zaha Hadid is working with Generative drawings as working method. Many of her buildings is based on artistic paintings which later is turned into projects.

In 2017 her paintings together with models and projects was exhibited at the Venice Biennale. She describes her method as a way to reach a surprising mode of conceptual research and representation where she can explore and control development of volumes and forms (Luisardi 2017).

Maxxi museum in Rome was her first project to be realized and was finished in 2009 and took almost ten years to complete. The museum is supposed to be a campus for art rather than a object container. Flows and pathways overlap has been important in the design of the building where the continuity of spaces without wall divisions creates a suitable space for both moving and temporary exhibitions (Giannotti, 2009).

Design proposal

Introduction

This design project is based on the findings from earlier design studies. A working method has been developed during the first design study and then applied on the following studies.

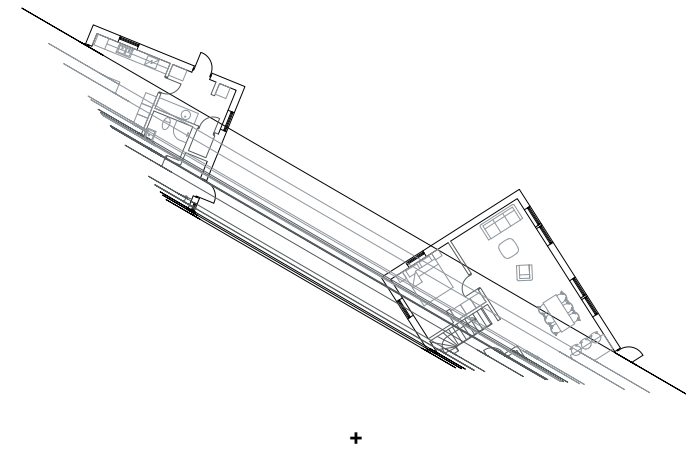
The study was divided in three parts and used the same method applied on different scales, volume, room and object. Together this three scales creates a whole.

The project is a series of four villas that are iterations of an already existing Villa. The iterations are created with a design method which is partly automated and partly manually processed.

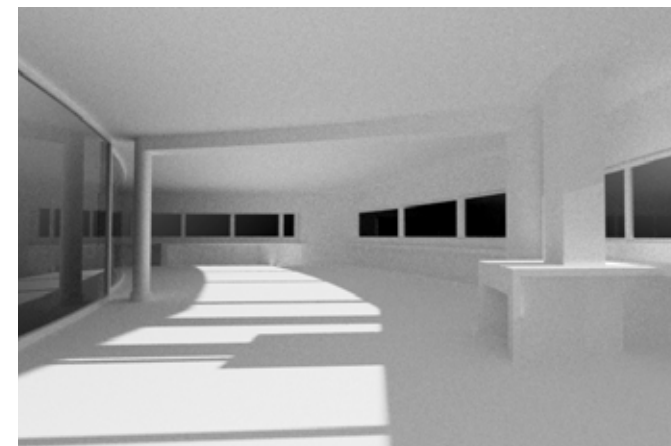
The original villa, the input object, is a *Catalog-house*, a housing typology common in villa suburbs from the early 19th century until today.

These are prefabricated houses that you find in a catalog, thereof the name. These house are often seen as a ignoble version of a villa designed as a single object by an architect. They are not unique and always multiple.

This project aims to create a series of one-of-a-kind-villas that are geometrically based on a typical catalog house but retches beyond standardization and conventional solutions.



+



+



Series

This project is, based on the 90's definition of series, looking for it's own definition of series. Greg Lynn defines series, or what he would call a family, as different objects recognizable as members of the same geometric family. He doesn't define how big the differences are but by looking at his work one can tell that the difference is quite small. Mario Carpo talks about how the human intelligence can recognize almost invisible generative structures.

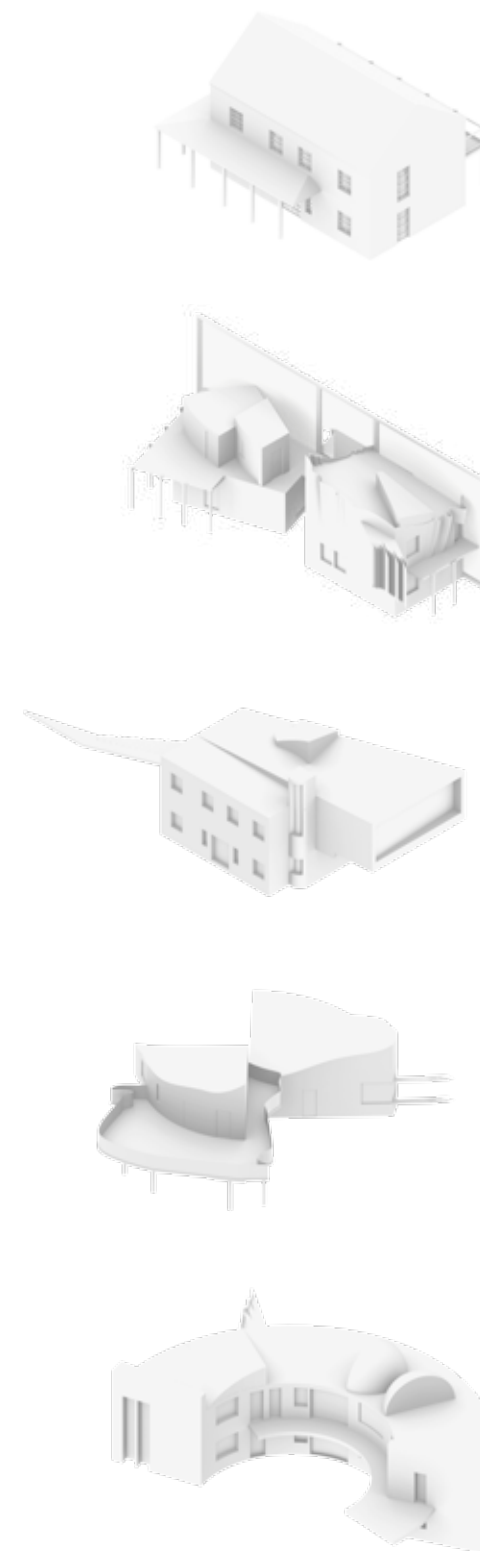
In this design project, the difference between the series members are much bigger then described by Lynn and Carpo. Greg Lynn uses in his series of teapots, 8 curves that are combined in to several objects. The combined curves are similar to each other which results in objects with small differences. In this project the input object (equal to Lynns 8 curves) are objects with a higher level of complexity from start which results in more complex outcomes.

The operation itself is on top of that transforming the input object which also adds to the level of difference in every single iteration. To be able to identify the four villas as a series there is two important criteria.

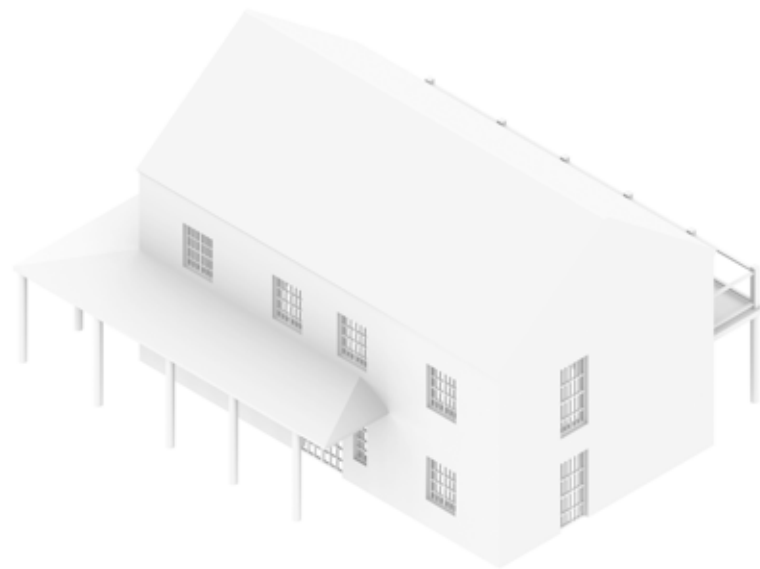
There must be a certain level of recognition between every single iteration and the input object. The input is a generic Villa which most people can relate to and recognize.

Secondly there should be similarities between the four different outcomes, they are to be seen as siblings. Therefore it's important that the automated process doesn't transform the objects to much.

Of all the 12 generated outcomes in this project, some of them where more successful then others. Some of them where too strange which by other words means to far from the input villa or too far from anything we could recognize as a villa.



Isometric view
Myresjöhus, Villa 1, Villa 5, Villa 8, Villa 9



Input
Isometric view, Myresjöhus, Cobb bay

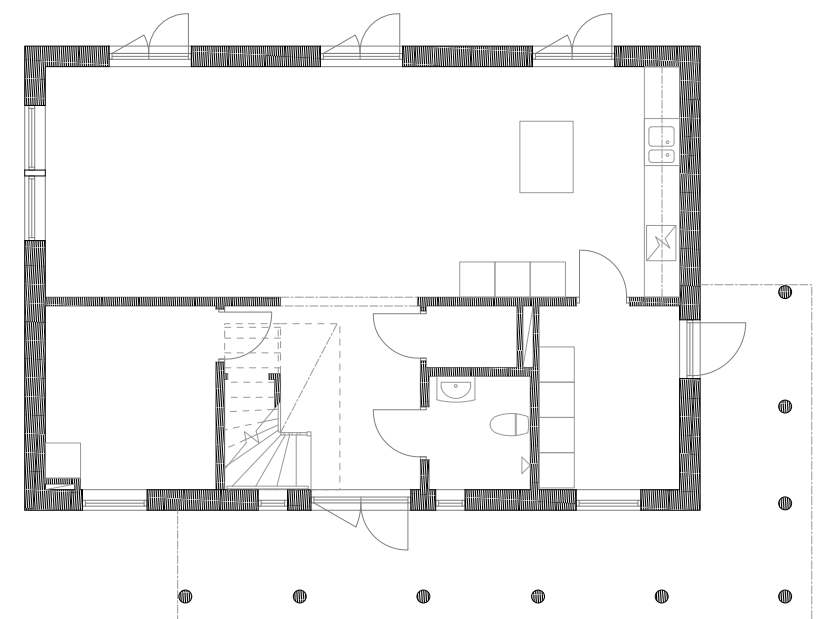
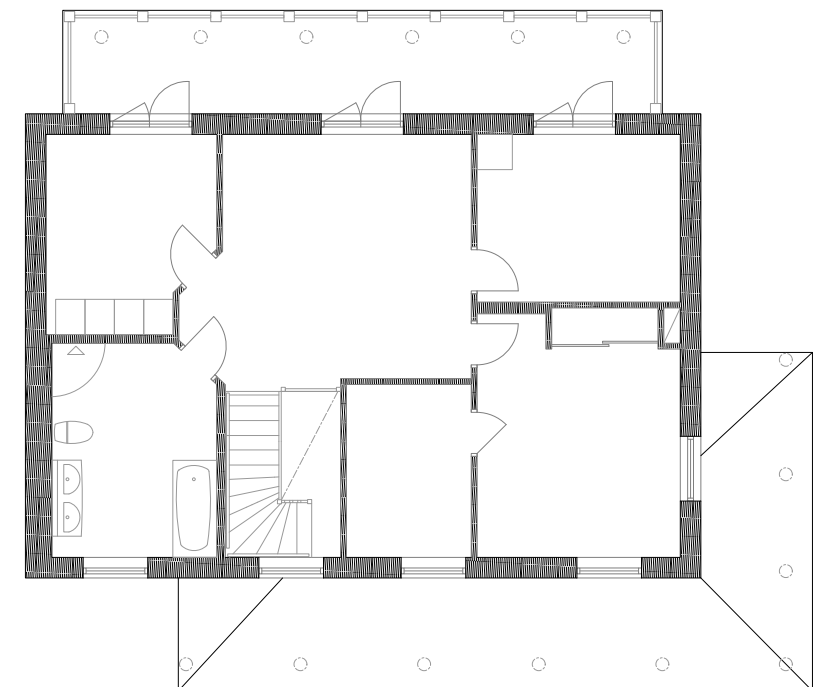
Input

The input is a generic villa from the catalog-house manufacturer Myresjöhus. The house model is called Cobb Bay and are described in their catalog as a "two story villa in New England style". The villa has an open floor plan with a combined space for kitchen/dining and living room. The kitchen has a kitchen island that defines the kitchen space.

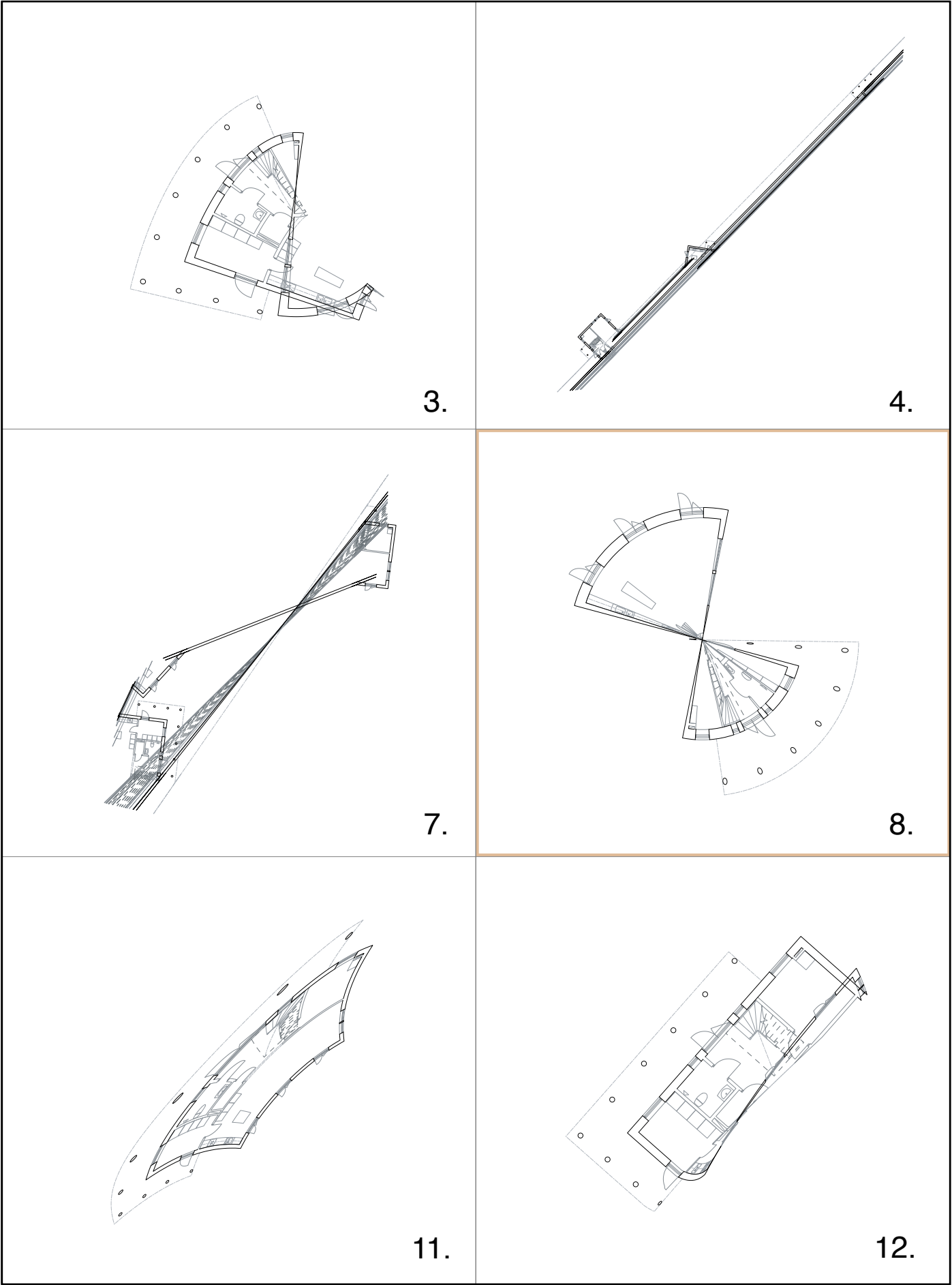
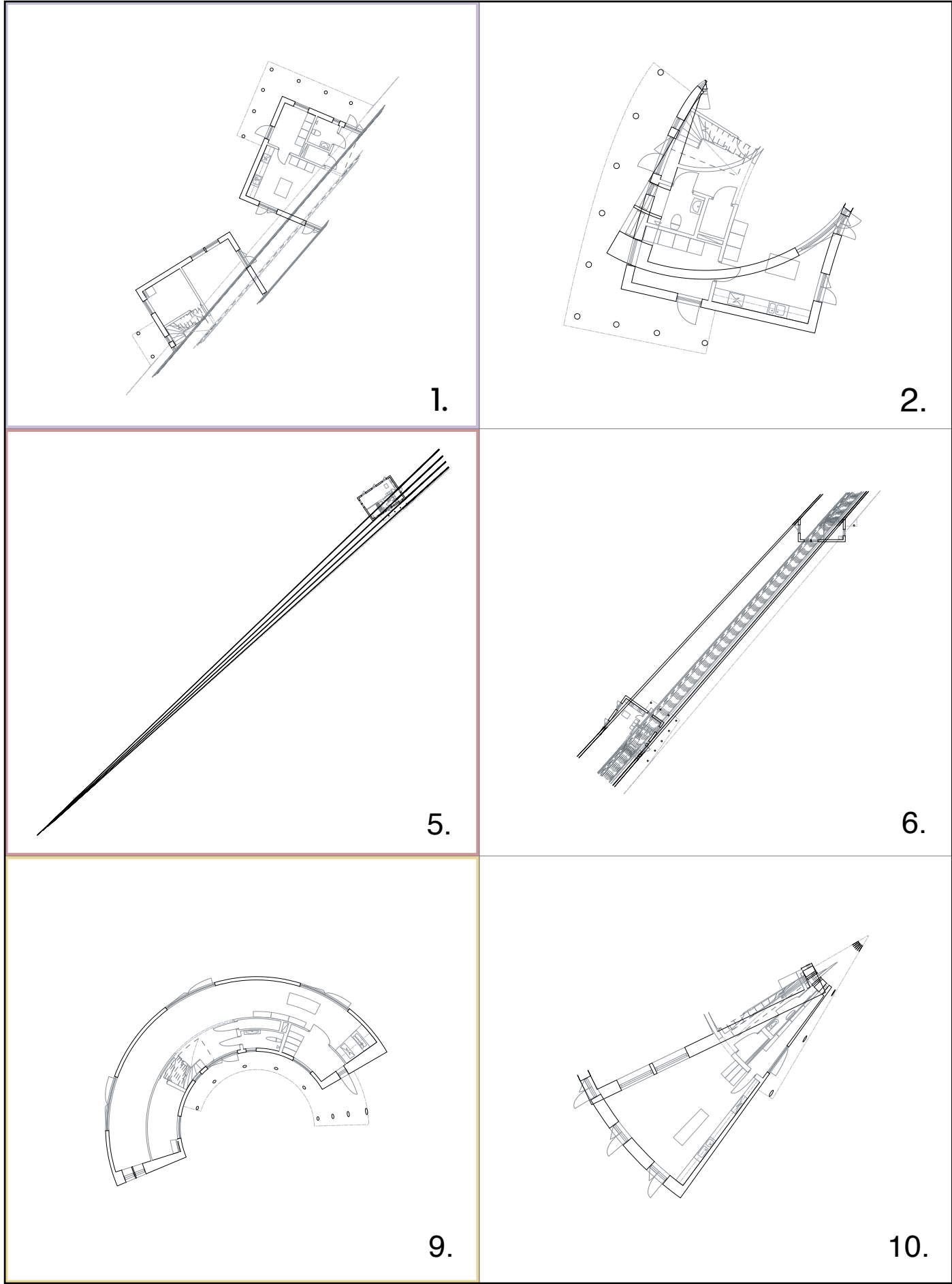
The second floor has three bedrooms, two smaller and one master bedroom. A big bathroom is placed on the right hand side and a walk in closet is located next to the master bedroom. A big balcony can be reached from one of the long sides. The rooms facing this side has full height windows.

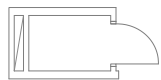
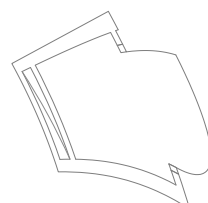
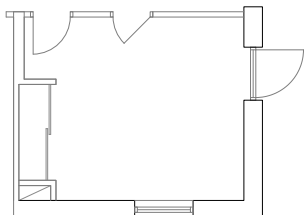
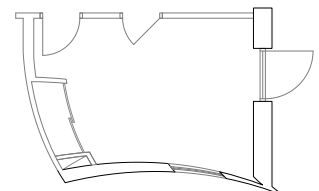
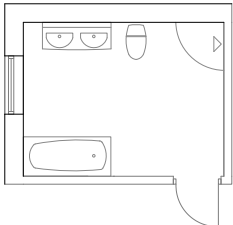
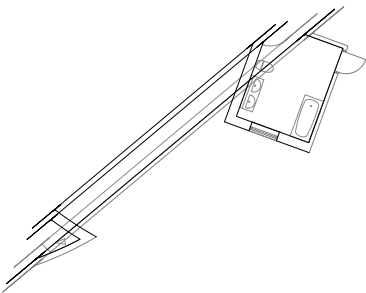
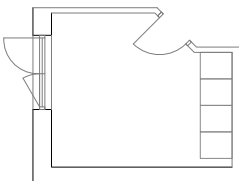
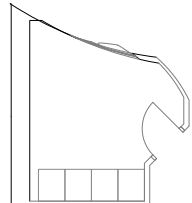
Catalog-houses has been existing on the Swedish market since the turn of the century. Due to the urbanization there was a lack of housing in the cities and the suburbs started to grow. Prefabricated villas was a more economical alternative and easier to build (Hållbus, 2017).

