WOOD 1:1

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The Royal Danish Academy of Fine Arts,
Schools of Architecture, Design and Conservation
School of Architecture

CINARK

afd. 3

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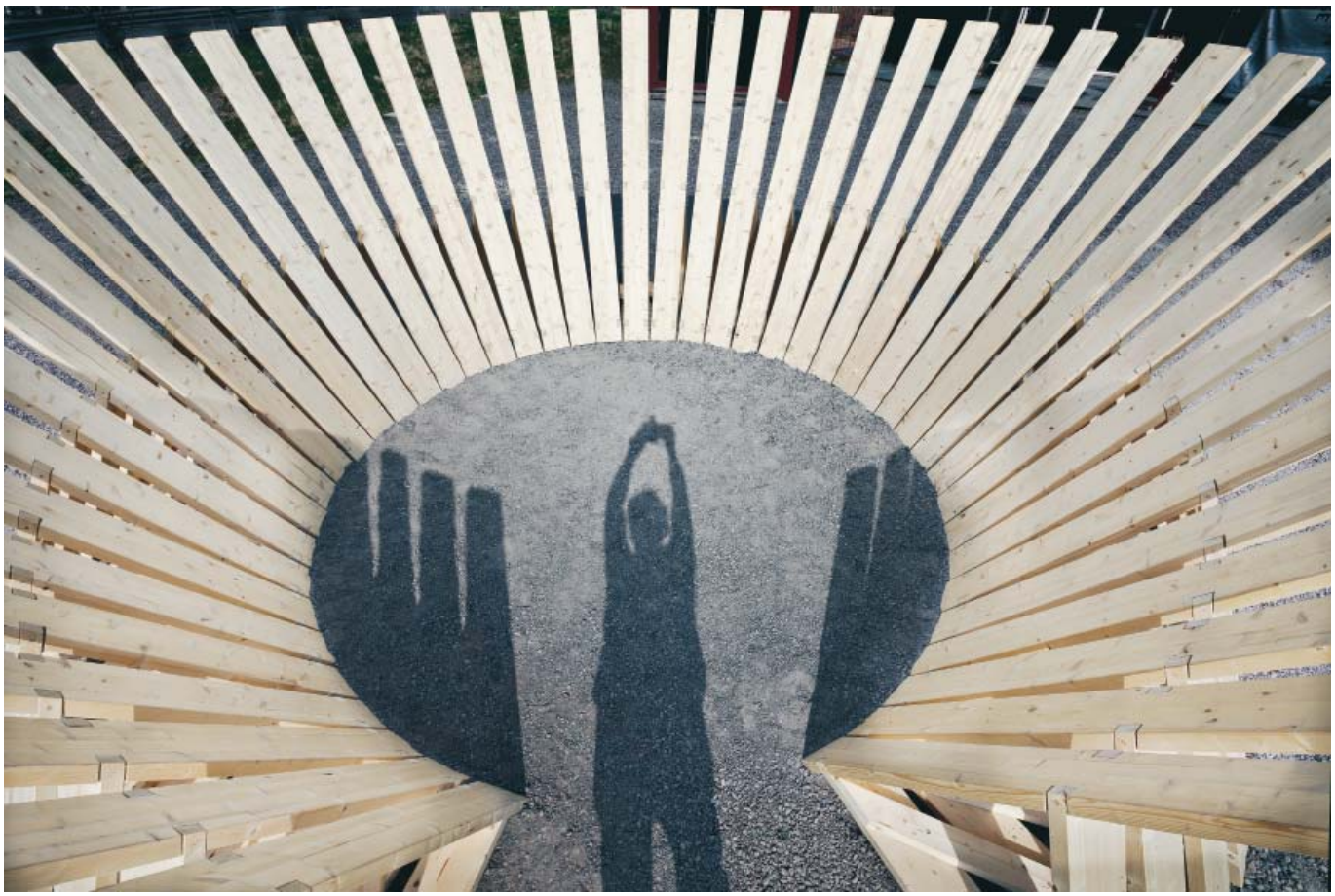


Foreword

Katrine Lotz and Nikolaj Callisen Friis

In recent years, wood has experienced a genuine renaissance in architecture.

The reasons for this revitalization are obvious: the sensory and haptic qualities of the surface of this living material, the smell, the dense and intimate atmospheres it creates, and the seemingly endless possibilities of forming, crafting, and manufacturing the material. Furthermore, wood is an ever-renewable resource; it is recyclable and easy to handle. The constructional properties that have been known for millennia are continuously being enhanced through innovation of industrially manufactured components.

This publication is evidence of the increasing interest in exploring wood as a material in architecture through research and studies at the Schools of Architecture.

In the autumn of 2012 CINARK (Centre for Industrialized Architecture) was invited to participate at the TRÄ2013 International Wood Biennale at Virserum Konsthall in Småland, Sweden. CINARK has a two year research programme focusing on wood and sustainability and this focus together with CINARK's previous work with a pavilion in Cross Laminated Timber, Autarki, resulted in an invitation to build at TRÄ2013. It was necessary to team up with the right study department, and fortunately Department 3 was the perfect match and was interested to be involved in the project.

The spring semester of the Master of Architecture program at Study-Department 3 is called '*The Materials of Architecture - The Architecture of Materials*'. For a number of years, it has focused on studies of how different materials and material thinking can serve as a driver for architectural development, rather than a late application. It was self-evident to set up collaboration with CINARK on what later became known as 'The Virserum Experience'. Besides the results of the workshop that can be seen in the following pages, the invitation also prompted the development of a particular focus on the study of wood throughout all academic activities during the spring of 2013.

The projects on display are the result of a workshop in two phases: a two week design and development phase in mid-February 2013, and a 5 day building phase in the beginning of May 2013.

The requirements were to produce three structures in glue-laminated timber with 2 m^3 of material. These structures were to be erected in front of the Konsthall, welcoming the visitors for the opening of the exhibition.