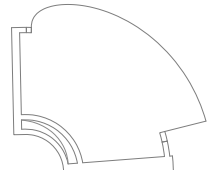
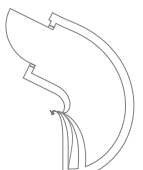
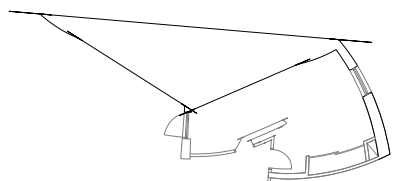
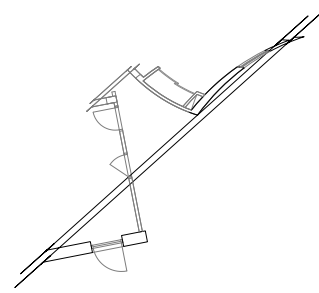
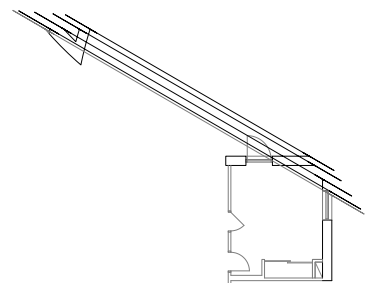
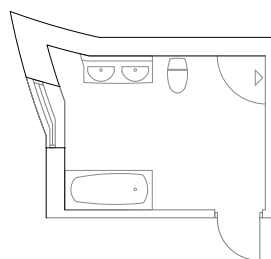
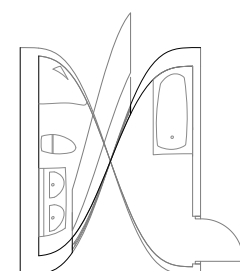
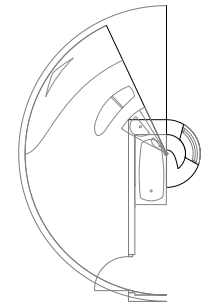
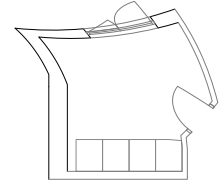
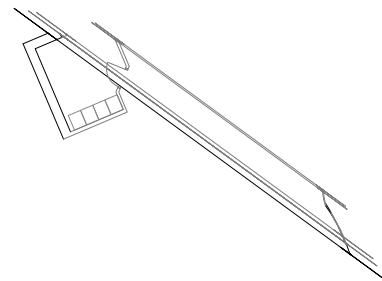
Myresjöhus released their first villa catalog in 1927. The first catalog showed 8 villas with almost the same floor plan layout but with different facade and roof options (Myresjöhus, n.d.).



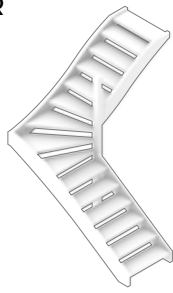
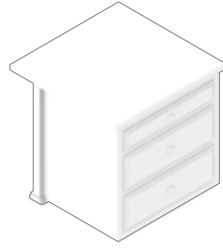
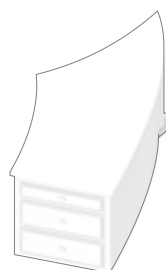
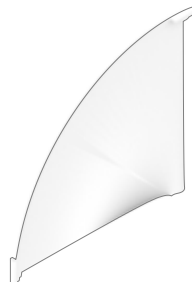
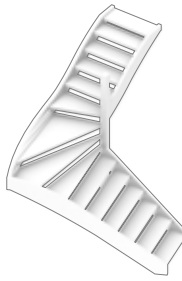
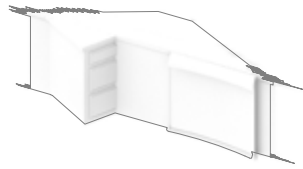
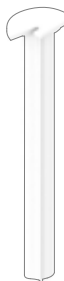
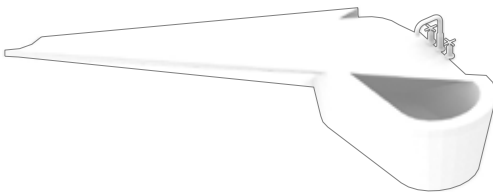
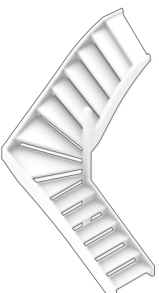
Input
Myresjöhus. Below ground floor, above second floor



CLOSET		
MASTER BEDROOM		
BATHROOM		
BEDROOM		

Room
Overview of 4 room types extracted from the input and transformed with flow along curve

STAIR	BATHTUB	KITCHEN ISLAND	COLUMN
			
			
			
			
			

Object

Overview 4 objects extracted from the input and transformed with flow along curve

Volume

The 12 new villas derives from the input villa. Due to the automated transformation process it's relatively fast to generate new iterations. From the 12 options, 4 was selected and then edited to become a functional houses.

All 12 iterations where transformed with the command flow along curve (see design study chapter). The ones with curved shape was transformed using one straight curve and one arc as reference curves. The ones that has a stretched look was transformed using two straight reference curves.

The project was set to be a series of 4 villas, many enough to be doable according to the given time and to get a variety. Some of the options was easier to picture as villas (in this case nr. 1, 5, 8 and 9) and some where just too strange (for example 4, 6, 7).

Room

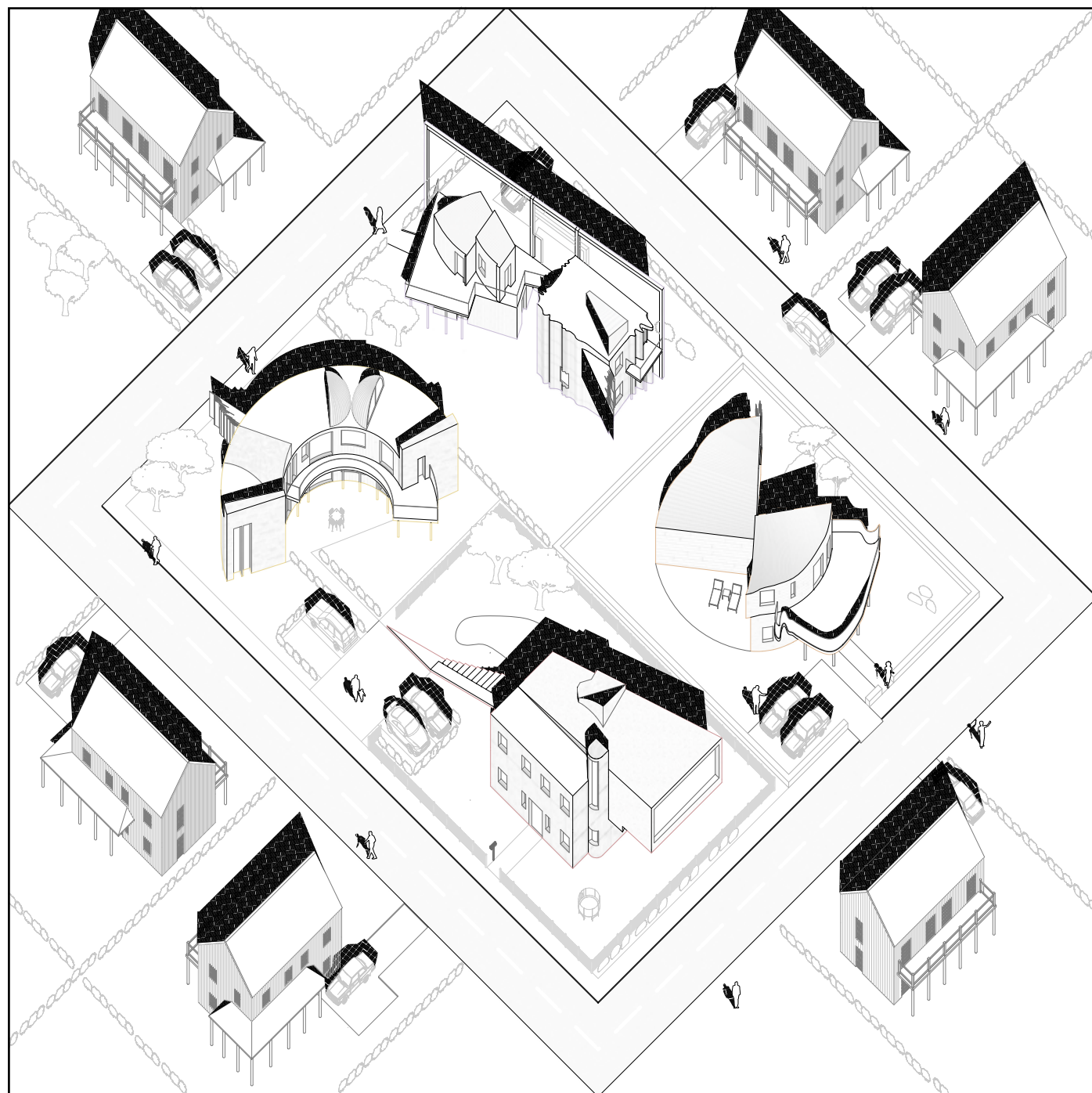
Four rooms were selected from the input villa: one closet, one bathroom and two bedrooms. They where transformed with flow along curve, bend and twist. The transformed rooms where added to the transformed volumes. The rooms are marked with colors to show which villa they belong to.

Object

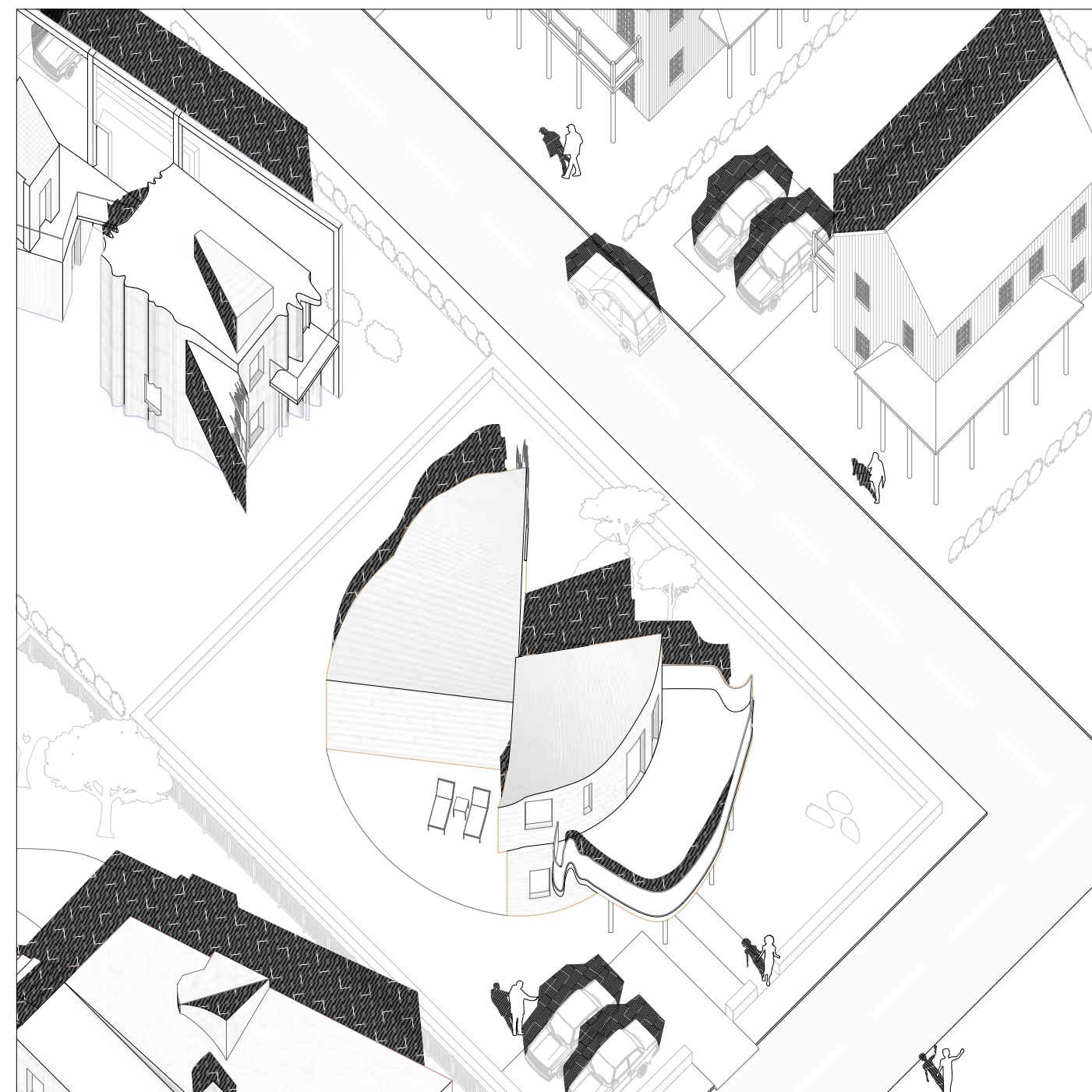
The selected objects where selected due to some different criteria. The column has been present from the second design study, where a column from Tempietto was transformed into a series of columns. The input villa has exterior columns that's been transformed and reused. One column is on the border between a column and a wall and are placed as a room separator between the kitchen and the living room in house 8.

By looking in the catalogs from the catalog-house manufacturer there are some interior objects that are shown in the interior pictures. It's mainly course the kitchen and living room. But there is also close ups on both the stair and the bathtub in several catalogs.

The stair has an important roll in a villa by it's roll of connecting the two levels. The bathtub is giving a sense of luxury and relaxation. Finally the kitchen island that's described as "the heart of the house" by one of the house manufacturer. It's where family and friends gathers to prepare the food together.

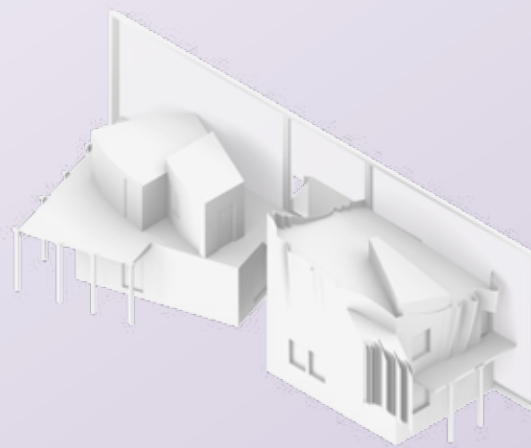


Axonometric drawing
The four Villas placed as neighbors (original size 690x690 mm)



Axonometric drawing
Detail

Villa 1



Villa 1 is divided in three main volumes connected with a big glass wall. The wall is both giving shelter from the wind and possible disturbing noise from near by roads or neighbors. Since it's transparent it's not a visual barricade. Both volumes are connected to this wall which gives them one totally glazed side.

The villa is suitable for a family and you could easily find privacy in one of the volumes. The master bedroom is situated on top of the kitchen, the only connection with the rooms

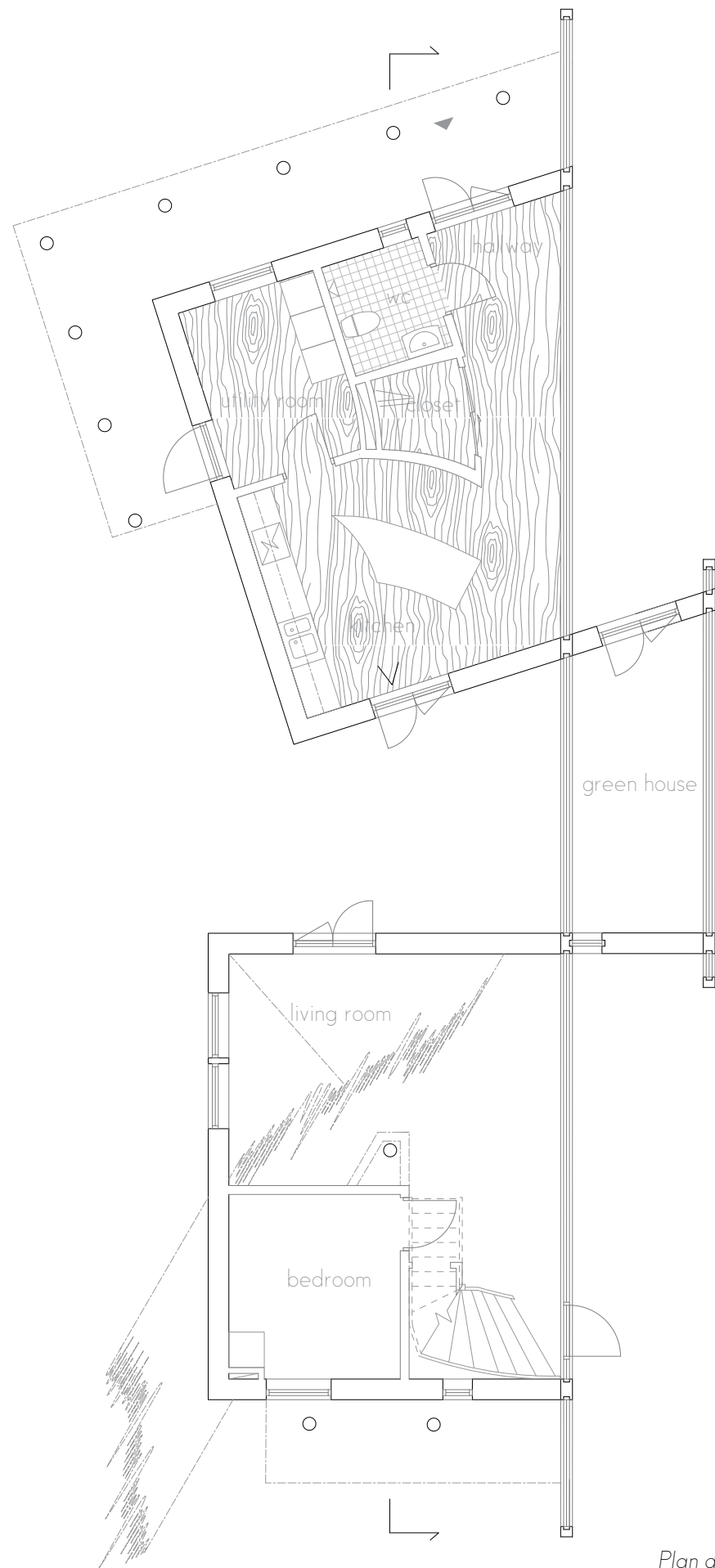
below is by the kitchen wall that's reaching from the kitchen through the slab and up in the bedroom. The wall form a sheltered space perfect for calm moments. Here you won't be disturbed from the rest of the family.

The main bathroom is located on the second floor which is a mezzanine that gives a connection between first and second floor. The bathtub is placed in a separate room and the shower is located on a partly glazed balcony, with a view.



Villa 1

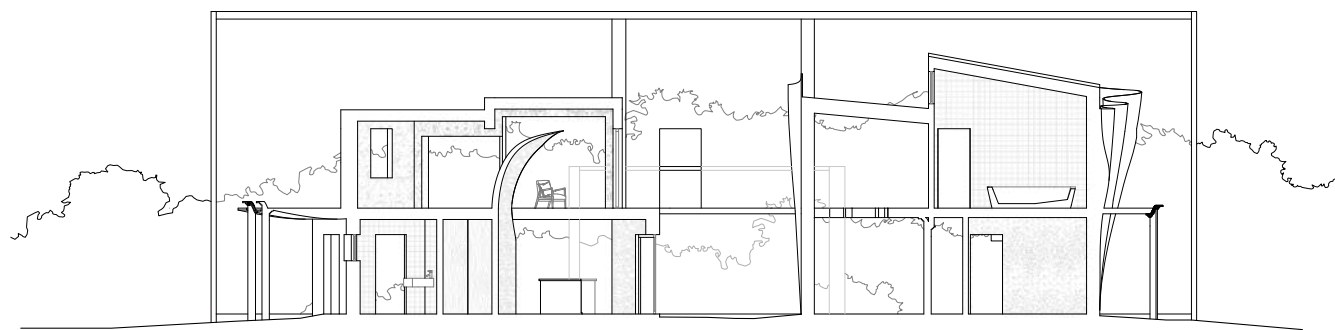
Interior perspective, kitchen on ground floor



Villa 1
Plan drawing, ground floor 1:50



Villa 1
Plan drawing, second floor 1:50



Villa 1
Section 1:100



Villa 1
Interior perspective, bathroom on second floor



Villa 1

Interior perspective, master bedroom on second floor

Villa 5



Villa 5 has a partly regular form that can be recognized from the input villa. The second floor has a sloping slab that starts from the exterior stair and leads up, towards a big window with a view. The slab is penetrated by three separate rooms, a closet, a bed room and a small room. These three rooms have a perpendicular floor.

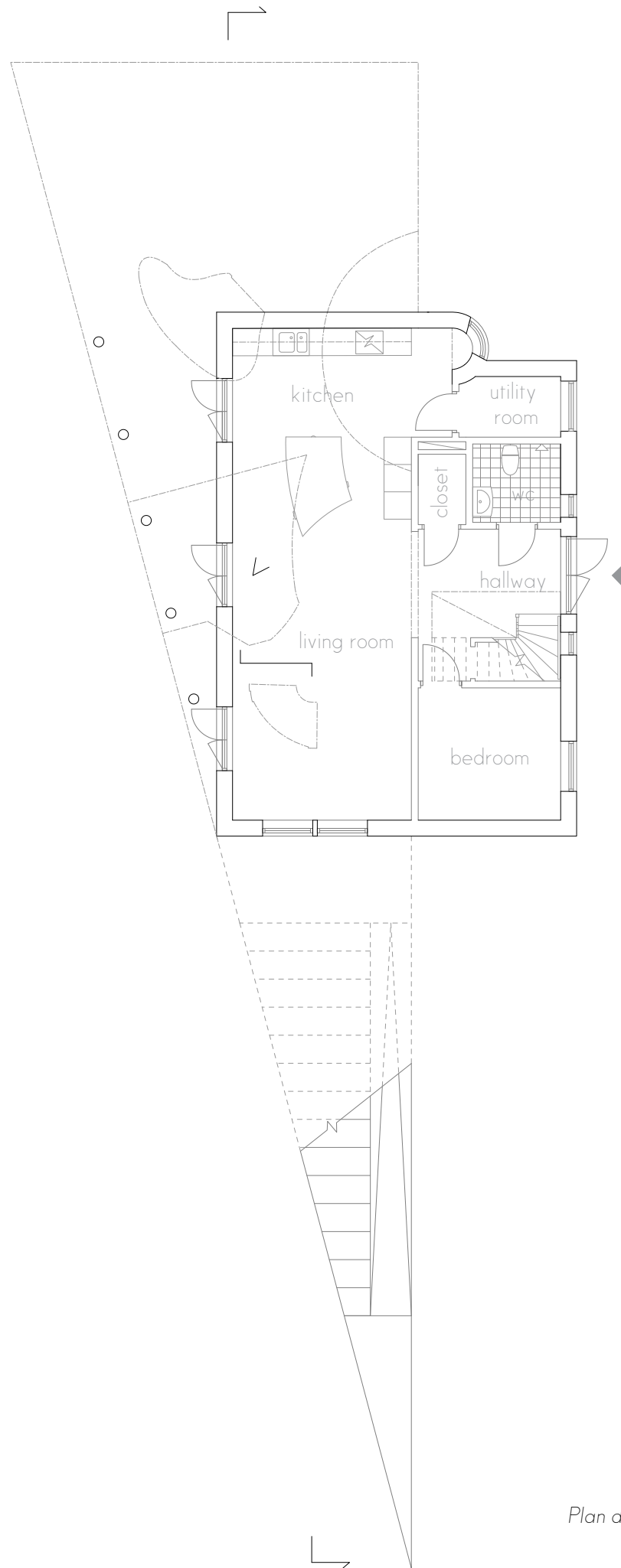
The main bathroom is located on the second floor. It is connected with the kitchen by a small atrium. The atrium continues upwards in the shape of a lantern.

The four free standing rooms on second floor are partly extruded downwards and can be seen from the kitchen and living room below and from the exterior as well. The house has two entrances and can be accessed on both levels. The "tail" is both a stair and a ramp that leads up to the second floor.

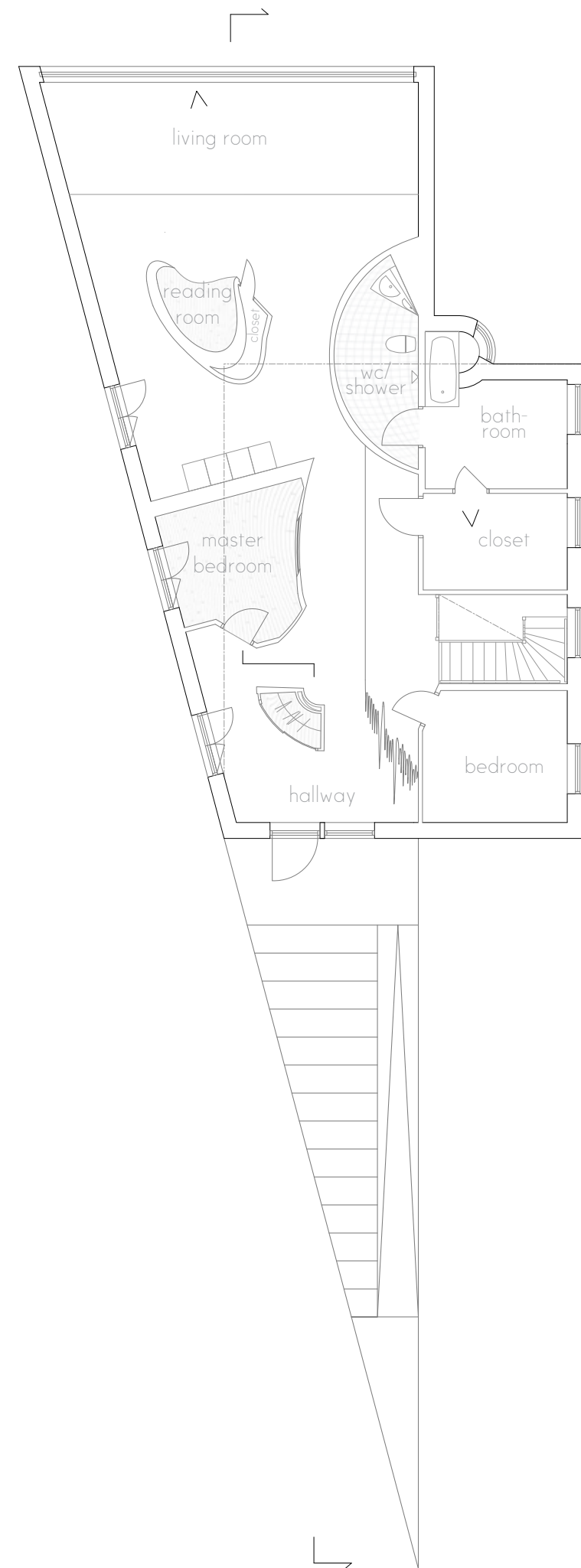


Villa 5

Interior perspective, bathroom on second floor



Villa 5
Plan drawing, ground floor 1:50



Villa 5
Plan drawing, second floor 1:50



Villa 5
Section 1:100



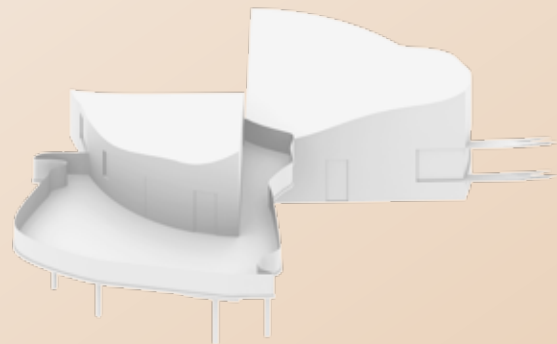
Villa 5
Interior perspective, kitchen on ground floor



Villa 5

Interior perspective, living room, second floor

Villa 8



Villa nr 8 is a smaller villa, suitable for someone that like to have guests over. The villa is divided in two volumes where the volumes has different functions. One of them, two stories and the other one single story.

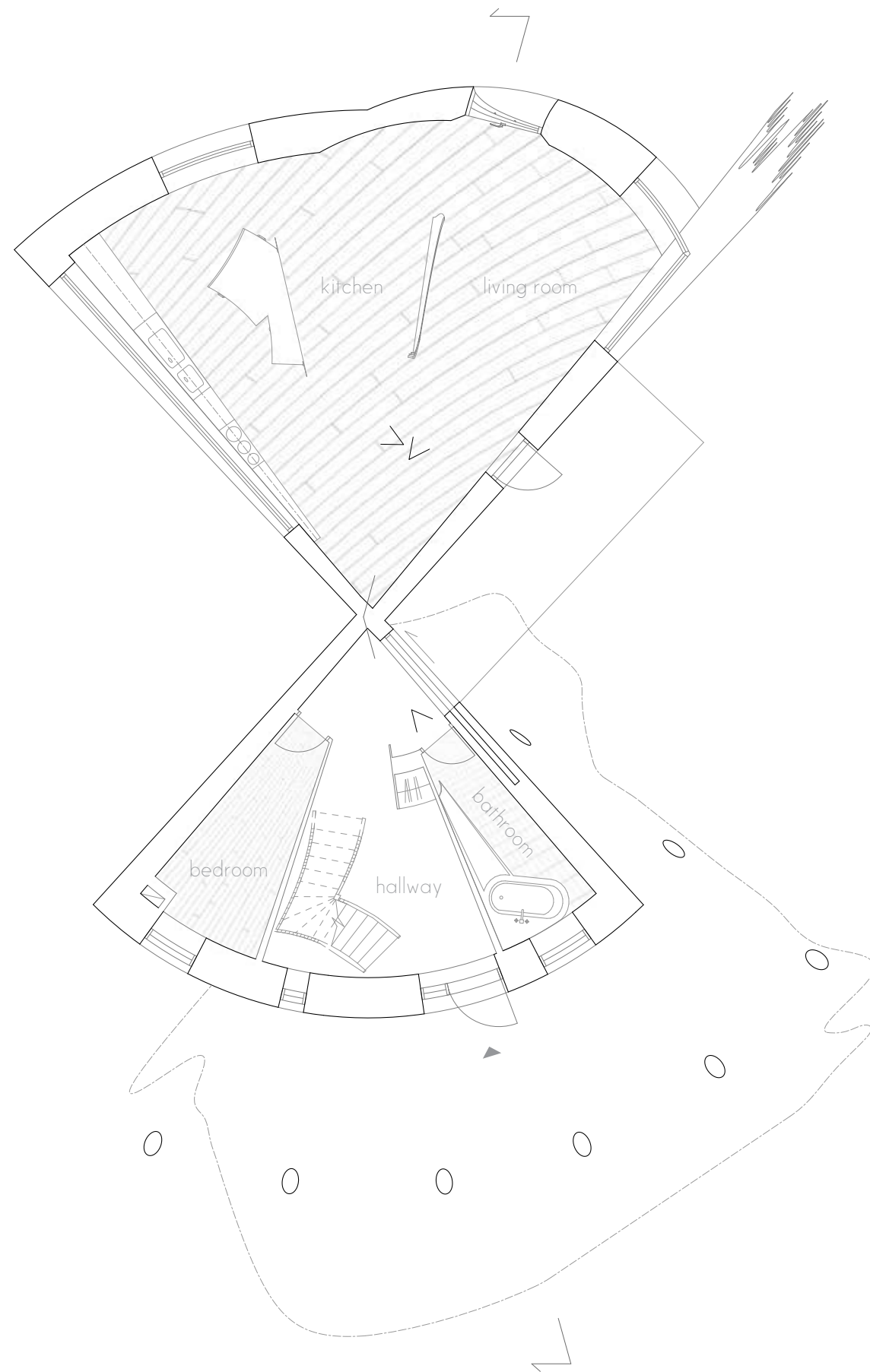
The combined living room and kitchen are partly separated with a column. A corner window is giving a nice view from the seating area.

The living functions are placed in the bigger volume, on two floors. Bedroom and bathroom are situated on the first floor. Master bedroom and toilet with shower are placed on the second floor. A big balcony can be accessed through the bedroom. All the interior rooms are characterized by the tapered form from the outer volume. It creates unique rooms with a shapes that drags the visitor into the room.

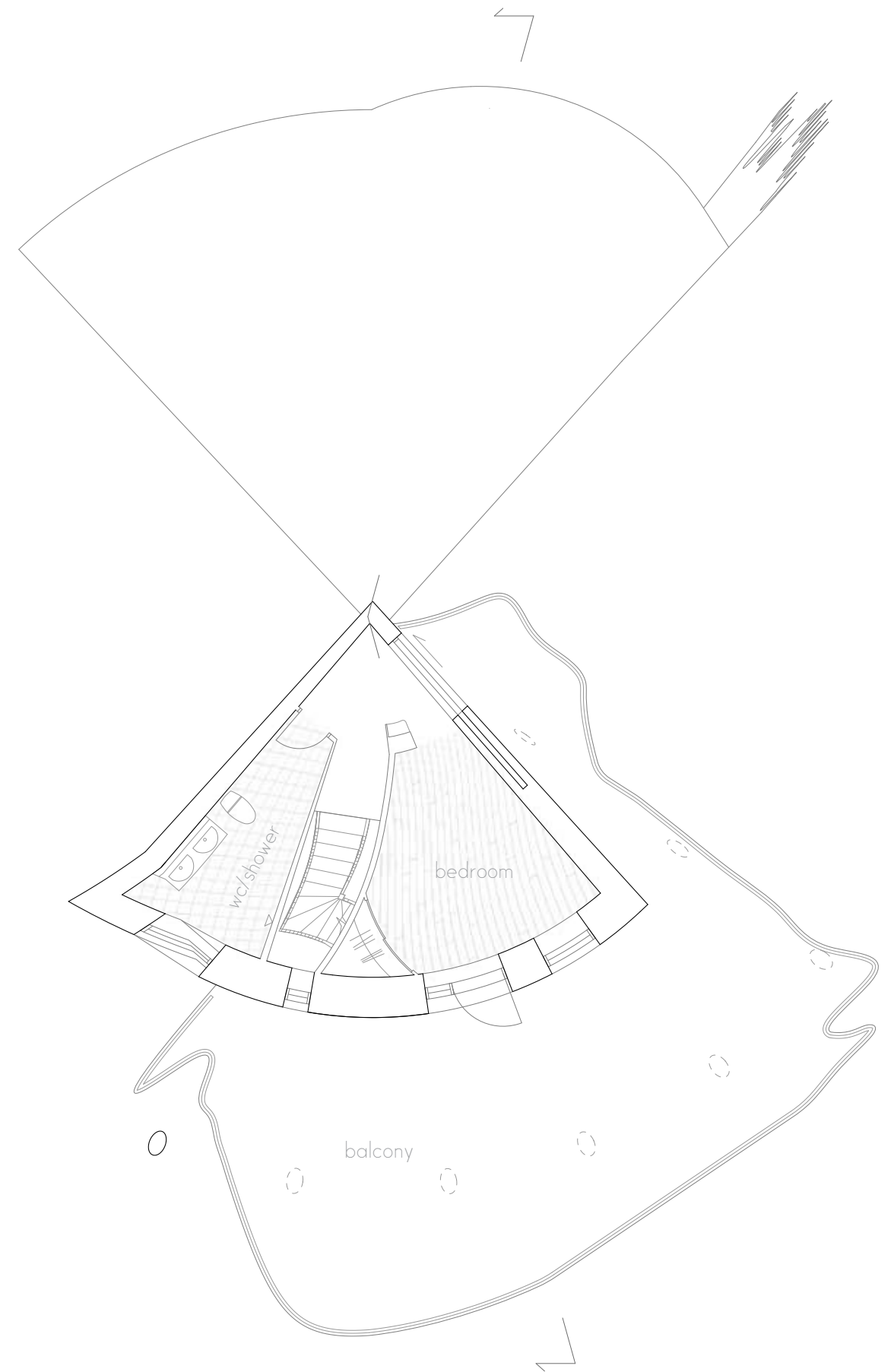


Villa 5

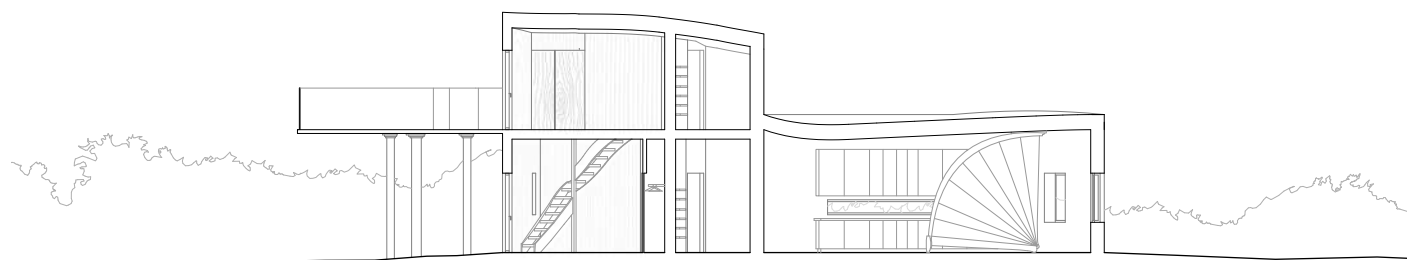
Interior perspective, bathroom on ground floor



Villa 8
Plan drawing, ground floor 1:50



Villa 8
Plan drawing, second floor 1:50



Villa 8
Section 1:100



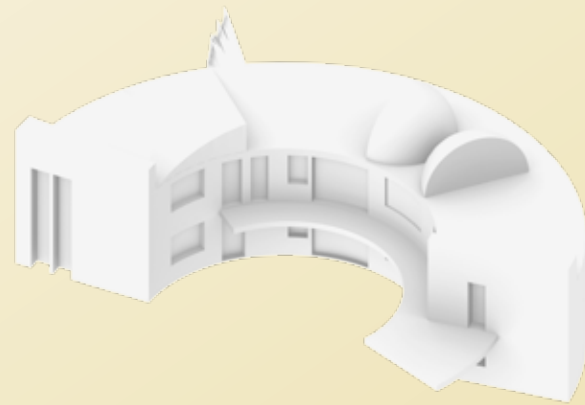
Villa 8
Interior perspective, kitchen on ground floor



Villa 8

Interior perspective, living room on ground floor

Villa 9



The half circle shaped villa has one long and one short side and has a clear back and front side which is different from the input. The curved shape creates a sheltered courtyard space in front of the building.

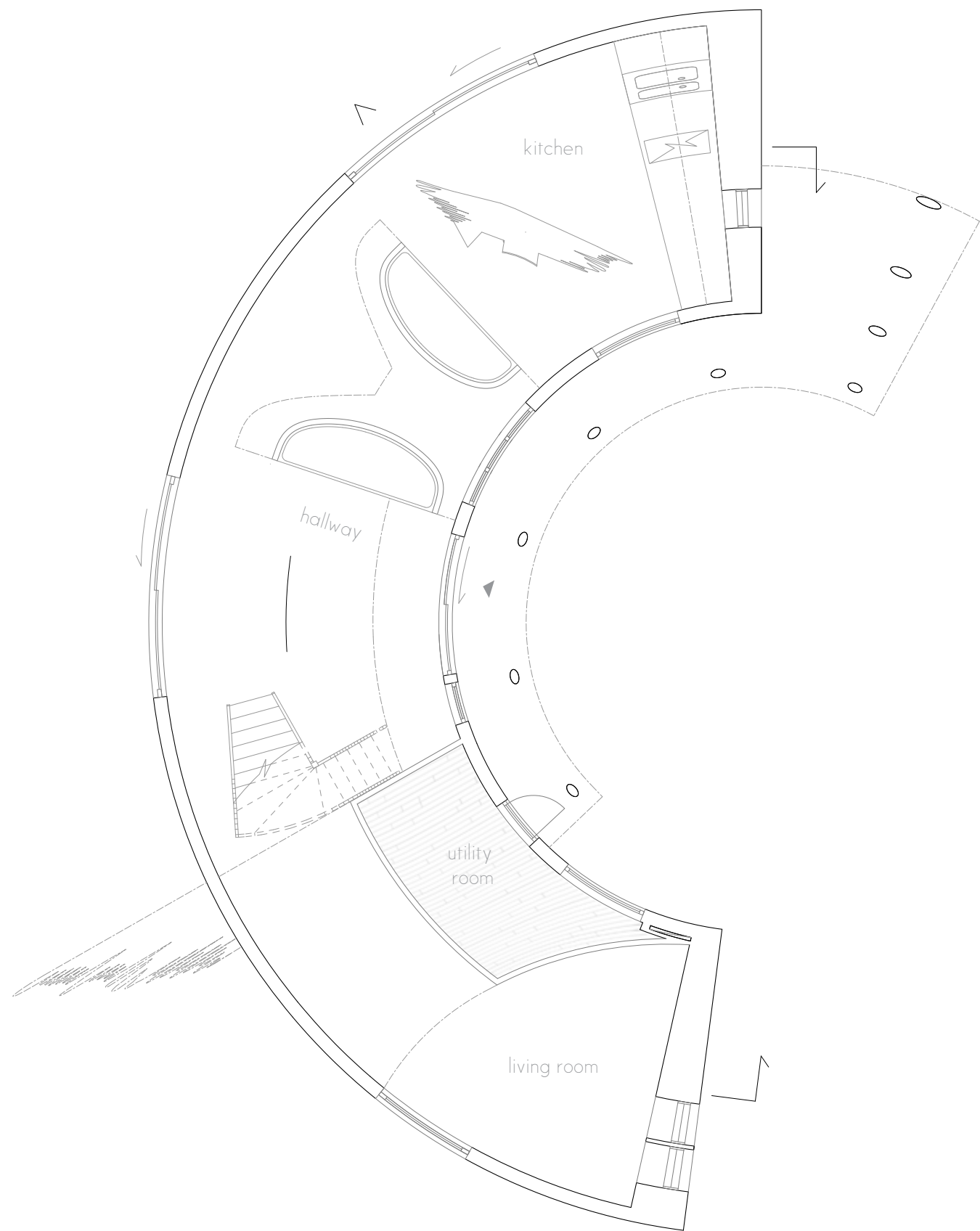
The interior has two floors, the second floor is a mezzanine floor which gives partly double ceiling height and creates a visual connection between the both floors.