The wood used for the event was donated by our sponsors: *Svensk Trä* (Swedish Wood) and *The Royal Danish Academy of Fine Arts, Schools of Architecture, Design and Conservation, School of Architecture*. Department 3 and CINARK provided the remaining necessary funding.

We are very thankful for the enormous engagement of time and effort from each and every one of the many people involved in this endeavor.

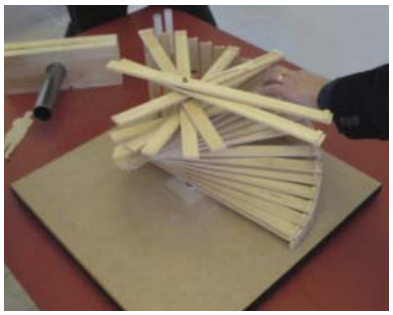
Katrine and Nikolaj, Holmen, July, 2013

The TRÄ 2013 exhibition at the Virserum Kunsthale

The Making of a Workshop

Nikolaj Callisen Friis

Stairway - Giacomo Pizzo



Helix - Stephen Hodgson

Flying Carpet - Kristi Tuurmann

Frame - Martina Rubino

Being in charge of running and organizing the workshop I was communicating with both Virserum Kunsthal and the students whilst making sure that all practicalities were being taken care of. Both before and during the workshop much of the challenge consisted of understanding the context and responding in a straightforward way. What possibilities do we have? What is the culture? Who makes the decisions? Who's good at doing this and that? How will things work here? What can I do to make it work?

During the preliminary talks Katrine and I were discussing how to configure the assignment; was it about defining some dogmatic rules in order to lock the assignment? Should we limit the students to eg. a 3x3x3 m space? Or was it perhaps about insisting in using traditional wooden joinery?

We decided not to create limitations for the assignment, but instead to seize the possibilities we were given. What we had was 6 m^3 of wood, a limited budget for hardware, 21 students, 5 days, and a great site where we could experiment with the glue-laminated timber.

So we decided to make the assignment open: *do with the wood as you please, and let's see if it can be carried out*. This modus operandi would shape our approach throughout the whole workshop. Nothing was impossible, but you had to do it with whatever means were available. The overall goal was not about making an intricate and delicate architecture, but about getting things done within the given time and context.

The starting point was therefore not about limiting the possibilities, but rather about leaving as many doors open for as long as possible. For some this can be a frustrating way to work, because there are no constraints and nothing to guide your decisions, but it also provides a great freedom, which opens up for a much larger spectrum of options. It gives the participants a greater responsibility as they have to account for their decisions, and consequently they always have to think their decisions through.

The challenge was to understand these rules of the game and to accept them. It was important for the students to understand the consequences of their choices and take responsibility for them. If your design demands a certain piece of hardware to work, then what tools will it imply using? And would this be feasible? And by using this building technique, given the means available, could we reach our goal in the given time? This was a challenge both as an organizer and for the students.

It was also about understanding that it was not a professional construction site, where a strict management and organization was required. The strength did not lie in a rigid and fixed operation, but in the anarchic freedom, where everything was possible as long as it was doable. In this way it wouldn't help to stay headstrong to plans and principles - you have to constantly adapt to the situation, and make the most of the opportunities available, while all the time striving to reach the common goal.

Once on site, the construction started and everything began well. The first two days were more hectic as everybody had to figure out how to make things work. There were many questions and many problems needed solving. But the work ethic was high and the students were very focused on reaching their goal. Work usually started at 9 in the morning and lasted until 8 in the evening, and in several cases until sundown.

We were very fortunate to be hosted by the staff from the Virserum Kunsthall - a better setting with more hospitable and helpful people couldn't have been imagined. They were a model to follow and their calmness and good spirits would spread out and influence the workshop. Even though it would be the 11th hour there would always be a way out, and it would take the time it demanded. The starting point was to find a solution rather than denouncing the idea. We would also try to adapt this philosophy.

From the 11th of February to the 22nd of February the 21 students from Department 3 went through a project phase where the goal was to have three ready-to-build projects.

During the sketching and development phase 21 projects were narrowed down to 3 selected projects that were to be built. Professor Olga Popovic Larsen and Associate Professor Claus Bjarrum selected the projects from a group of 6 finalist projects.

From February until the workshop in May the projects were fine tuned, tool and hardware lists were finalized, and a schedule was developed.

5 days before the workshop began, Nikolaj Callisen Friis went to Virserum with four students from the 'Span and Mass' group to cast two 200 litre foundations (using around 900 kg of concrete). This had to be done in advance in order for the concrete to cure.

In each of the three teams different responsibilities were assigned. There was a captain who communicated internally and externally, and had the overall responsibility for their project; there was a tool and schedule responsible who had to coordinate the need for tools and hardware for their group and to also make sure everything was on schedule; there were two group members responsible for documenting their project in order to gather material for this publication; the remaining group members were of course helping out in the building process.

In Virserum everything could be solved - when we needed an extra 0.5 m^3 gravel for the concrete foundations it arrived 10 minutes later with an excavator from the local building supply Bygg & Handel, and when the Span and Mass project needed to have their 10 m beams hoisted, Jakop Stålgren also from Bygg & Handel would show up to assist with his mobile crane.

That is perhaps one of the reasons for the success at the Kunsthall, and why it is possible to run an art space in a remote and desolate rural area - the distances are much shorter there than in the city. In the city you would have to order things in advance, pay a transportation fee and you couldn't afford to make a miscalculation. In Virserum the distance is shorter, both physically and mentally - everybody knows everybody and helps each other out, so no need to worry, a solution will be found.

Just as the Kunsthall provided a setting for a widely curated range of works that in a popular manner displayed wood in any conceivable shape and taste without resorting to any excluding selection, the workshop aimed to provide a similar framework that allowed the students to move freely and experiment with the wood. Sometimes they had to be guided, and other times, they were given free reign.

As an organizer your task is to make sure the framework is optimal for a successful workshop - a good organization is crucial for setting the tone. You can only prepare a workshop up to a certain point, after which you have to attune and respond to the situation.