The bathroom on the second floor is divided in two volumes where each room has a curved roof with a dormer window. The bathroom volumes continues down to the first floor where they form a seating facing the kitchen and hallway.

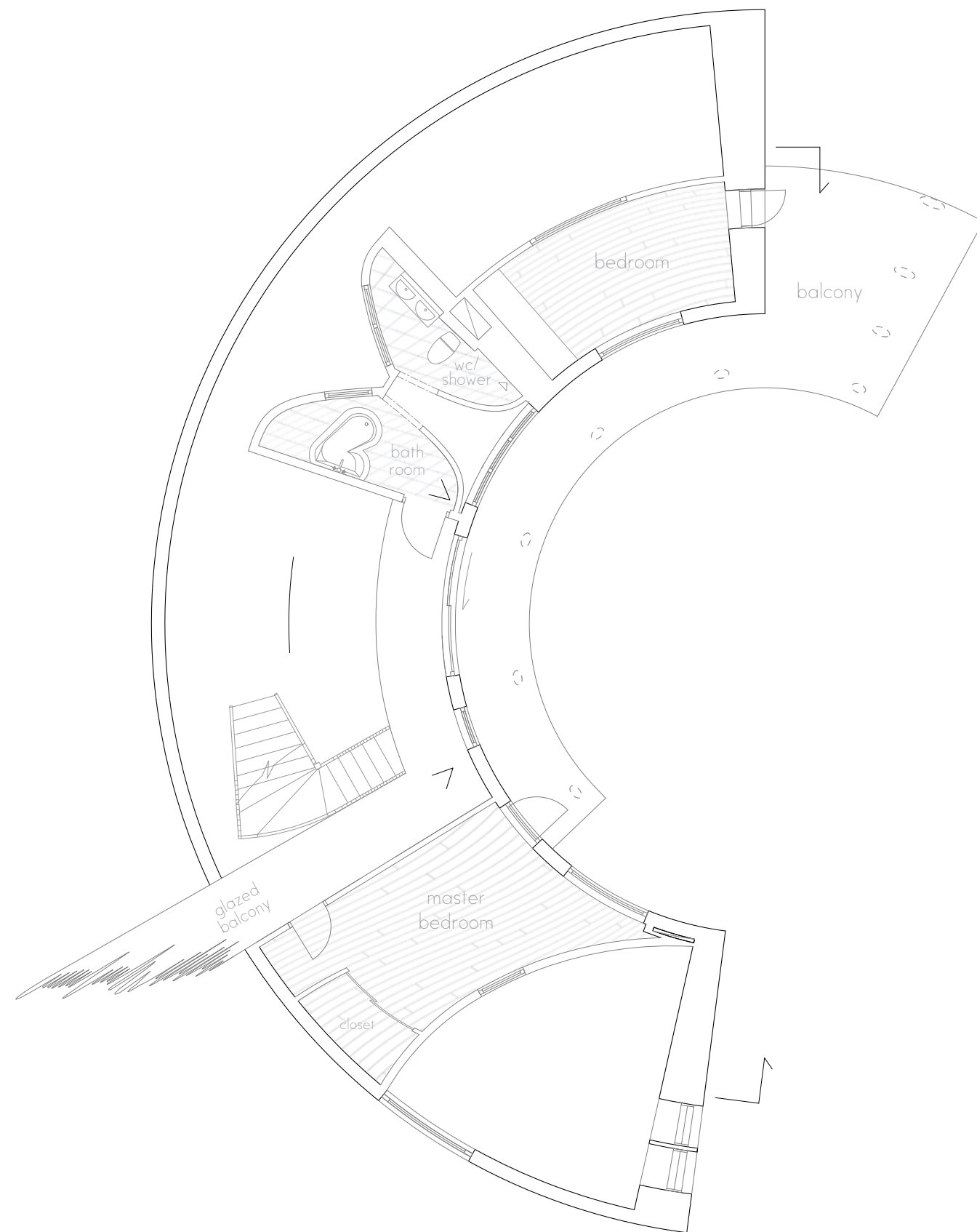


Villa 8

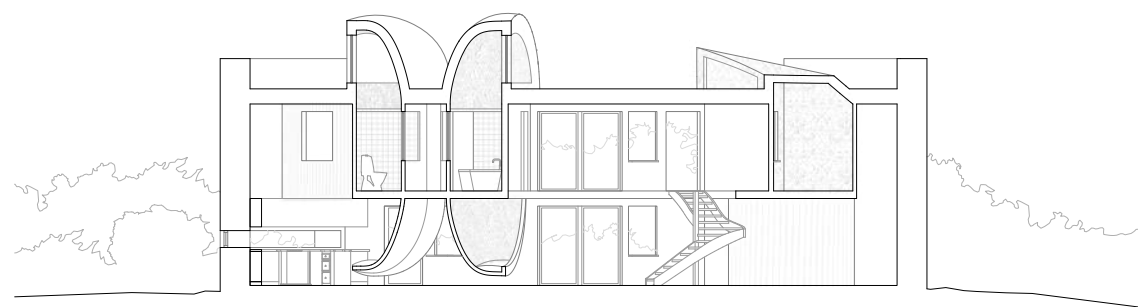
Interior perspective, hallway and balcony second floor



Villa 9
Plan drawing, ground floor 1:50



Villa 9
Plan drawing, second floor 1:50



Villa 9
Section 1:100



Villa 9
Interior perspective, bathroom on second floor



Villa 9
Interior perspective, kitchen on ground floor

The Catalog



Reference catalogs
From catalog-house manufacturer and Myresjöhus

Read the full catalog here:



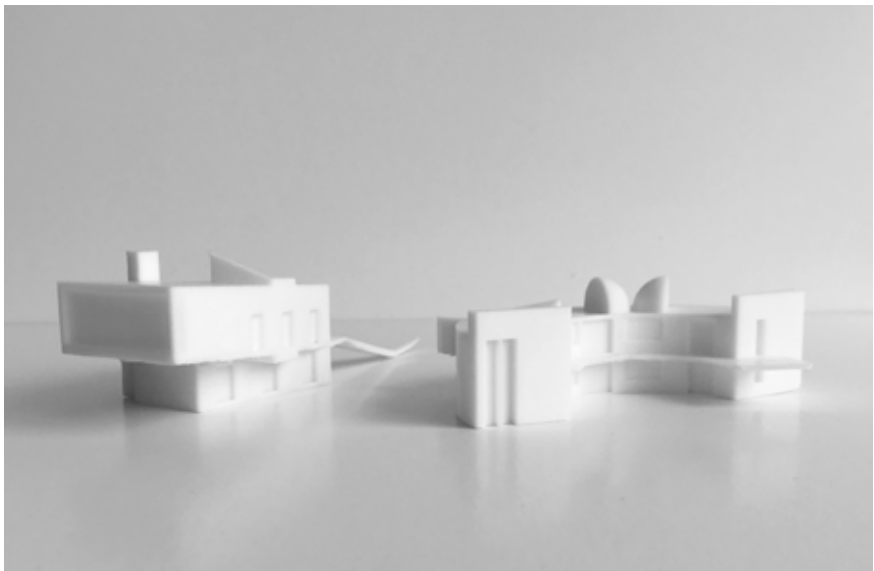
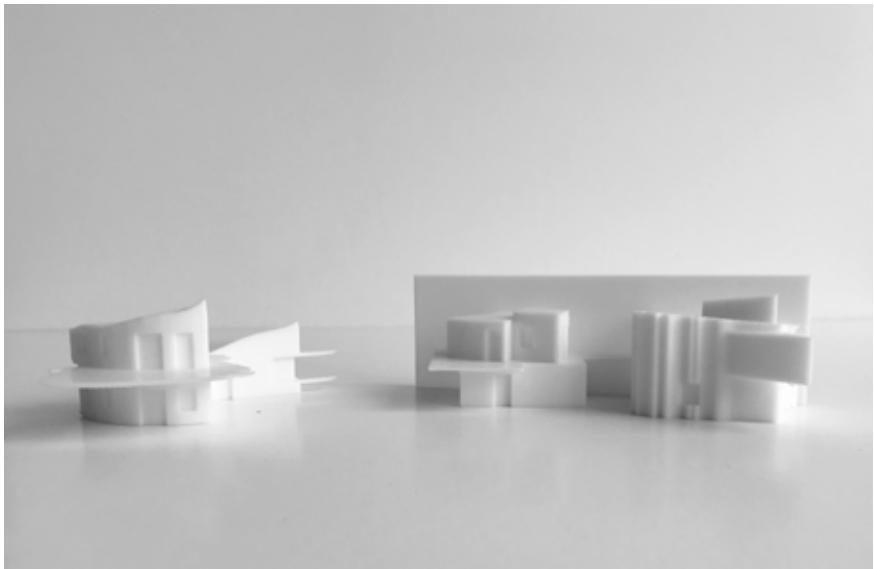
<https://www.yumpu.com/en/document/read/62697561/pallarphus-villa-catalog>



Catalog
Design proposal put together in a catalog

Models

Plastic



3D models
Printed models made in plastic printer

Cardboard



Villa 1
Cardboard model, original size 1:50



Villa 1
Cardboard model, original size 1:50



Villa 1
Cardboard model, original size 1:50



Villa 1
Cardboard model, original size 1:50

Design studies

Volume

Design Study 1

Volume

What

In this study three different input objects was transformed with the built-in commands from the transform ribbon in rhino. The selected objects where Tempietto, Villa Savoy and a villa from Myresjöhus, a catalog-house manufacturer.

Why

The experiment is investigating how a familiar object can be transformed with these different tools and examines the operations ability to create interesting and unexpected outcomes. The three input object was selected by their different properties.

How

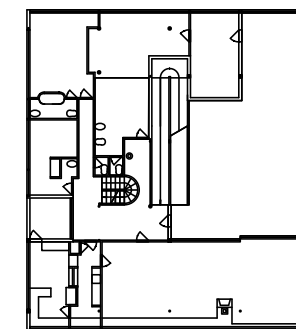
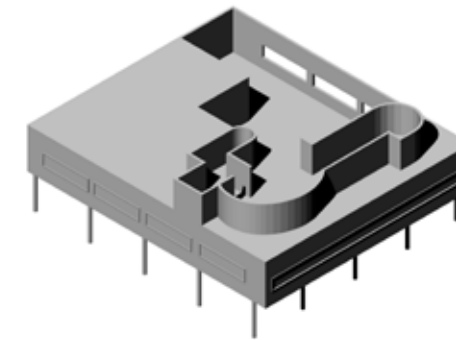
By using the commands *Scale 1D*, *Twist*, *Bend*, *Taper*, *Stretch*, *Flow along curve*, *Shear* from the transform- menu in Rhino one 2D plan and one 3D model of the same object was transformed to create new iterations of the original object.

Conclusion

The study generated both interesting and unexpected outcomes. Some of the commands generated more successful objects then others. It was possible to see similarities between the objects transformed with the same command. None of the command was totally automated, there was a manual involvement in almost all operations. Fore example in the Twist command, the base and reference points had to be selected manually and the result was depending on the manually selected points.

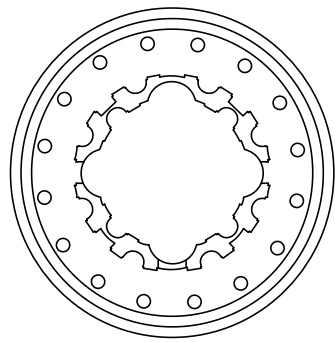
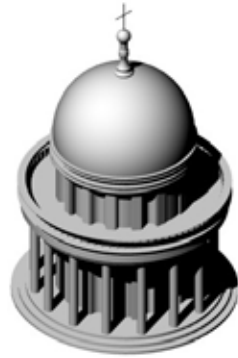
One of the operations: Flow along curve, was harder to predict since it behaved in very unexpected ways. The base and target was manually selected on the curves and the outcome varied between the operations.

Villa Savoye



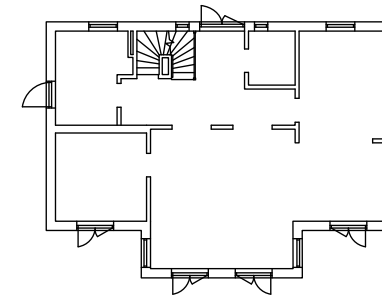
The building is rectangular, with slim building components and profiles, such as the visible supporting pillars. The building is partly elevated from the ground. The second floor has a built-in balcony with rectangular form. The wavy walls on the roof top contrasts with the rest of the strictly perpendicular geometry.

Tempietto



In contrast to Villa Savoye, Tempietto is symmetrical and round. The building looks the same from all sides. Almost everything is round and smooth except the build in quadratic pillar on the exterior wall. The stair and the balcony are located outside the walls surrounding the interior. The interior has only one small room.

Vernacular villa

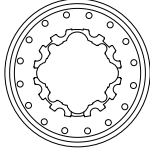
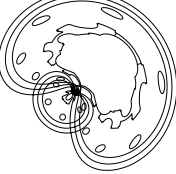
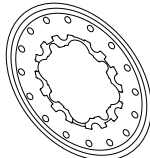
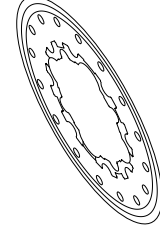
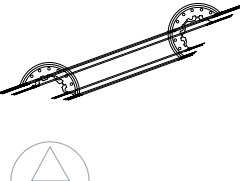
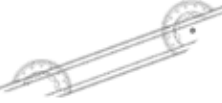
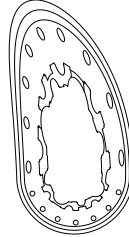


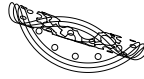
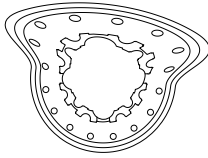
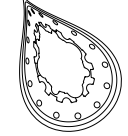
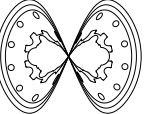
A typical prefabricated villa with a rectangular plan. An extruding part is facing a garden and gives more space to a living room. It has a semi-open floor plan. The right part is a kitchen that connects with a room for dining. This room is linked with a big living room which is the center of the house. To smaller rooms are located on the left side. The stair on one side of the entrance and a small bathroom on the other. The windows are big and has mullions.

	FLOOR PLAN	TOP VIEW	AXO		FLOOR PLAN
NORMAL				SCALE	
SHEAR -20				SHEAR -50	
FLOW ALONG CURVE				FLOW ALONG CURVE 2	
STRETCH 1				STRETCH 2	

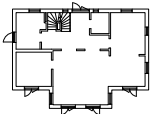
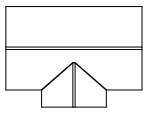
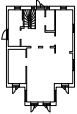
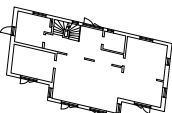
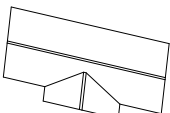
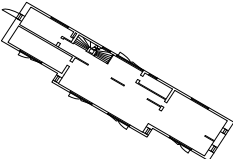
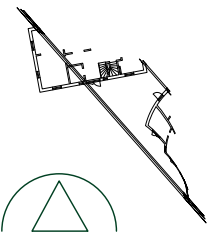
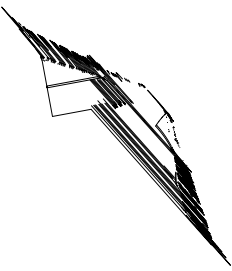
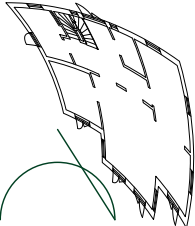
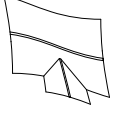
TOP VIEW	AXO		FLOOR PLAN	TOP VIEW	AXO
		BEND			
		TAPER			
		FLOW ALONG CURVE			
		TWIST			

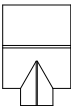
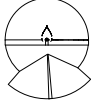
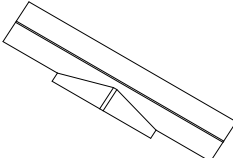
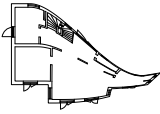
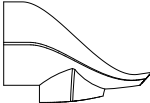
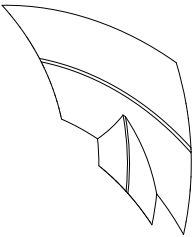
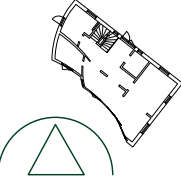
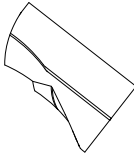
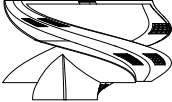
Design study 1
Villa Savoye

	FLOOR PLAN	TOP VIEW	AXO		FLOOR PLAN
NORMAL				BEND	
SHEAR -20				SHEAR -50	
FLOW ALONG CURVE				FLOW ALONG CURVE 2	
STRETCH 1				STRETCH 2	

TOP VIEW	AXO		FLOOR PLAN	TOP VIEW	AXO
		BEND			
		TAPER			
		FLOW ALONG CURVE			
		TWIST			

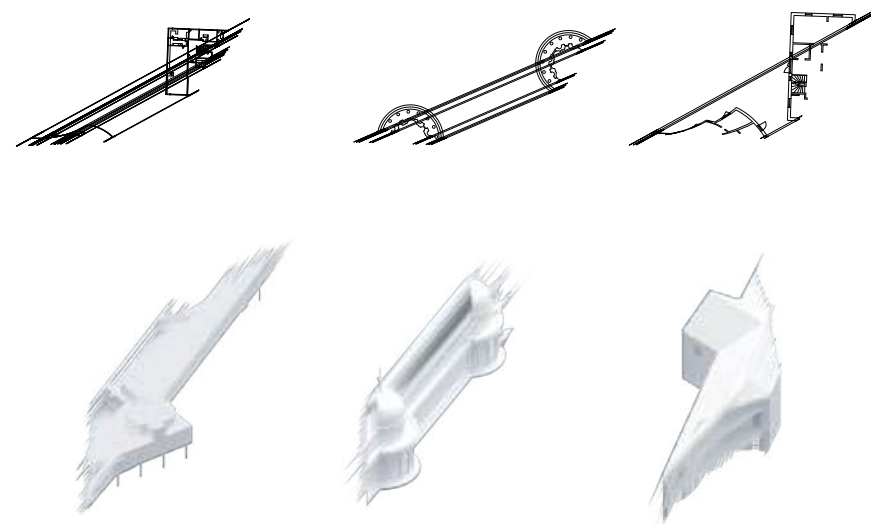
Design study 1
Tempietto

	FLOOR PLAN	TOP VIEW	AXO		FLOOR PLAN
NORMAL				SCALE	
SHEAR -20				SHEAR -50	
FLOW ALONG CURVE				FLOW ALONG CURVE 2	
STRETCH 1				STRETCH 2	

TOP VIEW	AXO		FLOOR PLAN	TOP VIEW	AXO
		BEND			
		TAPER			
		FLOW ALONG CURVE			
		TWIST			

Design study 1
Myresjöhus

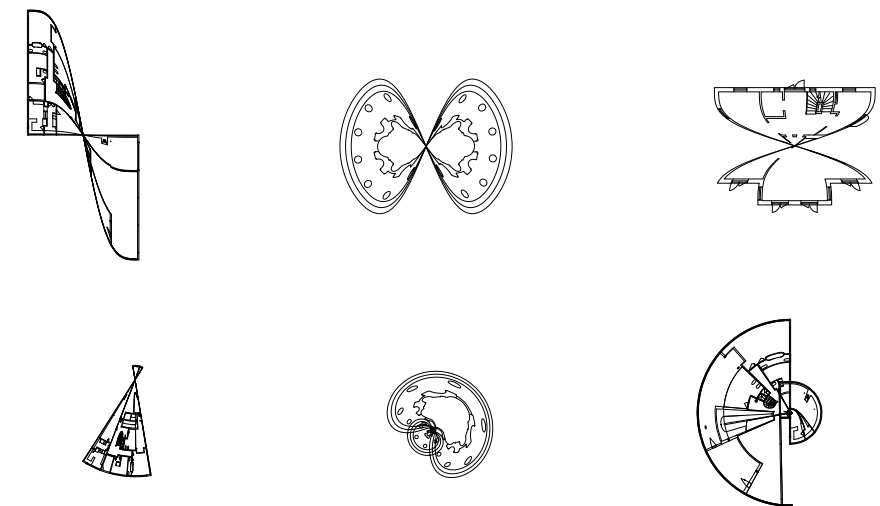
Series



Series 1

This series consists of objects that are similar in all three steps. All three designs in this study derive from the three different buildings in this study. The plan, the top view and the 3D view has similarities between each other. If a series is defined by geometrical similarities as Carpo, Lynn, Kipnis, Deleuze and Cache claims, this is without hesitation a series.

Both by the human ability to recognize them, defined by Mario Carpo as *The mechanical universe* but also by a mathematical definition, *The digital universe*. The transformation command that the original models has been exposed to is the same which made the outcome similar.



Series 2

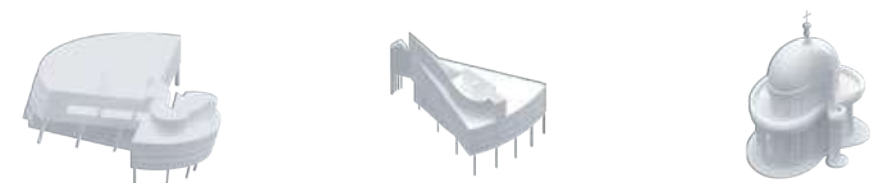
The objects in this series has similarities in their plans. They derive from different buildings with exception from nr 4 and nr 6 which both derives from *Villa Savoye*. The first three objects has been transformed with the *Twist* command. They have, as the name reviles been twisted at their midpoint. Nr 4 has been exposed to *Flow along curve* and nr 5 and 6 with *Bend*.

These six objects would might not have been defined as a series if referring to *The digital universe* since different commands, different algorithms, has been used. Then the series would have looked different. But by the human eye they have similarities. The are all twisted in some way, the first three in half and the others in less symmetrical ways. This series could also be divided as above mentioned into two different series.



Series 3

These objects are the 3D versions of the first three objects in series three. They look visually alike and are quite far from their original even though they can be traced back. They have all been exposed to the twist command which had very different impact on the 2D objects and the 3D objects. The recognition between the new objects and the originals are low. But within the series it's higher.



Series 4

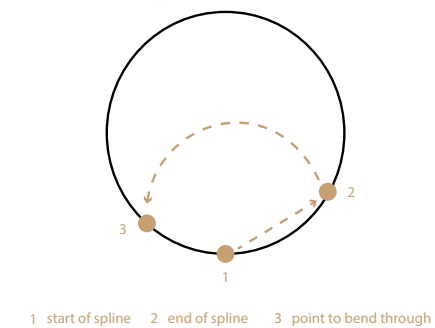
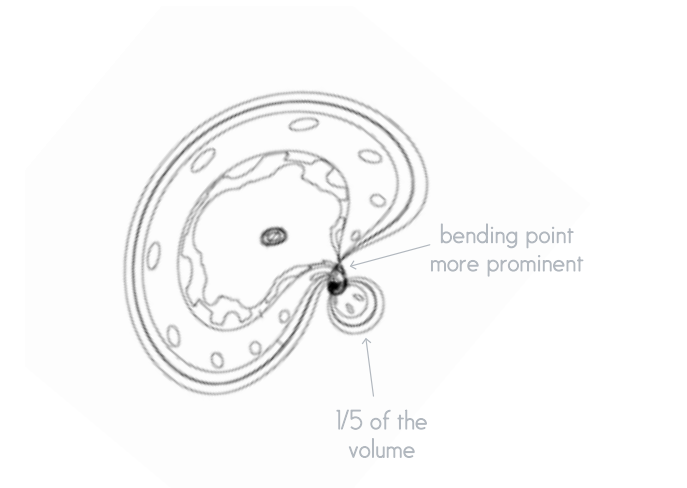
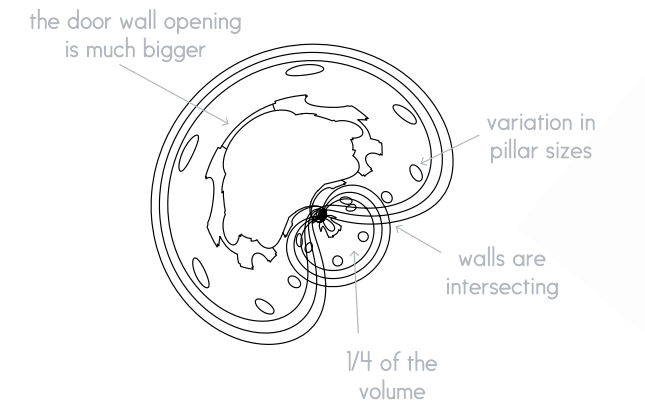
This objects originates from the three last objects from series two. If the objects in series two would be defined as Caches definition *Subjectiles* (variable objects from a surface) the three objects in this series would be the *Objectile* (variable objects from a volume) version of them.

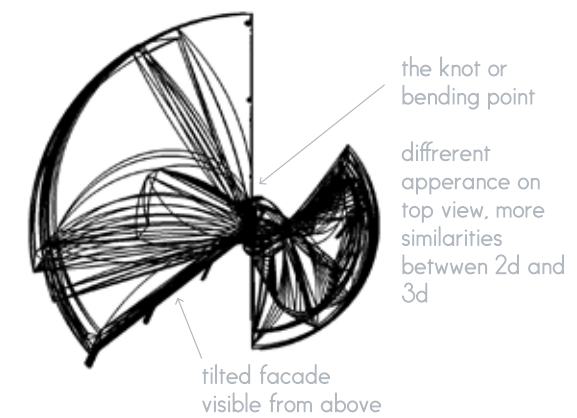
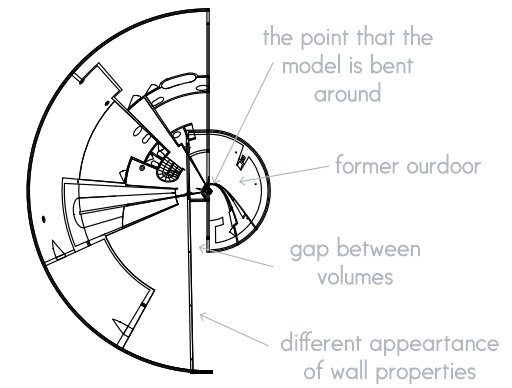
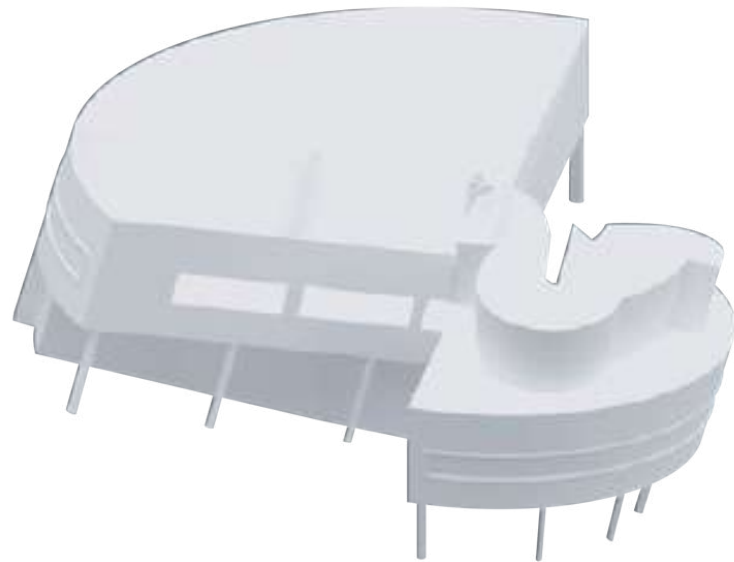


Tempietto Bend

The building kept its round shape but became unsymmetrical. The colonnade has lost its passage function. The interior room is no longer symmetrical and has a direction inwards, the opening is much bigger. The volume is divided in two volumes. The smaller volume is about 1/4 of the original size. The pillars that before was identical has now different sizes.

A part of the interior is placed in the small volume. The small volume creates a balcony, this is visible in the 3D view. The size of the balcony-volume is smaller in the 3D volume and in the top view. Looks like a pulpit. The walls doesn't seem to intersect as they do in the floor plan. This is a bit strange. The point where the geometry is bending around is visible as a spiral.

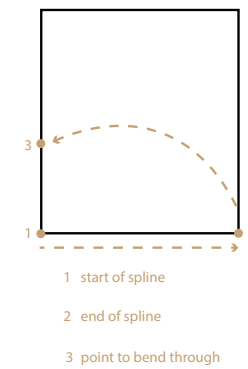


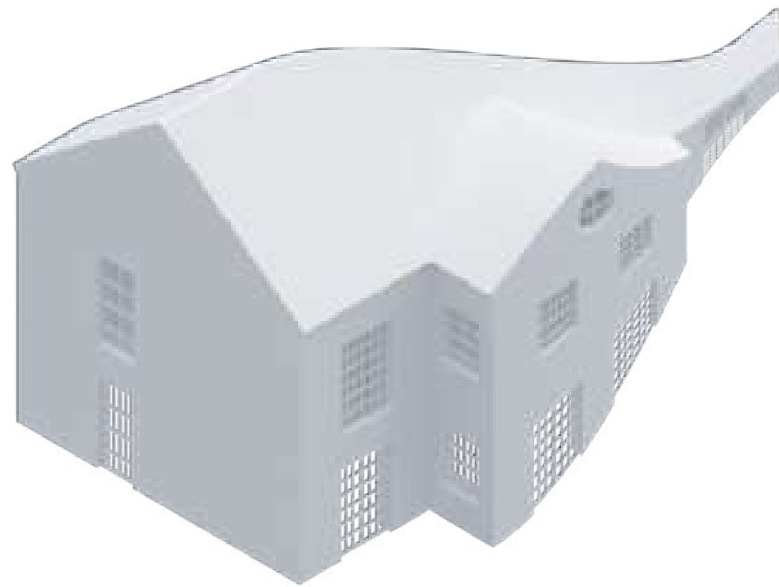


Villa Savoye Bend

The way the bend-command was used made the building look twisted. It has similarities with the models deformed with the twist command. The top view looks like a plastic bag that is tied on its third. One of the facade is tilted inwards which makes it visible from above together with the pillars that before was underneath the building.

By looking at the model it seems like the small volume is the only part still standing on the ground. The big volume is elevated and leaning in the direction towards the small volume. The curving walls at the roof is now gathered on top of the small volume. In the point of "the knot" walls are creating a spiral. The glass in the window seems to have disappeared on one of the facades which makes them more prominent.

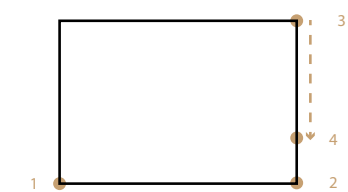
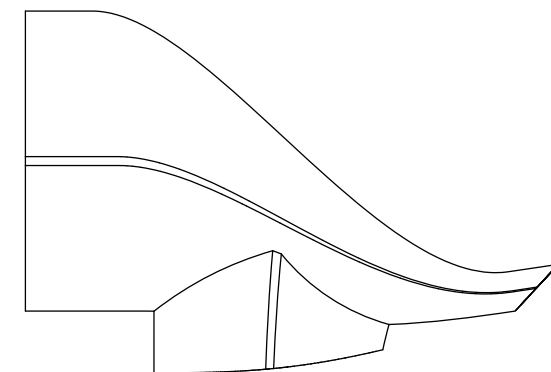
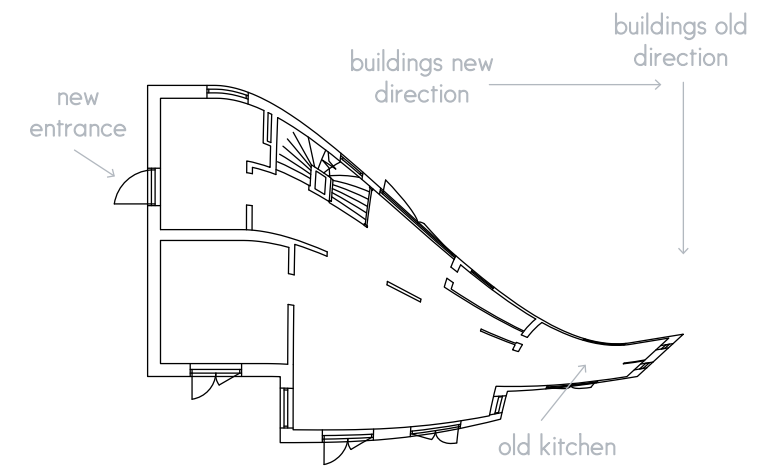




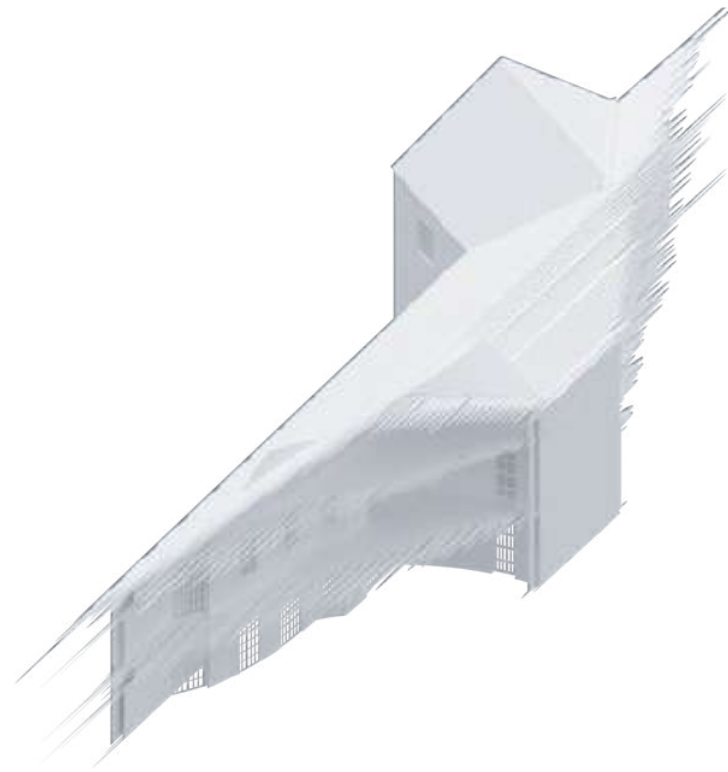
Myresjöhus Taper

The new form has a wavy character and has a clear direction towards the left side of the plan. The curve is not centralized and has a direction towards the "front size". The door in what was the former bathroom has a bigger importance in the new building. The old entrance is might not existing any more.

The buildings has kept its proportions on one short side. On the right hand side the gable is elevated. The roof has now a wavy, curved form that meets the elevated side.



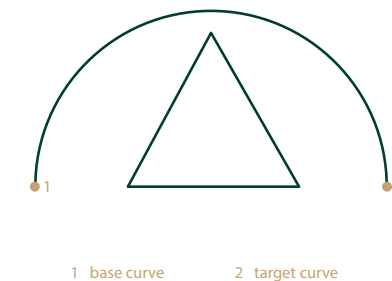
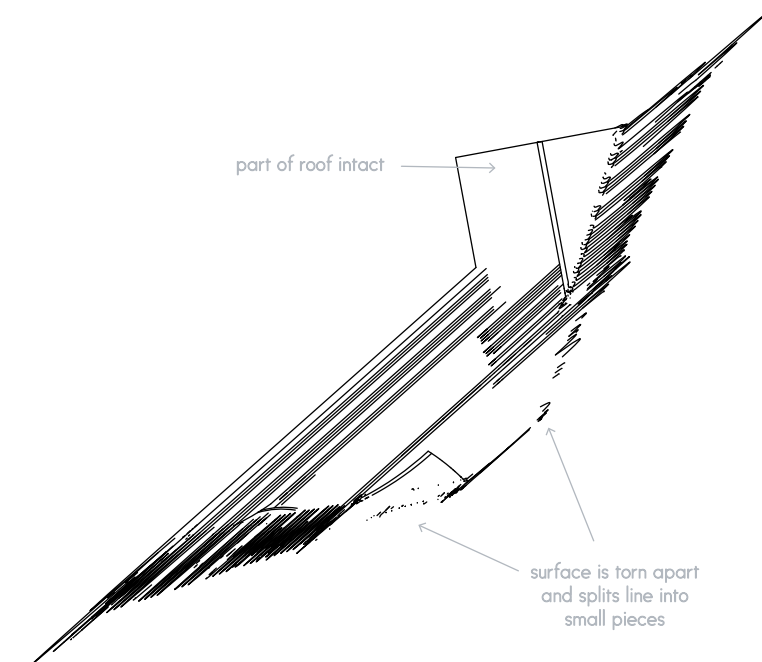
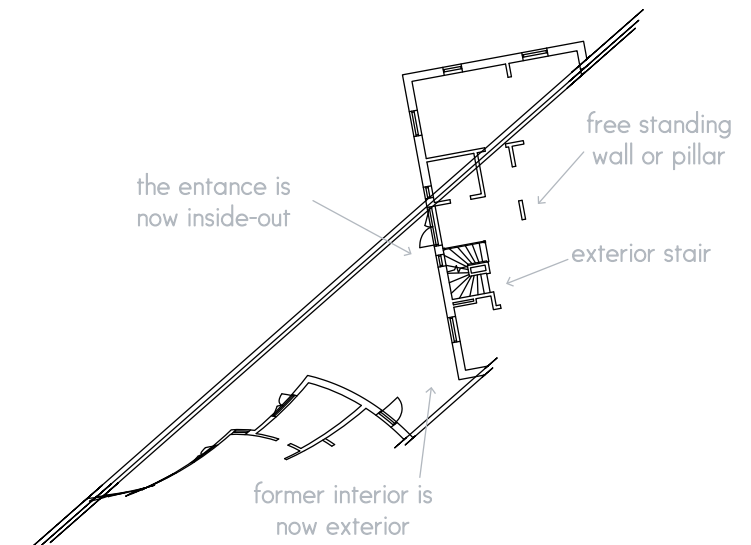
- | | |
|------------------|------------------|
| 1 start of taper | 3 start distance |
| 2 end of taper | 4 end distance |

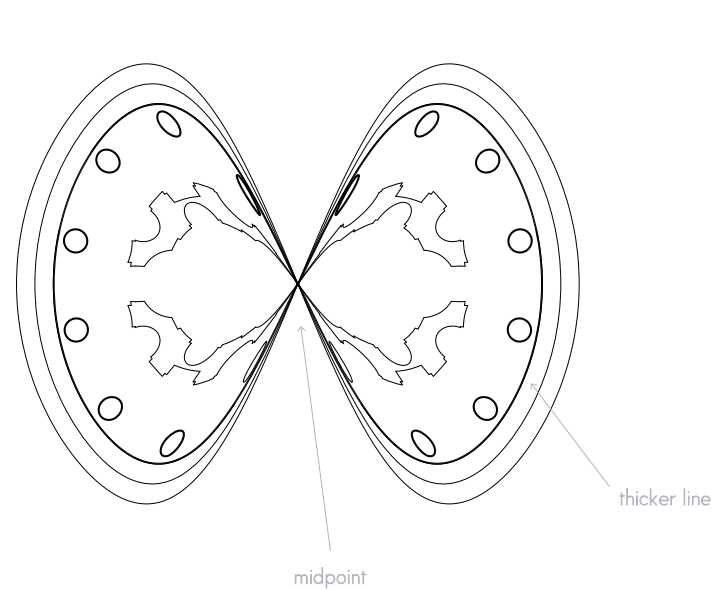


Myresjöhus Flow along curve

The geometry has been torn apart and turned inside-out. What earlier was main part of the interior is now outdoors. A long straight wall is going diagonal though the volume. The old walls are attaching to the long wall and creates new spaces. Outside the entrance one wall stands by itself.

What was before the kitchen is now a room without any doors. The same with half of the old bathroom. The geometry here is fascinating, how it's been torn apart and fragmented. Compared to the floor plan, one wall is missing. The top view is not revealing any curved forms as the 2D- and 3D drawing.