You should be able to predict the quantities of hardware and tools needed, but there are so many intangibles that you can't foresee. You won't be able to predict everything, especially things like how people work together or how the weather turns out, and once the workshop is in progress it's all about communicating, adapting and understanding the context.

Jacob Stålgren from Bygg & Handel would help us hoisting the elements together for the 'Span and Mass' project.

There was a great learning process in going from 1:10 model scale to the 1:1 building scale. Even though the model helped solve many issues, you can never fully grasp the project until you go up to full scale. This is particularly evident when working with wood.

Celebrating architecture and glue-laminated timber

Katrine Lotz

As architects, we oblige each other to celebrate the architectural statement. We cherish the event where consistency and meaning emerges though hard work and messy circumstances.

We teach, and we continually subsume to being taught, how these festive moments of architecture can be obtained.

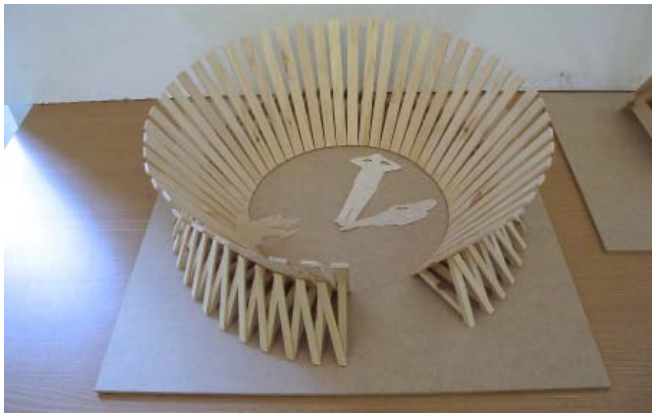
If we want to celebrate material as the life of the party, we need to pose questions to ourselves and to everyone who joins the feast of architecture: What are the skills we are required to learn? What are the questions we need to ask, and what do we need to study?

Obviously, it is a prerequisite to acquire sharp senses, and to carefully build up a personal knowledge and vocabularies of the haptic qualities of a given material. It is necessary to be able to capture and to know of smells, feels, looks, sounds and even tastes in order to make possible the dreaming of ephemeral atmospheres of potential spaces and forms.

When 'Sunbath' invites us to involve our whole body, simply by asking us gently to lean backwards and give in to the support of the warm and solid plank and to experience how the sky comes closer and how our voices becomes more intimate and dense in the enclosure, it is evidence of thorough studies and many tests of this carefully set experience.

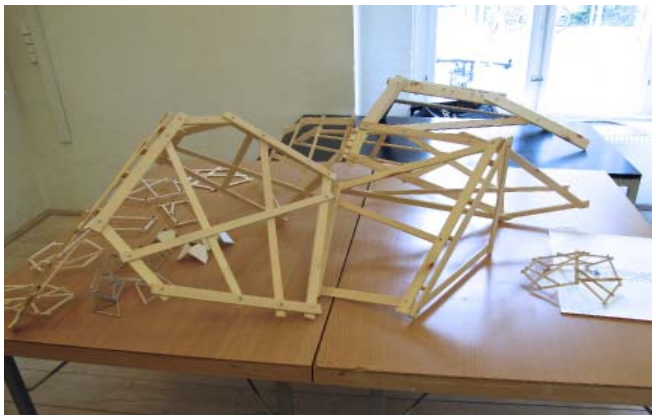
We need to have knowledge of the structural capacities of the material. And we have to acknowledge, that this entails both the kind of knowledge that can be calculated and verified, as well as the intuitive sense of what it takes to find balance. An often personal, but equally often shared cognition of the structural potentials, that is build up through direct interaction.

The lattice-structure of 'Rigidity' employs the seemingly simple principle of endowing some of the structural properties of the plate to the grid through cross-girders.



Sunbath - Milda Naujalyte

The circular space that is obtained by the arrangement of the 47 similar elements provides for a precisely staged spatial experience; namely of the sky. The angle invites visitors to lean the body and to rest against the plank for a moment. This slight change in perspective together with a few relaxed breaths establishes a position in which a more conscious presence in the world becomes possible.



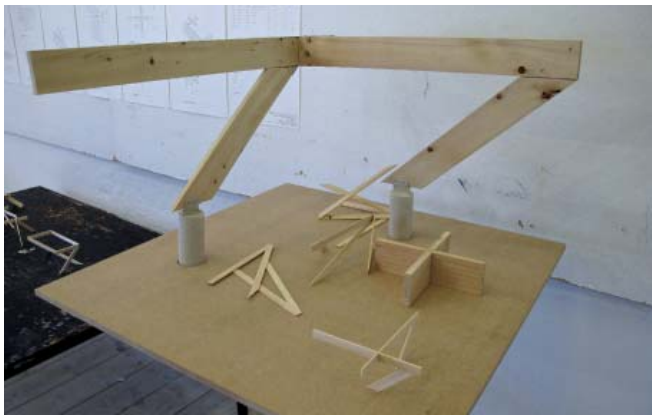
Rigidity - Pedro Sainz de Vicuna

The open frames become plates in a structural sense through the crossing joists. A simple additive principle, where the simple polygon varies in size and geometry is applied. Suddenly, a complex and dynamic spatiality is suggested.

However, by employing the equally simple additive principle with a deft sleight of hand, a dynamic and spatially very rich structure emerges.

Perhaps less obvious - but no less crucial - we also need to understand how materials are most often conglomerations of many processes, involving humans, machines, logistics and infrastructure. Any 'Building material' has already travelled a long way from 'Raw material', and is equally often composed out of several materials, manufactured and targeted to meet specific tasks.

The figure of 'Span & Mass' obviously dares both the capacities of the material and the laws of physics. It embodies a refined sense of, how the forces in the industrially produced glue-laminated timber are so evenly distributed, that it obtains the capacity for very large spans and to carry comparatively high loads.