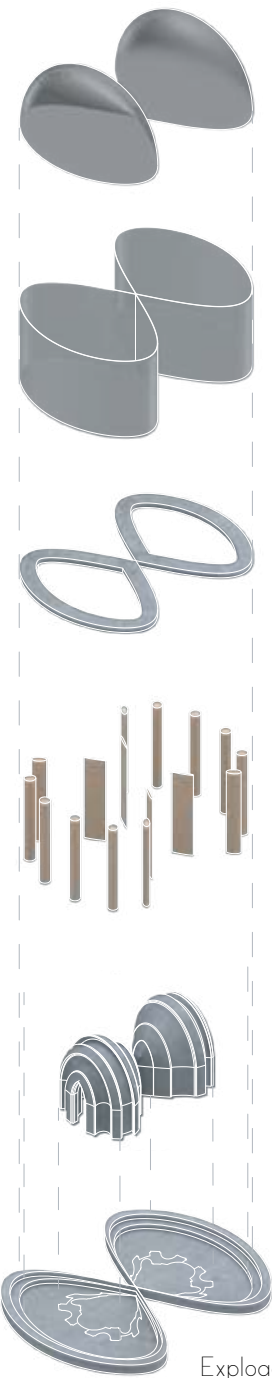


Output floor plan

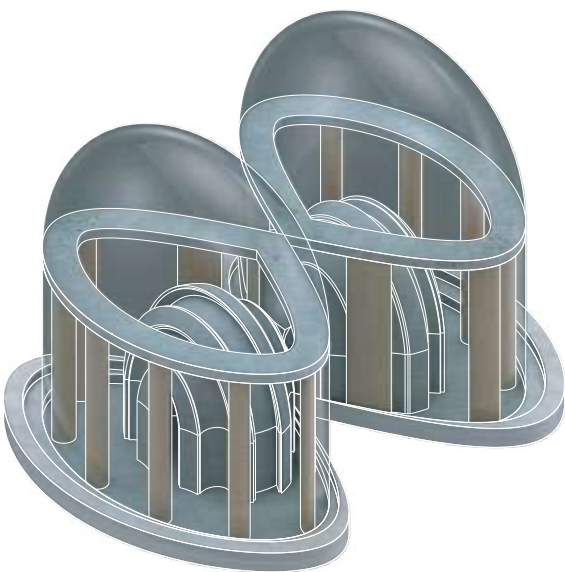
Tempietto

-interpretation of twist

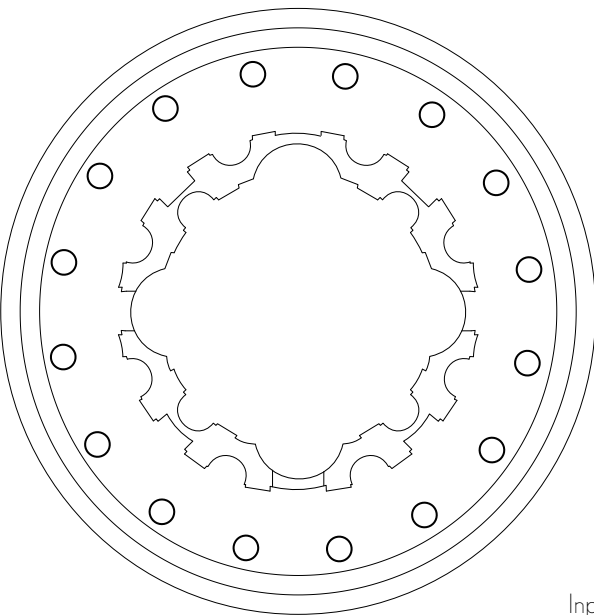
The result of the interpretation of the twist command is a small building or a pavilion. The new version became as symmetrical as the original, with one volume that is mirrored at its edge. The new building was meant to be represented as a pair of two but could also be seen as one building consisting of only one volume. To form the new building the former stair was inverted, nothing in the floor plan reveals the direction of the stair. The inner concrete volume was created based on the old walls where they were swept between the two sides. The pillars are carrying a concrete beam that could be used as a balcony. The whole volume are enclosed by a glass cylinder. The curve in z-direction that formed the top part of the glass cylinder is taken from the floor plan.



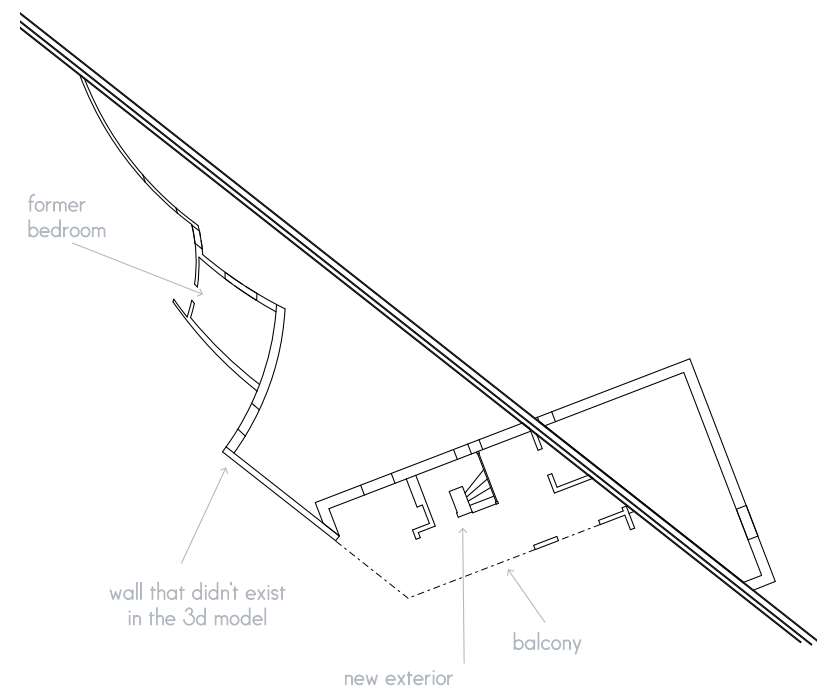
Exploded axonometry



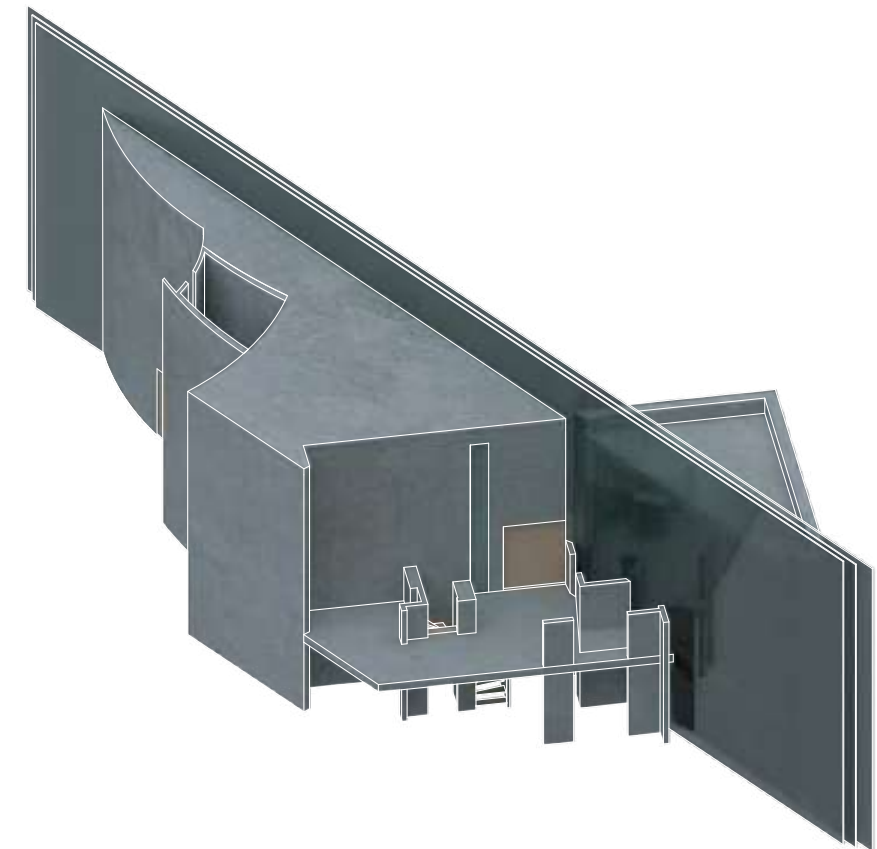
Axonometry



Input floor plan



Output floor plan 1:200



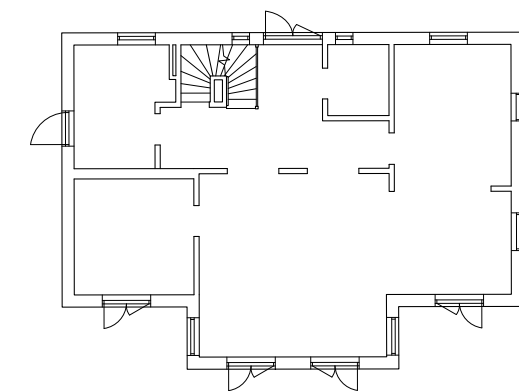
Axonometry

Myresjöhus

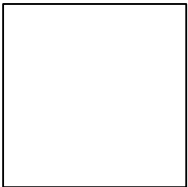
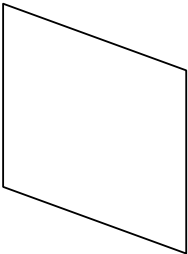
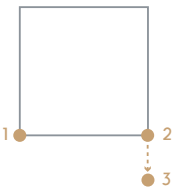
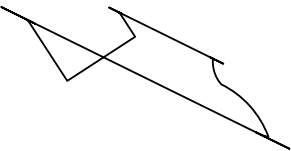
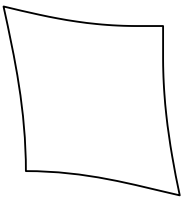
-interpretation of flow along curve

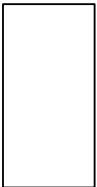
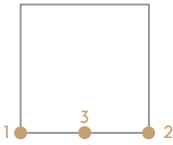
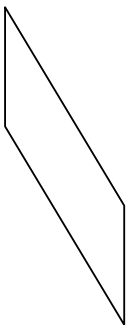
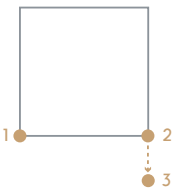
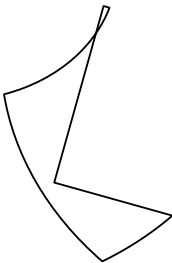
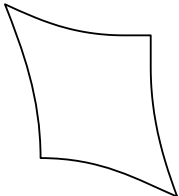
The result of the interpretation of the flow along curve 2D plan became different from the it's original 3D version. The 2D plan has a wall that doesn't exist in the 3D version. With this wall the volume becomes more closed and has more resemblance to a villa.

The three long lines on the floor plan is represented as three thick glass panels that runs through the building. The panels divides what was earlier one volume in two volumes. This volumes are linked together with a balcony, held by the former interior walls and reached by the internal stair. The old bedroom facing the outside and is in the new building an exterior room.



Input floor plan 1:200

	FLOOR PLAN	AXO	EXPLANATION
NORMAL			Default volume
SHEAR -20			 Two corners of the object are dragd diagonally while the other two cornes stays in place 1 Origin point 2 Refrence point 3 Shear angle
FLOW ALONG CURVE 1			 The original object is transformed from two curves. The outcome is different depending on the shape of base- and target curve and where on the curve the selection is made. 1 Base curve, select near one end 2 Target curve, select near matching end
STRETCH 1			 Corner point 1 stays in place while the geometry are contracted towards point 1 from a chosen point. In this case point 2. The amount of stretch varies as close as point 2 gets to point 1. 1 Start of stretch axis 2 End of stretch axis 3 Stretch factor or point to stretch to

	FLOOR PLAN	AXO	EXPLANATION
SCALE			 Obejct is scaled down in one direction where the right corner (point 2) is moved closer to the reference point (point 1). 1 Origin point 2 Scale factor of first reference point 3 Second reference point
SHEAR -50			 Two corners of the object are dragd diagonally while the other two cornes stays in place 1 Origin point 2 Refrence point 3 Shear angle
FLOW ALONG CURVE 2			 The original object is transformed from two curves. The outcome is different depending on the shape of base- and target curve and where on the curve the selection is made. 1 Base curve, select near one end 2 Target curve, select near matching end
STRETCH 2			 Corner point 1 stays in place while the geometry are contracted towards point 1 from a chosen point. In this case point 2. The amount of stretch varies as close as point 2 gets to point 1. 1 Start of stretch axis 2 End of stretch axis 3 Stretch factor or point to stretch to

	FLOOR PLAN	AXO	EXPLANATION
BEND			1 Start of spine 2 End of spine 3 Point to bend through The object is bent around a chosen point, in this case point 3. Depending on where this point is located the outcome varies.
TAPER			1 Start of taper axis 2 End of taper axis 3 Start distance 4 End distance Corner points on left side stays in place (point 1,3). Right side right side shrinks down propotionally to chosen end distance (point 4). A curve is created between point 3 and 4.
FLOW ALONG CURVE 3			1 Base curve, select near one end 2 Target curve, select near matching end The original object is transformed from two curves. The outcome is different depending on the shape of base- and target curve and where on the curve the selection is made.
TWIST			1 Start of twist axis 2 End of twist axis 3 Angle or first reference point 4 Second reference point The side between point 1 and 2 stays in place while point 3 is moved in the opposite direction of point 2. The outcome would be different if an angle was used isted of a point.

Transformation commands
Explanation of commands

Design studies

Object

Design Study 2

Object

What

During previous study one command, *Flow along curve*, stood out in relation to the others. It had a higher level of complexity and generated very different outcomes depending on how the command was used.

Why

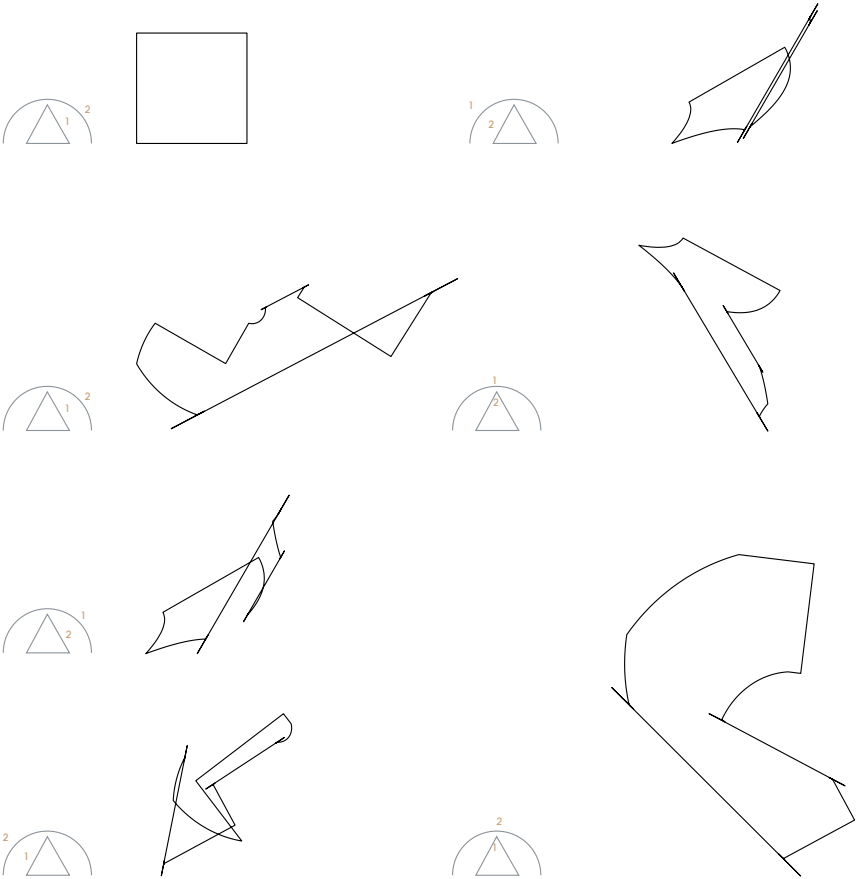
This study aims to clarify and develop a deeper understanding of how the command works. A better understanding of it could lead to a better use of the command.

How

The input object in this study is a column from Tempietto that will be transformed with *Flow along curve* and analyzed in order to reach deeper understanding of the command.

Conclusion

During this study it became clear what's causing this new forms and also how the command is supposed to be used. Another discovery was the importance of where on the curve the selection were made. It was also shown that the output became different depending on the input objects position in relation to the base and target curves. The matter of checking the rigid box seem to be of high importance since it's only the position of the object that changing when it's rigid. The transformation is only happening when the rigid box isn't checked.

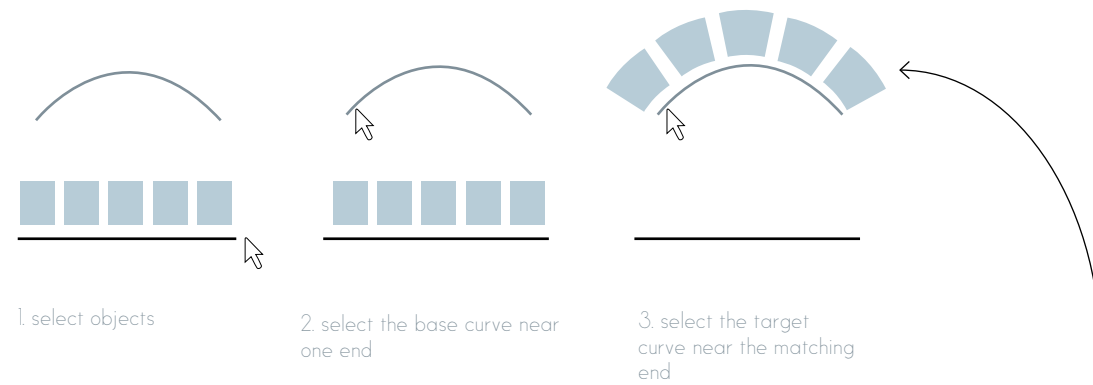


Flow along curve

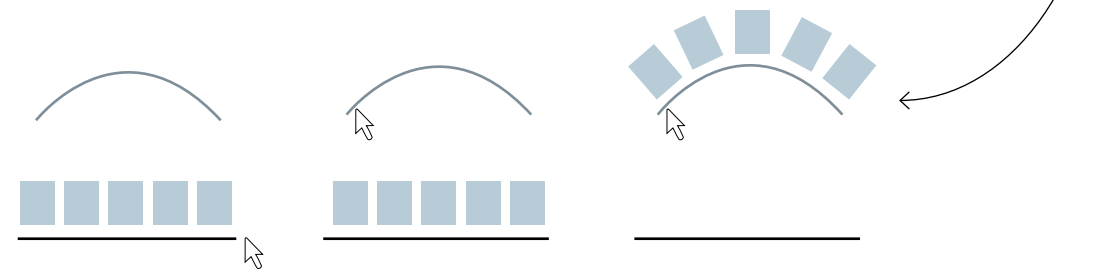
Flow along curve was the command that was hardest to predict. The command uses two curves, one base- and one target curve. From only two curves six new geometries were generated. The outcomes turned out different but all of them look like they have been torn apart.

Since the input volume is a simple square it's harder to read if some of the parts are turned inside out as in earlier studies. A few of them has in common that one long line is parting the former volume in two sides, as in the geometry used for the interpretation made earlier.