Span and Mass - Victor Velvarde

As the statement of 'Span & Mass' stands there forcefully, with all of its minor imperfections, it seem to simply rejects the kind of notions of precision set up by that particular kind of perfectionism that always seem to miss the larger motive. In that sense, the whole thing establishes a somehow slightly arrogant but also disarmingly humorous and charming air of the possibility of a contemporary masculinity.

The knowledge-in-the-making obtained through the direct contact with glue-laminated timber in these three statements forms a beautiful fan of 'shared cognitions'. Shared experiences of the strong links between hand, tool, beam and team.

Experiences of, how the negotiations resulted in increasingly tight connections between things, place, tools and humans, how it formed a situated and very particular network that performed a four days long game.

And when each member knew the rules, the spaces could be presented. It was a wonderful party.

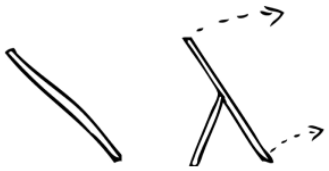
The Three Workshops

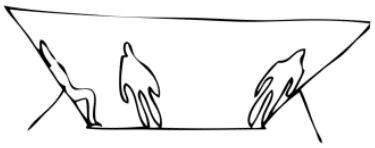
Sunbath

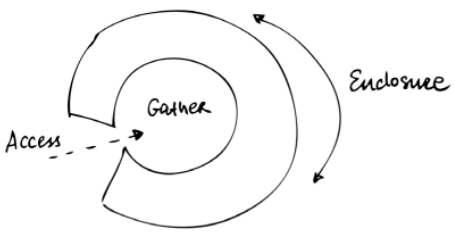
Captain + tools & schedule: Milda Naujalyte

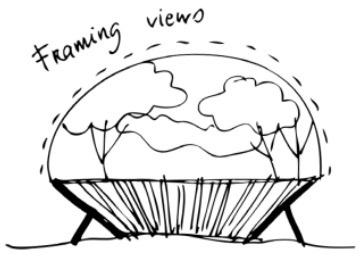
Documentation: Ioana Alexandra Mitilelu, Milda Naujalyte

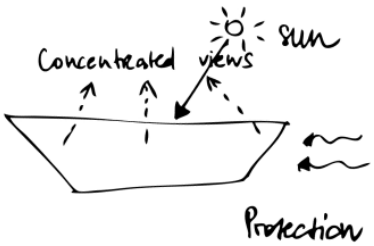
Bees: Alexis Anderson, Jan Vybiral, Ben Allnatt, Julian Mirabeli, Xiaojun Fu, Ioana Alexandra Mitilelu






Gather
Access
Enclosure


Framing views


Concentrated views
sun
Protection

Interview with Milda Naujalyte, the captain of 'Sun Bath' team (MN)

The interviewer - Ioana Alexandra Mititelu (IAM.

IAM: *Describe the concept of the project.*

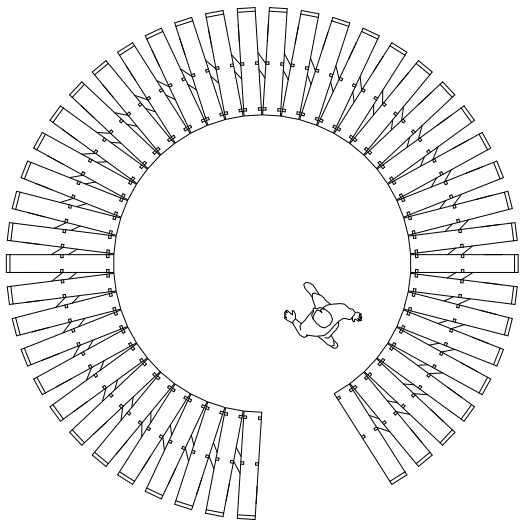
MN: Sun Bath is an installation designed to frame the sky and shift the user's perspective of the world. It challenges the usual physical position of the body by suggesting the possibility to recline. When one lies on the angled boards, the line of sight is shifted towards the movements of the sky and the fragments of trees and buildings that can be seen. It is these moments that allow for the observation of the environment previously unseen.

IAM: *What was the main inspiration during the design process?*

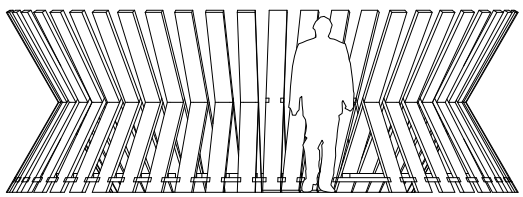
MN: First – the response to the given site: a peaceful rural landscape, where sky and trees are the main actors. Second – the will to create a space that encourages interaction, intuitively rather than direct.

IAM: *What is the principle of the structure?*

MN: The installation is constructed almost entirely from smaller sections of glue-laminated timber. The form is refreshingly simple – a regular circle of sloping members that open up towards the heavens, punctuated by a modest opening to allow movement between the exterior and interior. The slope of the inner circle is mirrored in the outer supports, which extend halfway up the board. The circle is composed of a single self-supporting module that is repeated forty- seven times and then braced by horizontal members. Each module is constructed of three members that interlock together by opposite cuts and then strengthened by wooden



Top view



Front view

Building process

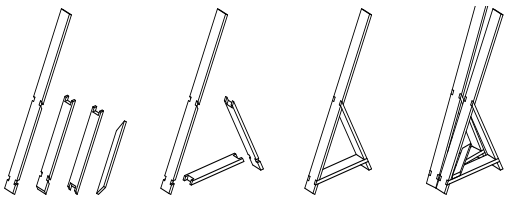
dowels. The whole construction is made entirely out of timber, with no screws or nails – almost like a single piece of furniture.

IAM: *Why did you choose this type of structure?*

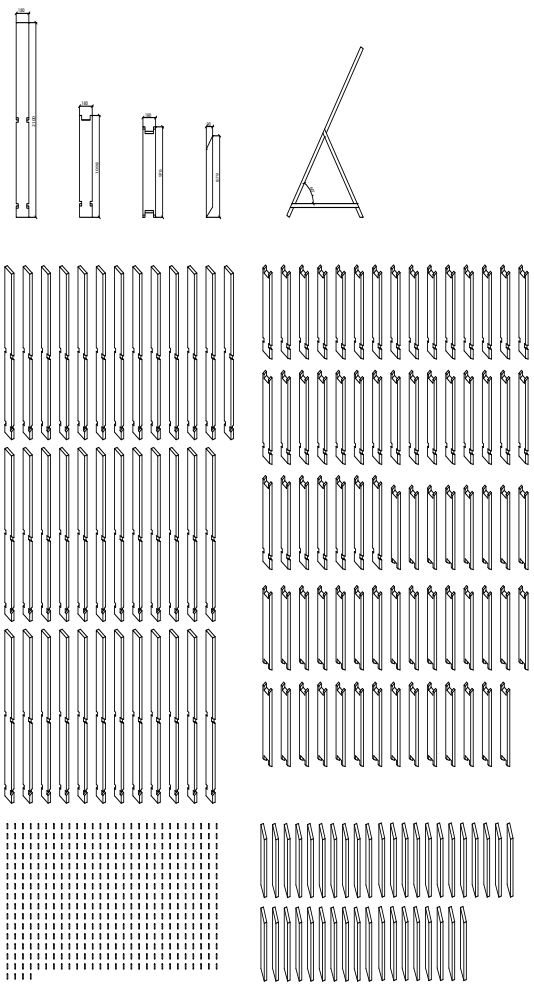
MN: The main principle of making uniform self-supporting sloping modules was the core of the concept, but the actual construction method evolved step by step. At first the idea was to make the cuts and joints as simple as possible, so as to ensure the highest efficiency of work. None of us had ever worked with this type of wood before, so we did not know the limits of our possibilities. Nevertheless, in the end we developed quite complex and sophisticated cuts in order to achieve pristine interlocking joints that could be built entirely out of wood.

IAM: *How does the structure meet the project's concept?*

MN: The main structural principle is that the members meet and interlock in a certain way, and it is the only way they can fit due of the angle of the cuts. At the same time the angle used (60 degrees) is the most appropriate for the combinations of 3 elements. The same concept can be read in the 'Sun Bath' - the experience of the installation comes from the interaction between the body and the angled board.



Assembly of the element



Kit of parts

IAM: *What was the main challenge in the building process?*

MN: The main challenge for us was the lack of experience working with complex cuts and the issue of time. We had 3 days to make 423 cuts! But the first day we figured out how to manipulate tools and wood pieces, so it was simply a question of using our time and resources in the most efficient way.

IAM: *How was the team organized?*

MN: The team was more or less split into two groups - cutting and assembly - and there was a person coordinating the process and interaction between the two. Also, the groups had to be flexible due to the limited amount of tools. The first group was responsible for measuring the elements, assembling the cut pieces, drilling, dowelling, preparing the site. The second group was cutting and chiseling - almost without a break. From an outsider's perspective we looked like a little factory line. The most exciting fact is that every member of the team touched every single piece of the installation in some way – either by measuring, or cutting, or drilling, or dowelling, or leveling... the project was truly realized through teamwork.

IAM: *How long did the building process last?*

MN: The 'Sun Bath' team was working from the first day until the very end of the workshop with very few breaks. In total it took 32 hours of work in a team of 7 members.

Assembly of the installation

IAM: *Compare the built project with the initial sketch. Are you content with the outcome?*

MN: Seeing the initial sketch materialized is the best gift that young professionals like us can get during our education. I have to admit – the result surpassed my expectations. I did not expect the material – glue-laminated timber – to perform so well or be so easily manipulated. At the same time it was great to experience the angle we chose was the proper one.

IAM: *Would you change anything? If yes, what it would be?*

MN: There was one thing that did not depend on us – the site of the project. Initially it was meant to be built on the grass so that the users could not only lean, but also sit down and relax. But the given site was a dusty gravel pitch next to the entrance to the museum and the road. It changed the experience slightly.

IAM: *What is the main feature that makes Sun Bath different form the other two projects?*

MN: Although 'Sun Bath' has a pure formal expression and refined aesthetics, it is ultimately about spatial experience. The other installations are more meant for visual and mental excitement – 'Oh, it's standing!' whereas in our case it is more about affecting the visitor – 'Oh, it works!'

IAM: *What are the most intense moments, engraved in your memory?*

MN: One moment like that was when we assembled the first member of forty-seven and tried it out. It was a moment of certainty. The other one was when we assembled the whole structure on the grass next to the flowing river and a forest and everybody, even people from other teams, came in. They all sat down staring at the sky and trees, listening to the sound of water, and suddenly it became silent. It was a moment of bliss.