☐ Rigid



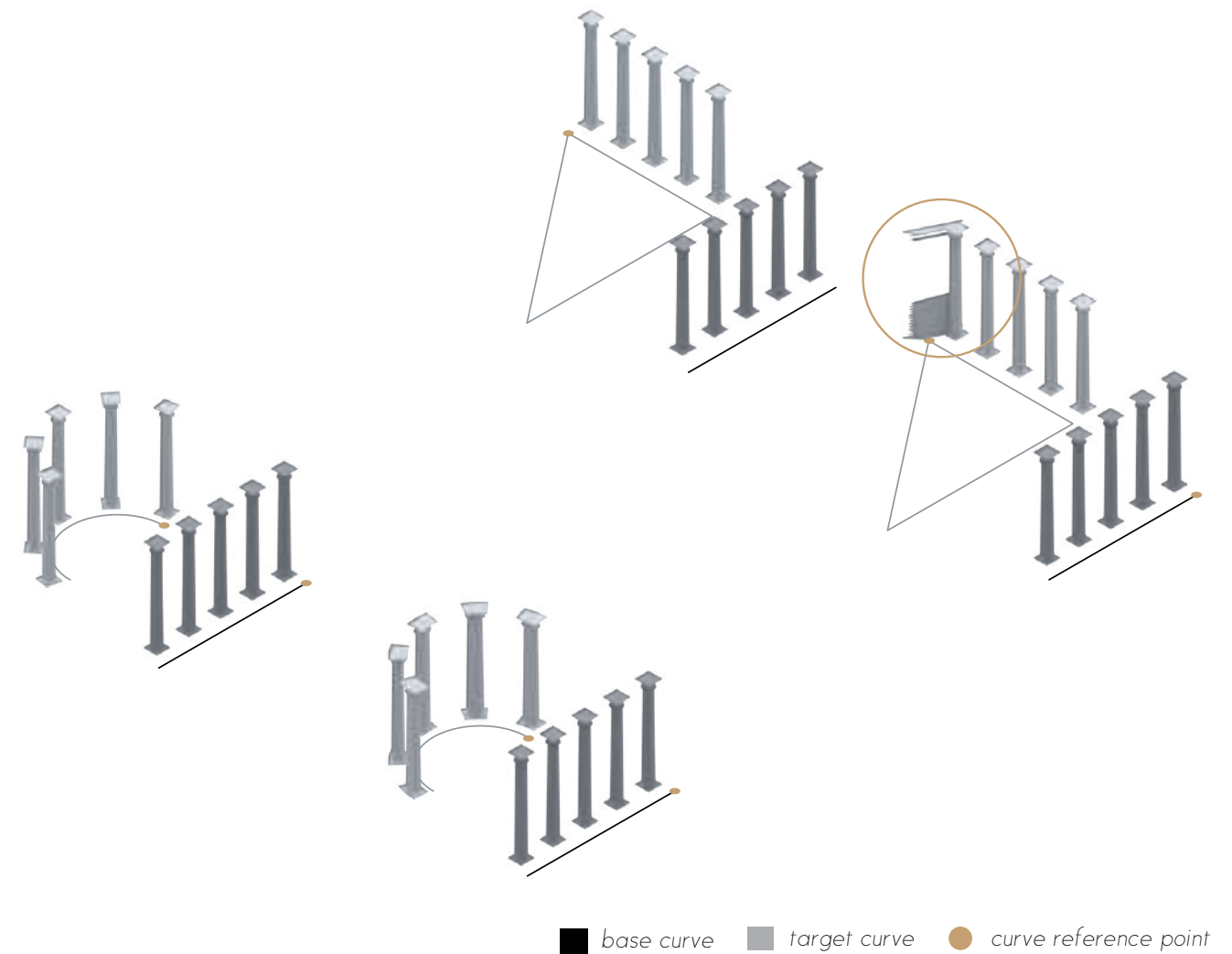
☒ Rigid



Rigid and non rigid

The way *Flow along curve* is supposed to be used is different from how it has been used in previous design studies. This explains the unexpected and unpredictable outcomes from earlier experiments. Above is how Macneel forum describes how the command works. When the rigid-box is checked the objects keeps its original forms, when

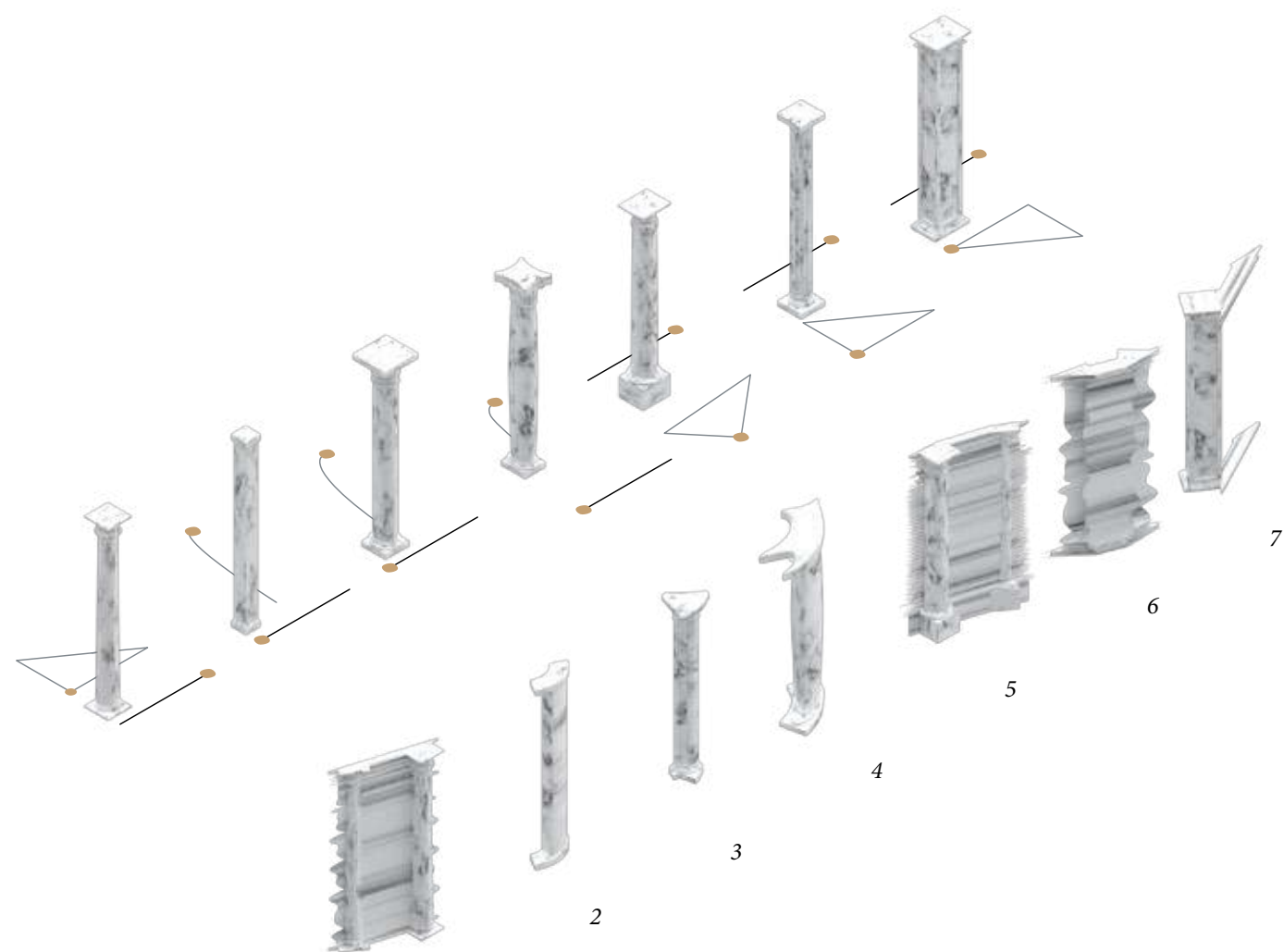
not, they adapt to geometry of the target curve. The actual use of the command is to arrange objects along a selected curve. When the curves are too different from each other and the rigid box is unchecked the object takes form from the two curves and tries to keep the input object together which result in this forms above.



Flow along curve
Rigid, not rigid, with same input objects

Column study

Rigid objects placed on line and curve above. Non rigid objects below. White object on black curve are reference objects on reference curve, gray objects on gray target curve are outcome of the command. Glitch detected and marked with orange circle.



1

2

3

4

5

6

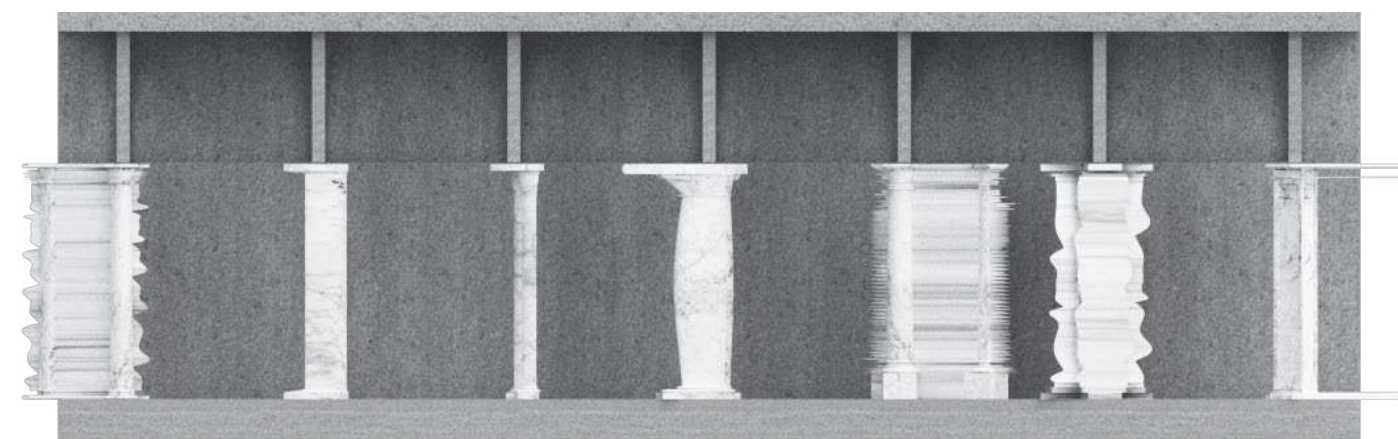
7

Column series

Upper row, input objects with base and target curves, below output objects.

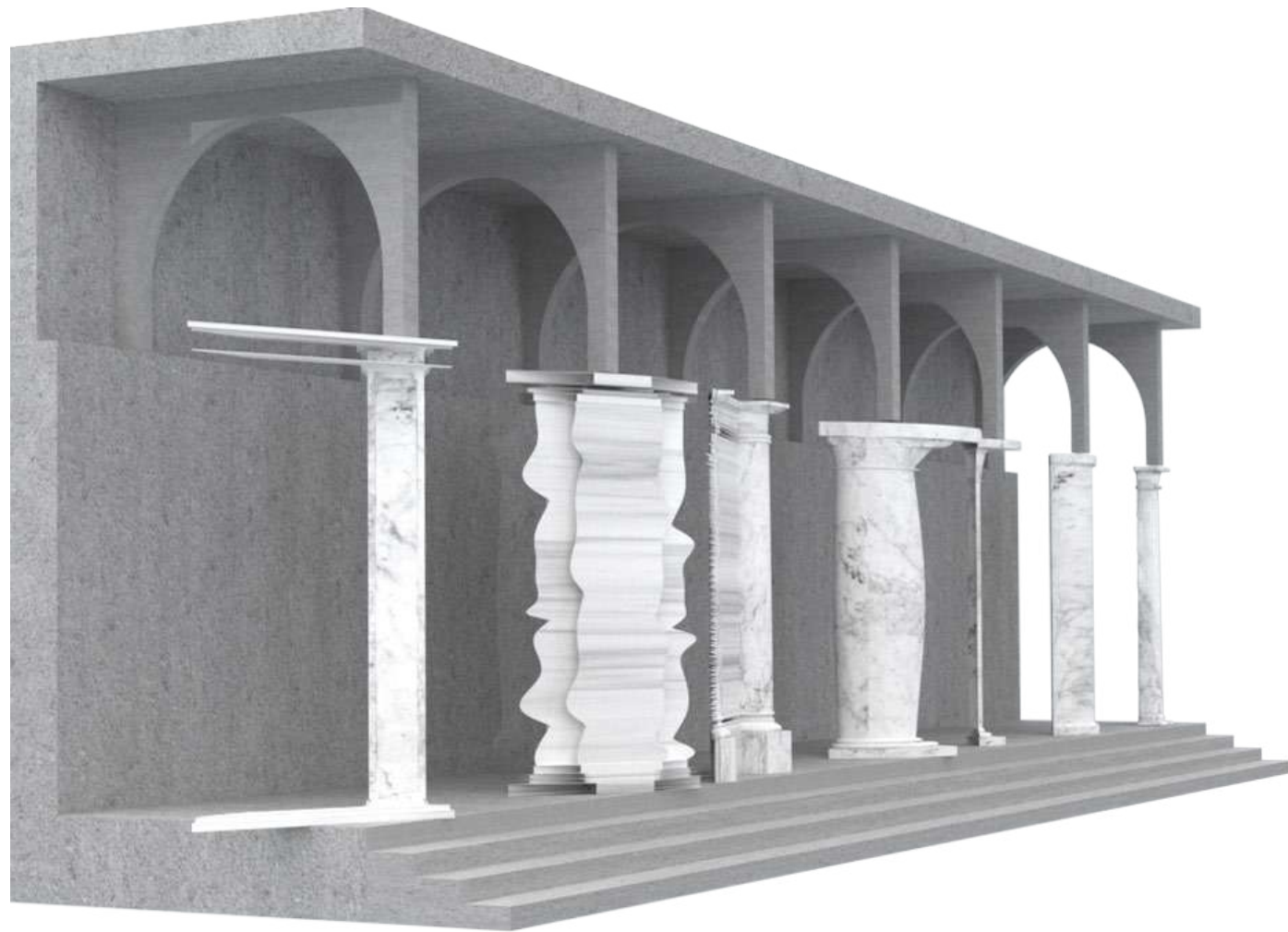
To reach a broader variety between the objects, the flow along curve command was used on different columns. The new columns were found by uploading a render of the original column on Google image search. The first 6 hits became the new input objects. By looking at the transformation of the columns to the right some conclusions can be

made. When the target curve is an arch the result is a round and soft shape. See column 2, 3 and 4. When a rectangular or triangular shape is used, the outcome has this stretched appearance as it's been torn apart, see column 1, 5, 6 and 7.



Arcade of columns

Transformed with Flow along curve command, front view



Arcade of columns
Perspective



Arcade of columns
Perspective



Villa Savoye
Living room with column nr. 1



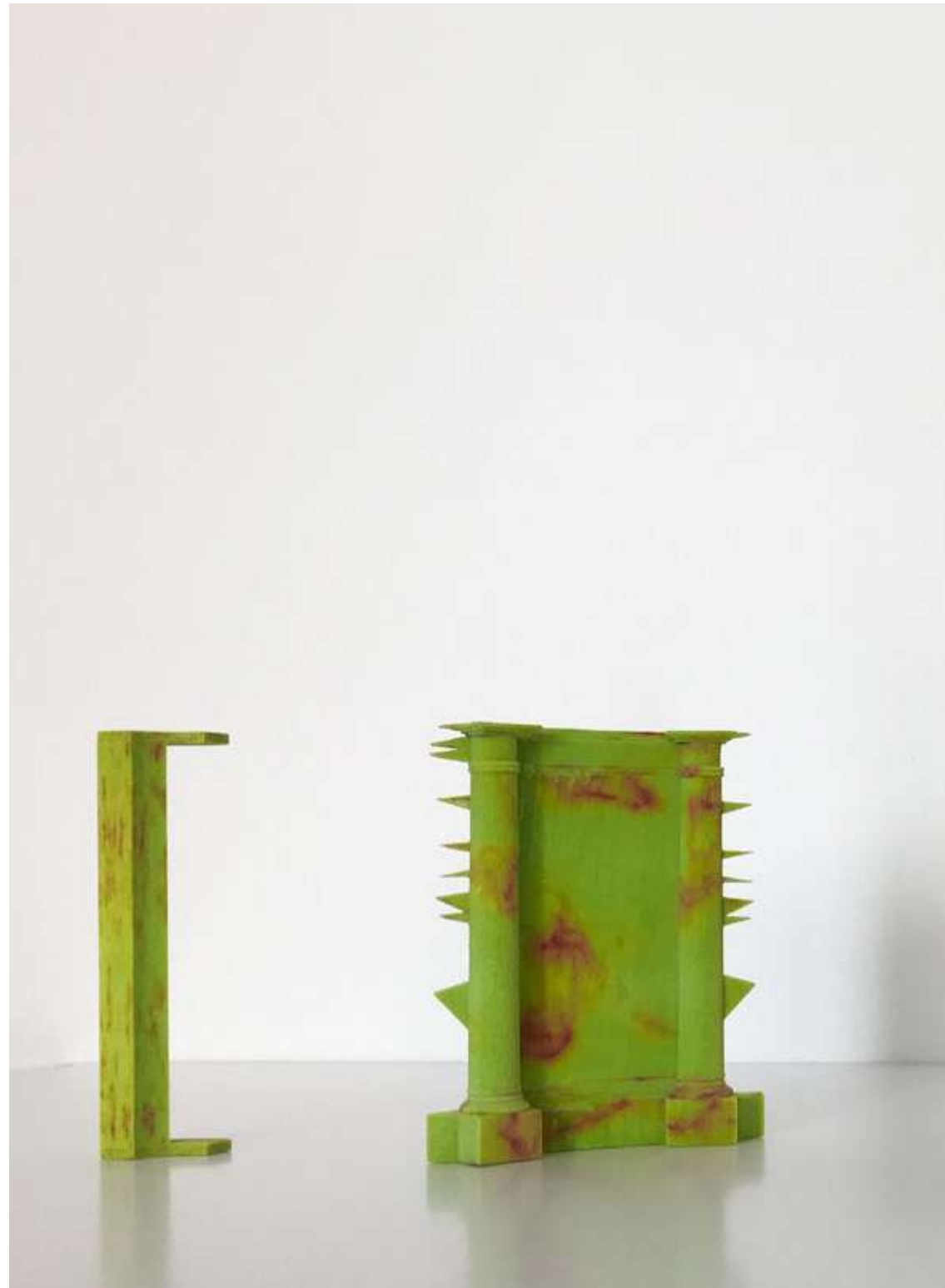
Myresjöhus
Exterior with column nr. 4



Tempietto
Exterior with column nr. 7



3D printed columns
Four of the columns printed in the gypsum printer



3D printed columns
Four of the columns printed in the gypsum printer

Design studies

Room

Design Study 3

Room

What

In the previous study *Flow along curve* was applied on a single element, the column. In this study the command is applied on an assembly on elements, a room. The room is the living room in *Villa Savoye* consists of many elements such as columns, slabs, walls, windows and fixtures.

Why

This study focus on to see how the command works if applied to a room and to examine the recognition between the input and output depending on the different amount of transformation/ shape of target and base curves.

How

The living room in *Villa Savoye* has been modeled and rendered based on a photo of the interior. The model is transformed by different sets of curves which will change the room. Then the room is rendered from the same spot as in the first rendering.

Conclusion

Flow along curve works very well as spacial experiment as a transformation of a volume or an object. The transformation created very interesting rooms based on the input. In most cases the room only change it's shape but in some of the operations a new room was added. I think the input is visible in all experiments. The characteristic horizontal windows can be recognized though out all the experiments. In one operation the interior columns disappeared which made it harder to recognize the room.



Villa Savoye
Living room

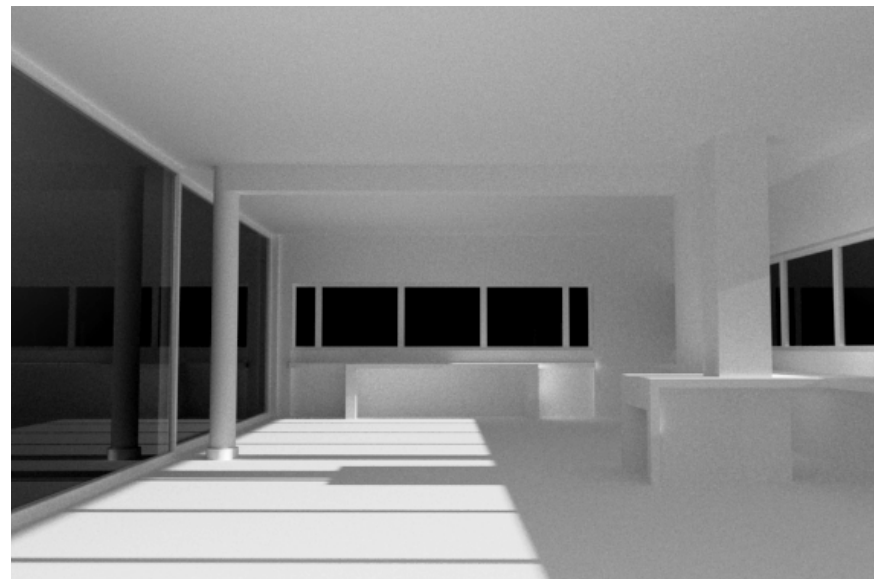
Villa Savoye, spacial experiment

In the previous study *Flow along curve* was applied on a single element, a column. In this study the command is applied on an assembly on elements, a room. The room is the living room in *Villa Savoye* and consists of many elements such as columns, slabs, walls, windows and fixtures.

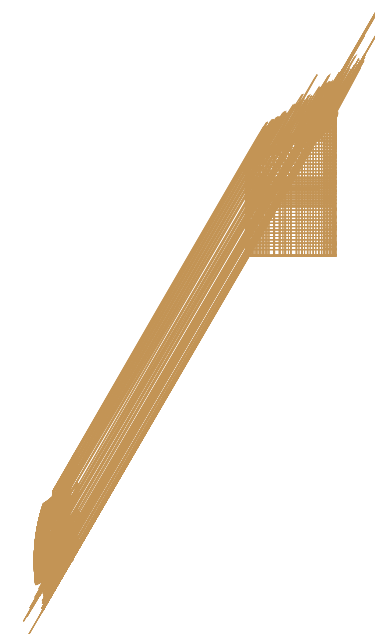
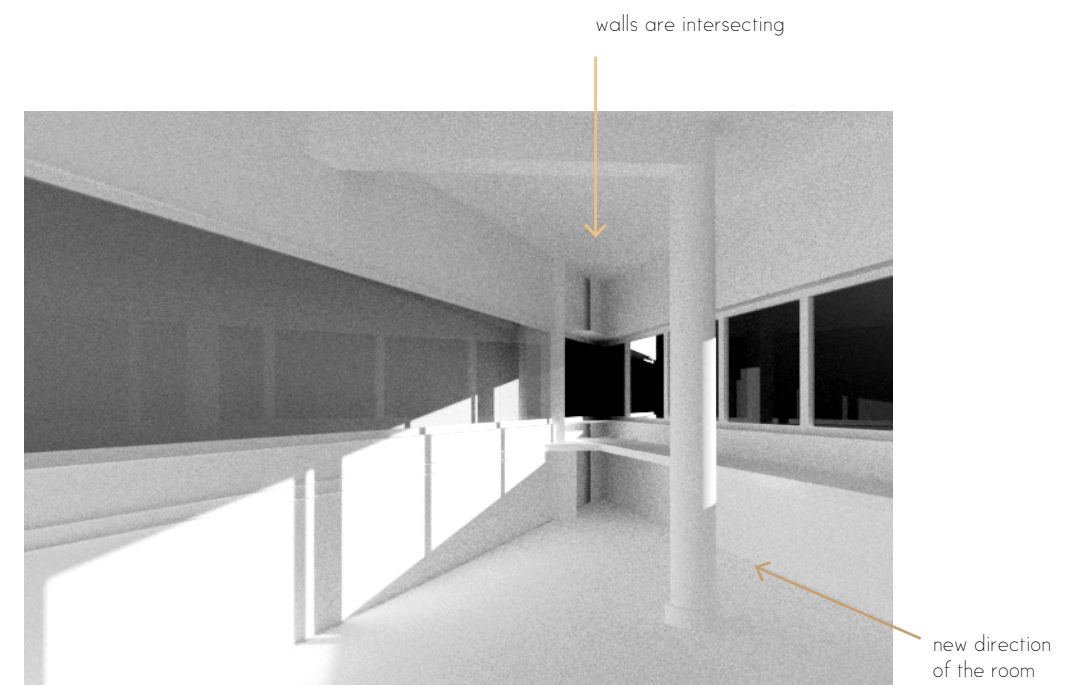
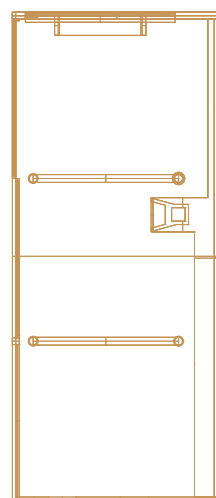
One general comment of the flow along curve command is that it only transforms the object in the direction of y and x and not z.