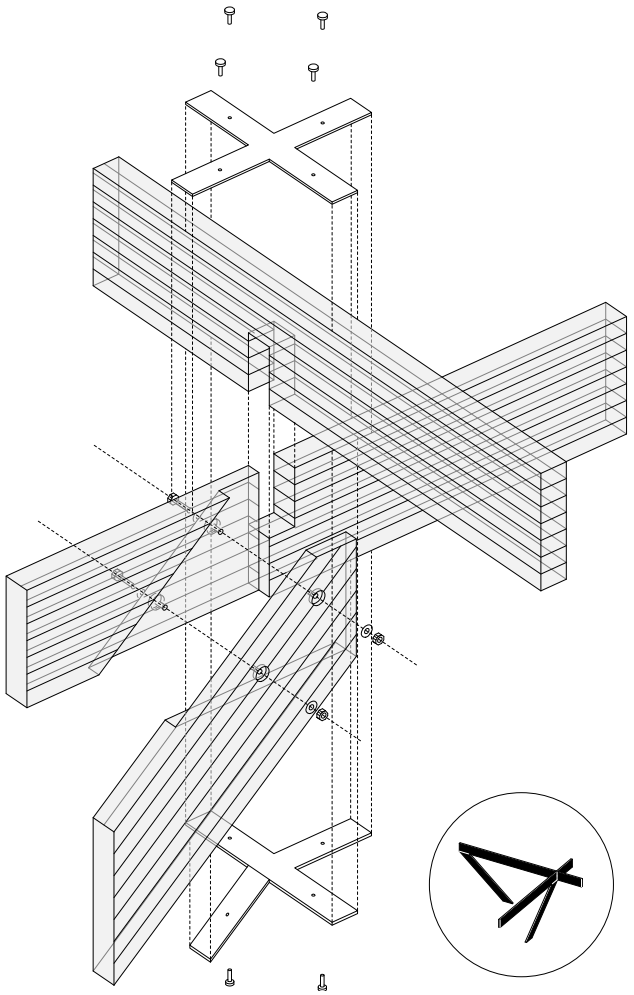
Span and Mass

Captain: Victor Velarde

Tools + Schedule: Carolyn LeCompte, Mathias Wehinger

Documentation: Jason Treherne, Choi Wah Lui

Bees: Andreas Grunvoll



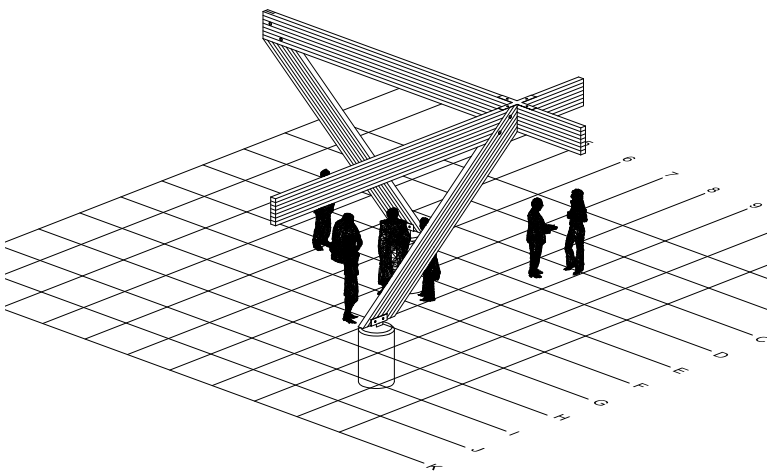
Interview with captain Victor Velarde

Tell us something about your design Span and Mass (concept, ideas, assemble/construction)?

When posed the design problem of building a project that exemplifies the qualities of laminated timber products, we immediately thought of two characteristics: span and mass. With this design, we celebrate the inherent spanning properties of the product. By incorporating dramatic angles, massive members and daring spans, we hoped to push the limits of what is possible with glue-laminated timber, and from the final installation you can clearly see that we achieved our goal.

Ease of assembly was also a design concern. We wished to minimize the number of members used, the number of cuts necessary and the number of connections between members. Because our team was limited in terms of labor, time and money, we created a design that works well within these constraints. The design uses only four glue-laminated timber members and has only four connection types. These connections are simple and easy to assemble.

Exploring this shape was a balancing act – in order to carry the cantilevers, the design must have the necessary counter-forces. Although concrete footings were obligatory, it was essential that this daring structure be able to support its own weight. We found that the design only needed two points of contact in order to stand. With additional concrete ties to the ground, the overall structure would remain strong to external forces. To take the design from conceptualization to construction, we decided to



decrease the dimensions of the members and the overall size of the project. This would not only make the beams more manageable to assemble, but also decrease the depth of the concrete footing necessary to support the proposed cantilever.

What are the difficulties in your design? Did you ask advice/consulted a professional? Did you have to adjust your design?

The problem that was most apparent was the structure's 6.5 meter cantilever. From the initial model mock-up, questions arose if the beam itself and connection would have the necessary strength to pick up the rotational forces acting on the cantilever. This question led us to consult the structural engineer at KA, Anne Bagger, and through her basic calculations we were told to move

forward with our original design, with only minor adjustments to be made. Changes also occurred at the foundation level.

The creation of complicated footings was not possible

since we only had a day to measure the site, dig the footing holes, mix and pour the concrete and place the metal socks (this was all done the weekend prior to the actual trip to Sweden). These small changes were crucial since the team and I did not want to change the overall design of the piece.

How did you prepare for the Virserum workshop (planning, drawings, tools, etc.)?

Drawings were the major part for preparing for the workshop. We needed drawings that were basic and universal, so anyone could understand the method of fabrication and assembly. Of course meeting in our group to organize ourselves was always a crucial part of the process, but the simplicity of the design led us to branch out and research the parts needed for construction.

Was the realization of your design tougher than you expected? Were there any issues that arose during the construction phase that you didn't account for? How did the team solve it?

Our main concern was to get the structure standing since it was so massive. Other than that it was a basic assembly procedure.

How we organized ourselves and the assembly-days made the process straightforward and gave us enough time to make changes if any problems occurred. We were fortunate that Virserum provided us with a crane; without this I do not believe we could have erected the pieces.

A slight problem we faced was due to a crucial cut being made at an incorrect angle. However, this did not turn out to be a major issue as we corrected the cut relatively easily.

Does the final result accomplish the first intentions? Are you satisfied with the end result? Now your project is standing, how does that make you feel?

Yes, it does accomplish the first intentions and we are satisfied with the end result.

It feels amazing to have had the opportunity to realise this project; plus it looks great and we had a fantastic time in Sweden building it!