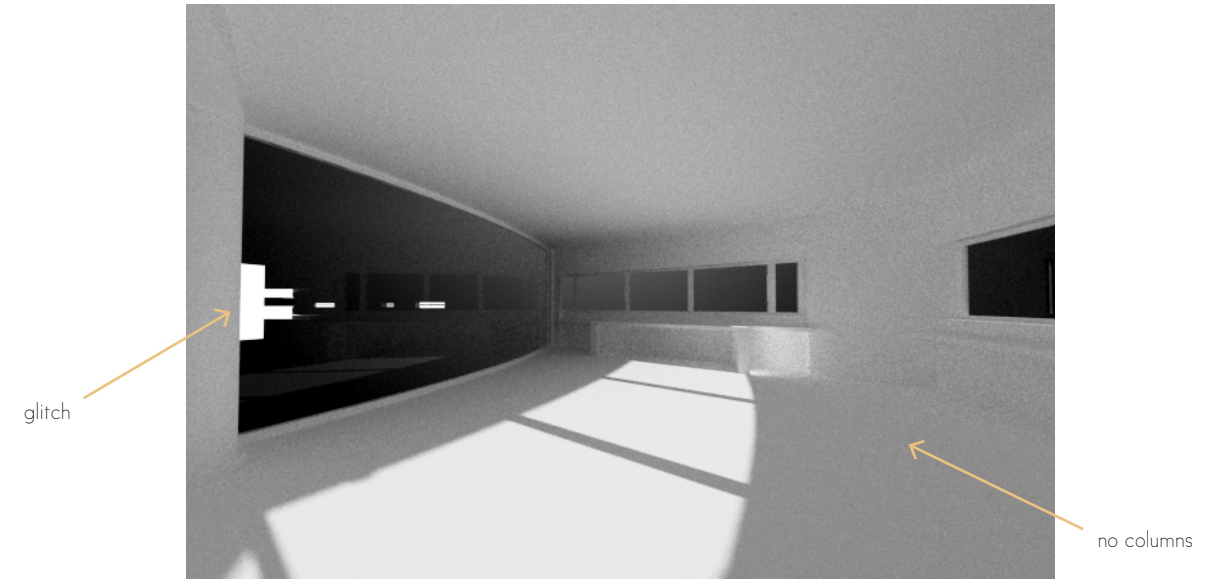
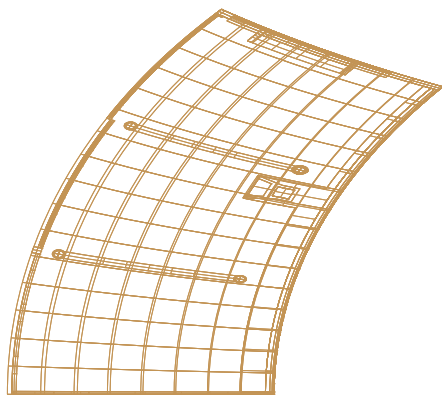
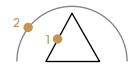
That's because the base and target curves has so far only been in y- and x-axis. The distortion would probably have been very different if a curve in z-axis was used.

In all of the 6 distortions the original room can be recognized in most cases by the shape of the room but also by the significant elements inside. In one of the rooms the columns are not visible anymore which makes the recognition harder.



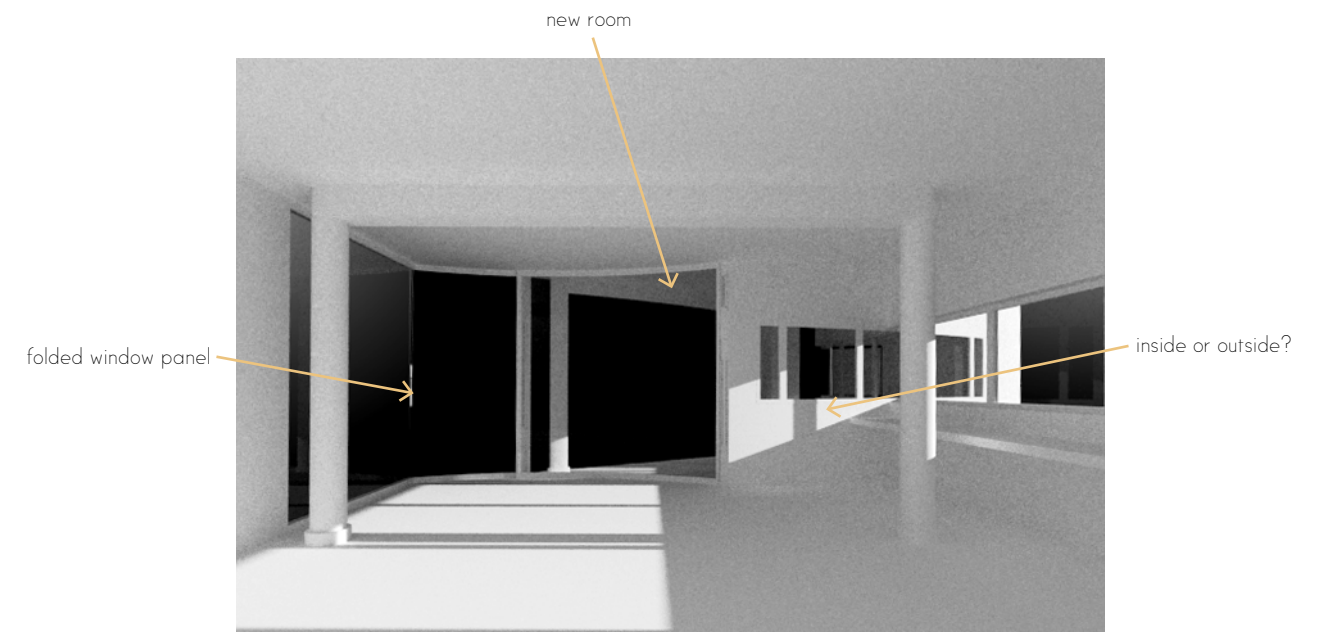
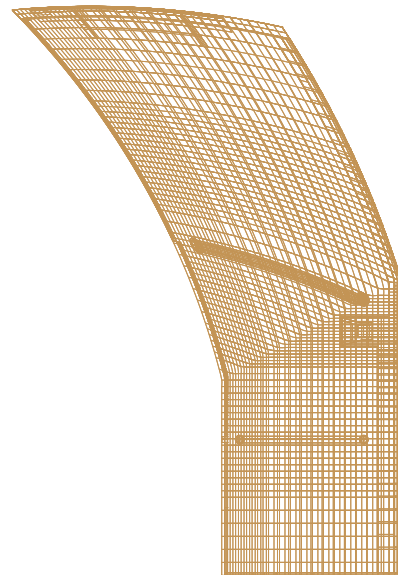
Input object



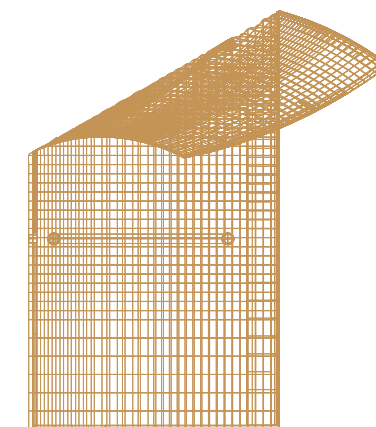




the room is much longer
the left corner is not visible



the room is folded and formes a new
room in the back of the living room



Seminars

Mid term seminar

Reflections

I was in general very satisfied with the mid term presentation and the feed back I received. I got some new references that's been inspiring and feedback on how to continue working. One thing that was mentioned is that I can leave *Flow along curve* as a description of my method and focus more on what the command does. The input in the design process was also mentioned as one important aspect of the upcoming work. Right now I see two alternatives concerning the input and it's relationship to series and families. One could be to use the same input which will tie the outcome building together.

Another alternative could be to use a transformation-method which can create visual similar outcomes. It was brought up that I'm using a collage-like method and mixing different object and methods at the same time. This is probably something I will continue doing during the design project as well. It was also mentioned that the collage like working method could be strengthened by using a collage technique to visualize my project.

A few new references was brought up, *projective geometries* and *generative drawings* with examples such as Zaha Hadid's paintings and the architect Preston Scott Cohen.

Finally the question on how to approach a building design with the methods I've been developing was discussed. I presented them as three different methods but during the discussion it was made clear that they could all be added in the project on three different levels in three different scales.

Massing, volume and detail. Massing would be used on the outer building geometry. Volume would be the interior rooms and detail would be interior details such as columns, doors and railings etc.

The used working method is good in relation to the serial idea because it's fast. Now the project need to be develop according to a program. Finally it was pointed out that it would be good to choose a building typology that could be serial.

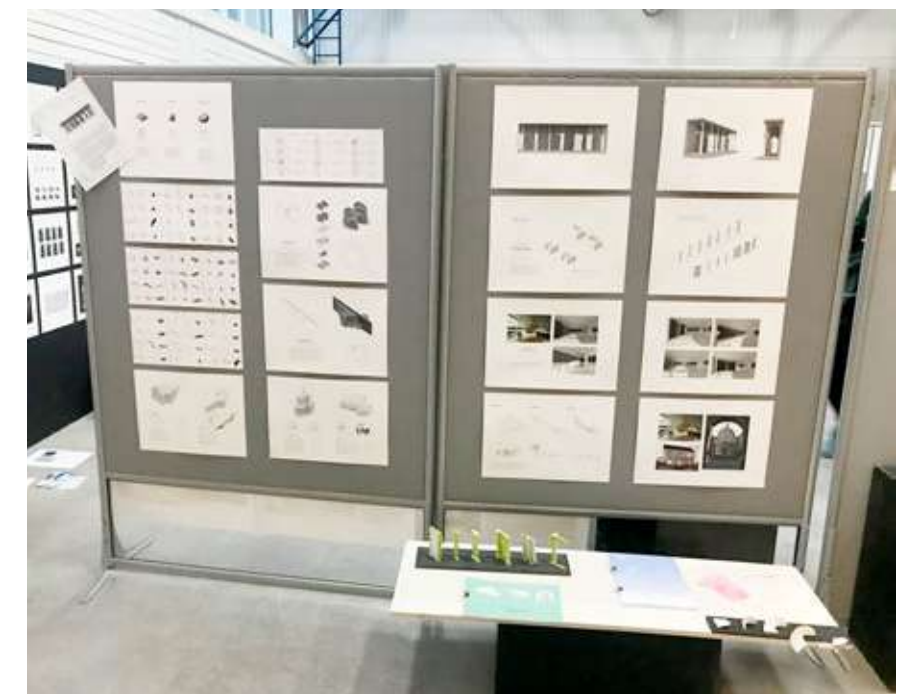


Fig. 1. Mid term seminar layout
Author's own copyright

Present

Material Turn: Daniel Norell, Jonas Runberger, Karin Hedlund
Student opponent: Hugo Rosenlund
*audience around 10 people

Reflections

For the final seminar the project was presented with one big axo and every house was represented with a cardboard model in 1:50 and two floor plans, one section and three interior perspectives. The houses were marked with different colors to make it easier to separate them. Some explanatory drawings that explained the process, the concept and the abstract was placed on the left side of the boards.

Hseng started out and commented on why I had chosen to work only in plan and pointed out the volumed from the design study as very interesting. In her opinion it was a missed opportunity that I didn't develop that further. She also questioned the way I had tried to "make it real", to make the buildings believable, she considered that it could have been tested further.

Stefan asked about my criteria of selection, if I was selecting by practicality or form. And this is probably a part that I should have been developed further during the project. Or just be more clear bout when presenting.

Stefan also asked about the interior objects connected to what Hseng already pointed out. Should I have let things be weird and not have any use.

Both Hseng and Stefan also brought up that I'm using an automated precess which they really liked and that it really worked in my case. It brought unexpected qualities. Both Stefan and Hseng was impressed by the first design study and called it *Villa Savoye sabotage*.

Daniel pointed out that only working in plan is leaving room for own interpretations which have been made successful. Karin pointed out that it's been a plan driven project and described it as weird normality.

In general the presentation was very positive, especially from Stefan and Hseng. I think they contributed with a lot of meaningful thoughts. It was also nice to see how, especially Daniel and Karin stood behind my decision of working in plan and helped explain.



Fig. 1. Final seminar, presentation
Author's own copyright

Present

External jury: Hseng Tai Lintner and Stefan Svedberg
Material Turn: Daniel Norell, Jonas Runberger, Karin Hedlund
*Studio friends

Reflections

I got some critique from Daniel and Karin for excluding material from the design studies, after final presentation. They also wanted all the drawings much bigger. The space for open seminar was 1/3 of what we had on open. I solved it by removing the sections, blow up one of the interior perspectives from each house and then hang introduction and process on the sides, from the wires.

For this presentation I put together a small A5 catalogue, imitating the catalog- house references. The catalog was positively received.

Tyen posed some questions concerning series and how I used the rhino commands. He also brought up a few references, Eisenmann's House VI, the Case study houses and D'arcy Thompson. Eisenman has been a reference even though it's not included in the booklet. He faces some similar dilemmas with functions vs. concept or uniqueness. One example is a glass slot in the wall and floor which divides the bedroom in two parts where two beds has to be placed on either side. It would be very interesting to follow Eisenman's toughs during his project.

The Case study houses would surely have been relevant to study since they dealt with a criticism towards the contemporary home. The question they where facing was to design a number of villas that would question the home and come up with a design for a new, modern and affordable home.

The student opponents had red up very well on the project and they posed relevant questions. Most of them had already been brought up before. For example the criteria for the design, where is the line between boring and strange? How did I do the selection and come up with the final four villas.

Mainly I did the selection very intuitive and I think there would be a general idea of which villa that where the most successful ones from the overview drawing of all 12. But we see different things and have our own individual references so I think this project would have turned out very different if somebody else where doing it.



Fig. 1. Open seminar, layout
Author's own copyright

Present

External reviewer: Tyen Masten
Material Turn: Daniel Norell, Jonas R, Karin Hedlund, Jonas L
Student opponents: Robin Bylund, Hans Carlsson, Linnea Palmkvist
Friends and family

Conclusion

Reflection

My personal aim for this thesis project was throw myself out in the unknown. The first project idea arose as a critique of the roll of architects today and how digital tools are being used to create highly standardized architecture. This led me onto the 1990's discussion about non-standard – the strong believe in the digital as a potential tool for steering architecture away from standardization and rectification. The observation is still very much in question, but architects of today tend to not see digitalization as a solution the way they used to. There is a lot of ongoing research in digital manufacturing techniques, but the common idea is that these techniques most likely will have little or no impact on the regular housing market.

The focus of this project has been to use digital tools in a experimental way, generating a non-standard end design. The opportunity to make a research based project building on design studies and an experimental approach was very alluring to me, as it is a rarely presented in school- or work life.

The choice of focusing on experiments and design studies left little time for the actual design project, and since the design study

include many different parts there have been many options and many ways to proceed. This is probably why the question of choosing to proceed the way I did, given all the other options, was brought up during the final critique. If there had been more time I would have liked to formulate a design criteria that could explain the choices I took in a better way. I would probably have spent more time on the 12 different iterations as well. Finally, I would have liked to be able to put more work into building details. Especially in the surreal aspects, rendering them more real. To illustrate them in large scale detail drawings and models in a larger scale than 1:50 would also have been interesting.

During the operations with the columns I worked partly with textures. The transformed surfaces on the columns behaved in certain ways due to the used operation. Some moments where really interesting. It would have been great to dig deeper into that and apply the result in the final design.

The fact that the project is a series has also affected the work. The series goes very well together with the automated part of the design process where numerous designs can be generated in a short time.

To apply the design method on several villas has been successful since it is very easy to compare the different features that the method generates when the villas are lined up next to each other. When Greg Lynn or Mario Carpo describes their Families/ Patter recognition, they talk about very small differences between the objects in the series.

The method I have been developing however, is generating iterations a lot more differentiated. The four volumes are very different, the similarities are probably easier to identify in plan. The rooms, walls and spaces can be recognized from the input and there is some familiar objects and room-types that can be recognized between the villas.

A central feature of the entire project has been the discussion of normality vs. abnormality. It has become evident that this matter comes down to personal opinion. My tutor wanted me to alter the strange doors and exchange the weird toilet to a normal one. The external jury during final presentation however, saw it as a missed opportunity and wished that more of the interior objects would have been distorted in some way.

I place myself somewhere in the middle of this matrix by allowing a few rooms and certain objects to be distorted. The level of distortion has been so that the objects are surprising, yet recognizable and functional.

For me this semester has been challenging as I have taken on working methods unfamiliar to me. I have discovered a plethora of references and a new way of using architectural history, which is something I would like to continue exploring. In what way is unclear, I might continue developing my own working methods and continue working with weird normally or start my own catalog-house company. If so, my houses might not be the most sold, but they would surely be the strangest.

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Figures

Figure 1: Authors own copyright, 2019, Method diagram

Figure 2: The Estate of Eva Hesse, (1968). *Eva Hesse, Repetition Nineteen III*. Retrieved from <https://www.hauserwirth.com/stories/14479-interview-eva-hesse>

Figure 3: Brad Welling / MAK, (2003). *Coffee & Tea Set, Alessi*. Retrieved from <https://www.domusweb.it/en/architecture/2003/08/27/lynn-s-intricate-surfaces-in-vienna.html>

Figure 4: Rocker-Lange Architects, (2010). *Architecture- System of multiplicities*. Retrieved from <http://rocker-lange.com/blog/?p=459>

Figure 5: *Philippe Magnon, (1998), Sans titre*. Retrieved from <http://www.frac-centre.fr/collection-art-architecture/objectile/sans-titre-64.html?authID=134&ensembleID=348>

Figure 6: *Philippe Magnon, (1998), Sans titre*. Retrieved from <http://www.frac-centre.fr/collection-art-architecture/objectile/sans-titre-64.html?authID=134&ensembleID=348>

Figure 7: *Dezeen, (2013), Good vibrations top cabinet*. Retrieved from <https://www.dezeen.com/2013/03/14/good-vibrations-distorted-cabinet-ferruccio-laviani-fratelli-boffi/>

Figure 8: Rosa Menkman, (2013). *Glitch studies manifest*. Retrieved from A Peer-review journal about The dominant , continuing search for a noiseless channel has been , and will always be no more than a regrettable , ill-fated

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JOBBA HOS OSS

Myresjöhus har varit med och format Sverige i mer än 80 år och som satt sin karaktär på Sveriges samhällen och städer. Vi har inte haft kompetent och ansvarsfull personal.

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Lediga tjänster

Myresjöandan är ett stort kännetecken för oss. Detta innebär att personalen står i centrum - utan duktig personal finns vi inte. Det är vi som är hjärtat i Myresjöhus. Att ha delaktiga och hjälpsamma arbetskamrater gör att man trivs på jobbet, vilket i sin tur leder till att våra produkter blir bra. Med bra produkter blir vi en trygg arbetsplats. Vi försöker även ta hand om den kompetens som finns inom väggarna, att ge människor chansen att växa inom företaget ser vi som en utmaning. Mottot "Ingenting vågat - ingenting vunnet" har funnits i företaget sedan 1946.

Funderar man på vilka som jobbar på Myresjöhus kanske man främst tänker på säljare och snickare men vi är så många fler. Allt från arkitekter, projektörer, ekonomer och inköpare till originalare och en webbstrateg. Passa på att kolla om din kompetens är något vi efterlyser just nu.

Skicka en spontanansökan

Sök



Projektutvecklare

Göteborg • Sista ansökningsdatum: 2019-06-25

[Gilla](#) [Dela](#) Bli den första av dina vänner att gilla det här.



Marknadskordinatorator

Malmö • Sista ansökningsdatum: 2019-06-14

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SPONTANANSÖKAN

Du är alltid välkommen att skicka in en spontanansökan till oss.

SPONTANANSÖKAN