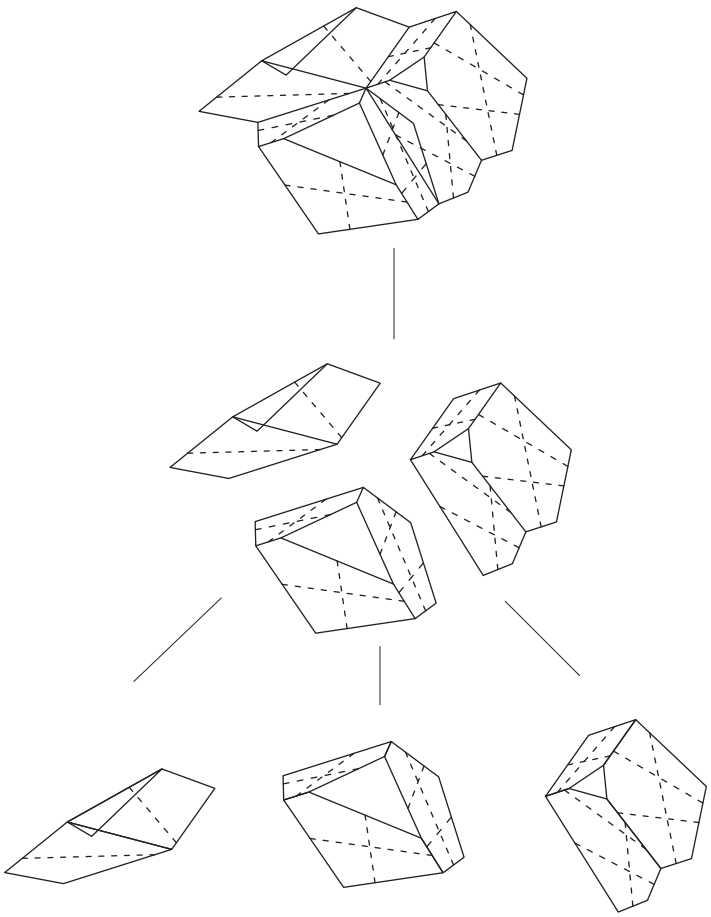
Rigidity

Captain: Pedro Vicuna

Tools + Schedule: Boryz Wrzeszcz

Documentation: Kristi Tuurmann, Hanna Jensen

Bees: Bart Smets, Hugo Martinez Munoz, Gemma Toner, Andreas Brunvoll

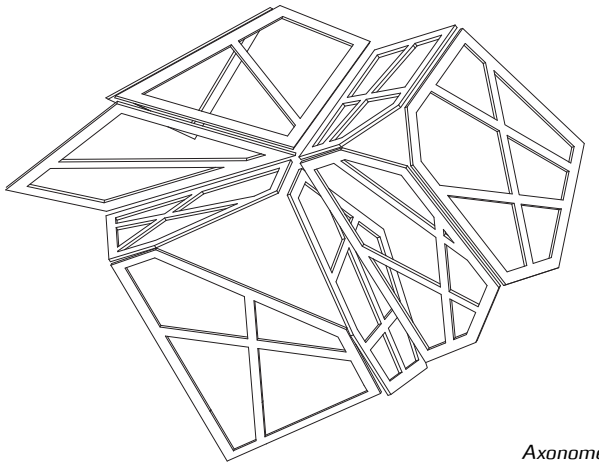


Interview with Pedro Sainz de Vicuna, Captain of 'Rigidity' team (PSV), Hugo Martinez Munoz (HM), and Andreas Brunvoll (AB)

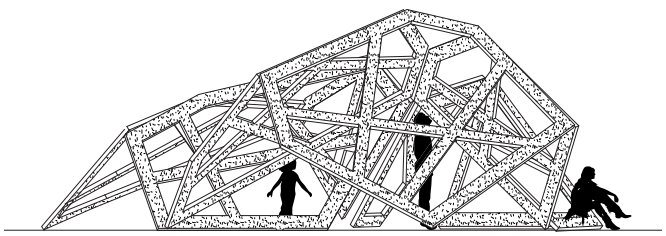
The interviewers: Hanna Jensen (HJ) and Kristi Tuurmann (KT)

HJ: *Pedro, you are the author of the project, tell us, what is the idea of the project?*

PSV: From the very first moment, I was interested in the structural properties of glue-laminated timber. I had the idea of making frames of different sizes and playing with them. Frames with a different number of sizes, and how it was possible to make those frames rigid with the minimum amount of wood and elements. I started experimenting a little bit with those frames, frames that were made of four, five, or six beams in the outside perimeter, and seeing how many interior beams I needed to introduce to brace those frames. So after experimentation, it emerged that there should be a difference of three between the number of outside beams and interior beams. So with that rule, we were able to start playing with different frames and unusual geometries. So, for example, we were able to make really irregular frames, with six or seven exterior beams of different lengths and different angles, and by using the rule and introducing the right amount of interior beams, we were able to 'rigidize' those irregular frames. After creating those two-dimensional frames, we tried to move into three-dimensional design, so we started putting those frames togetherto create a volumetric project. At that point other people joined the project, and we started playing with those simple rules, creating two-dimensional frames and putting them together into a three-dimensional element, and seeing what different things we were able to create, to design.



Axonometric view



Elevation

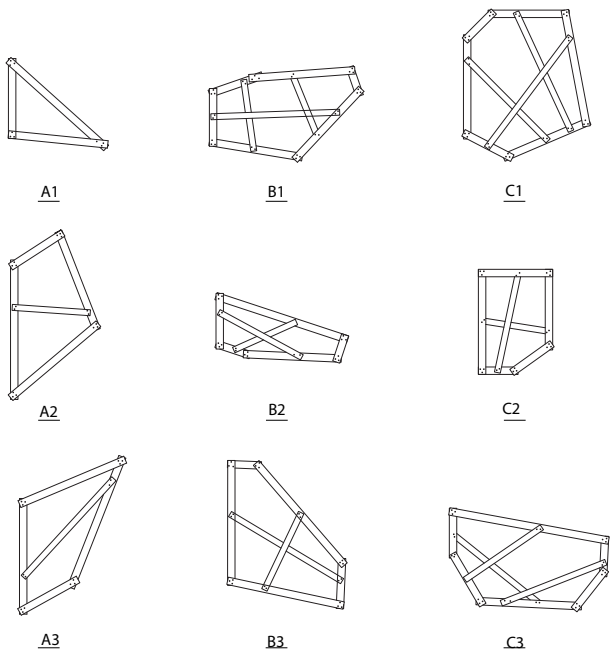
HJ: *When your project was picked, did you change it a lot afterwards? How much did the group influence the project?*

PSV: The influence of the group was really important. We did not change the pre-existing rules, but we started to develop at lot of new things, that were not part of the project before.

HJ: *Could you give us some examples of that?*

PSV: In my first models the frames were joined together in different angles, without any rule or logic, and with the group it was quickly decided that we should put them together in 90-degree angles, so we were able to simplify the joint between the frames - we only had one type of joint, 90 degrees, between frames. So with that new rule, we started to design by putting three surfaces together, making the surface orthogonal, one from the others, like if you pick three faces of a cube. So by having those three surfaces we started drawing the frames that we liked inside of each surface. That was a really important point in the project, and that idea emerged in the group work. Another important thing that we decided in the team was for the combined elements or 'pyramids' to only have three points, or three legs, that were touching the ground, so the structures would be stable and easy to place anywhere.

HM: That means that each frame touches the ground only in one point.



HJ, KT: *What about the dimension of the beams, was there any reason you chose these dimensions and not another?*

HM: Initially we calculated how much wood we had, let's say two cubic meters, and tried to work out how big these structures could be with that amount of wood - if you remember (Pedro), at the beginning we did structures that were double-sized, it was crazy.

HJ: *Even bigger?*

PSV: Yes! The first idea was doing only one pyramid, but much bigger. We were always thinking about using all of the two cubic meters provided, so by doing one pyramid, this pyramid was going to be huge. After that we tried the idea of instead doing more than one pyramid, three for example, and began to play also with the relationship between those three pyramids.

HM: And with regards to the cross-section of the beam, we first thought of using a smaller one, but we were concerned because we didn't know how it was going to work, so we decided to use this one, one of the biggest ones. And then the joints, we had a big problem resolving the orthogonal joints. And then that is when Andreas Brunvoll provided us with a solution for that joint.

HJ: *So when you arrived at Virserum you still did not have a solution for the orthogonal joint?*

HM: No, no. We did have a joint, it was a triangle (now we have the crosses), but we were not sure if it was going to work. It was a triangle that was touching both beams, and between the triangle and the beams we had some metal brackets, joining the beams and the joint… It wasn't a good joint; it didn't make much sense.

PSV: So before coming we were not sure how we were going to solve that problem, we came knowing that we should do some trials in-situ. It was Andreas that came and designed the final cross joint.

HJ: *Andreas what do you want to say about that? How did you come up with the idea?*

AB: The problem with the previous joint, the triangle, was that it was not going to be able to lock the individual plates in place when you were setting up the structure. It would have been difficult to structurally hold all the plates. So the cross was a natural solution to put the frames together.

HJ: *But you had one prototype of the crosses that did not work; why?*

AB: Because it followed the wood grain and it cracked pretty quickly.

HJ, KT: So you had the idea of turning the angle 45°.

PSV: It was Hugo that realized how to solve that problem.

AB: After that trial I was more skeptical, but we realized pretty quickly that by rotating the piece it was going to work.

HJ: And it obviously does....

AB: Yes, it does. But also, I was pretty sure it was going to be able to hold, and the dimension was good enough to hold - when we were putting it up I did have doubts that the strain would be too great but it works, miraculously (laughs).

HM: *Yes it works really well. We were climbing on top, remember?*

AB: No, I mean now that it is standing there's no problem.

HJ, KT: *How do you feel now that it is done? Are you happy with the final result?*

PSV: Yes, I am really happy with the result. It is the first time that I have built my own design in real scale, and it is a really nice feeling to see it standing; and in the end it is really rigid...



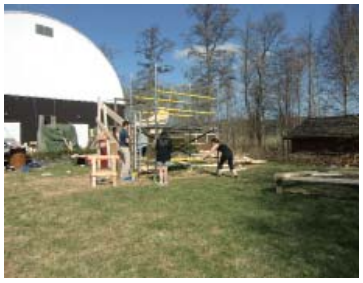


























Woods, Trees and The Forest

Ola Wedebrun

Gathered in the city, a Saturday spring morning.
Fresh new leaves on the trees along the central station.
The bus takes us from the urban space
over the bridge to the mainland in the north.

A shift of scenery

Vast fields reach the horizon, getting closer,
turning vertical trees, becoming forest.
An infinite resource: growth, matter and construction.
There is no end to the inherent possibilities,
to eternal time, and the omnipresent social space we are about to enter.

Involved
It is obvious that it is impossible to be innocent and indifferent
Wood, Trees and the Forest,
this is where it becomes serious.
Coming from concept, on the way to matter and construction,
- to know and perform metamorphosis of craft and structure,
- to share experience, social and technical construction,
- to be with matter,
- in nature and culture

Season
Anemones covering the sylvan soil.
Itchy, sticky juniper grow from apparent cracked rock.
No limitation to the pristine scents.

The forest is within the cultivated grove,
- the vast meadow,
- the disciplined coppice,
- the conscious clearance.

It is the difference of oak and birch
- what it takes to make a pine turn to fir

Glue laminated wood the asset of the process
Tools meet the craft;
- hammer, chisel, and bat;
- sound, scent, and rhythm.
- saw, chain, and machine

Trembling with courage, or merely daring.
As trees grows to forest, wooden constructions become social spaces.
The distance of concept and mind, from line to reality,
making weight and balance correspond,
making material construction turn to matter.
Even the indefinite becomes space and energy

Wood
The experience of involvement,
sharing what it means to follow the season.
Wood built tradition and daring structures.
The forest is infinite and vulnerable.
Its properties, are the trees and within the wood.
Eventually changing;
pine becomes fir,
a mutual relation

Known and developed from production and construction,
The importance of being in the venue, in concept and construction,
merging with matter and character.
Follow through, and survive with experience

The Next Real

Arriving, settling - finding space and site
engaging with time.
While coppices of the plain are unnoticed,
the forest is infinite
Suddenly, as birch is distinct from beech,
the presence of oak is impossible to neglect.
- the sound; Quercia.

Daring, trembling.
Chisel and hammer;
saw, chain, machine.
a work of significance, of no escape;
Structure imagined in supersonic detail;
intergalactic and metabolic, its there.

Returning to the city takes even less than three hours