

Title - Freedom Play Sticks for Play Spaces

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Abstract

In playgrounds usually children find various play equipments containing different activities, but rarely facilities are found which bring opportunity to play with space. Even though, in playground equipment industry there is not enough attention to spatial play, it is a very valuable play activity for children's development; there are lots to learn from space as well as so much fun to enjoy of it.

The project Freedom Play Sticks has looked at the playground as Architectural play space and address the question: What if the play equipment would be designed to create the play *space*?

This project's aim is to make a modular space creating element for Landscape Designers to use in creating outdoor play *Spaces*.

The idea of the product is to make a flexible playable component that can be used to generate a wide variety of spaces depending on different sites and locations, as well as having the freedom to use it in their own way for different projects.

Freedom Play Stick consists of two parts: a small square shaped block which is connected to the foundation under the ground, and the second part which is a thin long stick and is the main visual element. The stick is joined to the block with a main axle and can thus be installed at many angles from almost horizontal to vertical. Locking bolts then keep it in position. Once the Freedom Play Sticks are installed in place, they can stand alone as a sculptural space creator or many other materials or play activities can be attached to them to provide something for all age groups.

The challenge of the project was to create an element which is supposed to be used by other designers in their own design projects. It is important in this process to remember that they have their own ideas and want the freedom to choose their own way of using the element. There for it should be as flexible as possible to suit different desires and uses.

I aimed to design a product that was simple in appearance and flexible in its use. In this way it can be used in many environments without over powering the natural beauty. And because, it has an open identity (without too much detail) it can be used in many solutions.

Keywords modular, space, playground, flexible, simple, play

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Introduction

Playgrounds are generally known as part of the outdoor play environment. No matter if some playgrounds are unique and some look the same as many others, they are all for playing outdoors. Most commonly, a playground is a limited piece of land that includes facilities that inspires children to take part in various activities and play.

Being an Architect lets me see playgrounds from a different direction than from that of a play equipment designer. For me playgrounds are open **space** architecture. In other words a playground, for me, is an open space where architectural elements are used to make a play atmosphere. Many times Architectural elements are built on site, such as pathways, walls, stairs, so a question I am interested in is – how can the Architectural Space Play Elements become modules and be able to be mass produced?

However, in recent years, Landscape Architects have become more involved in the planning and designing of Playgrounds. As the LA profession evolves, Landscape Architects want the Playground to evolve as well. They want to break the usual playground apart. They do not like that most playgrounds are kept within a square box of sand. They are looking for 'play pieces' that they can place around an area to make a playful atmosphere. But Landscape Architects are not Product Designers and do not have time to solve this problem.

Who designs a playground?

Playground design is a result of cooperation between various fields. Product designers and product companies make the equipment and the designers of outdoor space (Architects, L.A. , city planners, teachers and parents) combine pieces of play equipment with the other site objects to build a play space.

- Landscape Architects

Landscape Architects are designers who focus on outdoor space. Their design contains both aesthetic and functional values. The majority of their work is not playgrounds, but many do like to make 'playful' environments.

- Companies making play equipment

Companies making play equipment have been trying to make their products better according to the user and customer's needs. From past till now, there is a large development in these products changing from huge volumes to more elegant and smart ones. Continuing this way, as a vision for future play equipments, some play equipment designers are designing products that are closer to the ground and are easily accessible.

Taking a critical look at the play environment through my eyes as an architect, and searching for more contemporary solutions to the play environment were the main reasons that make me interested in this subject. By focusing on playground equipments from a different angle, I have tried to combine my experience as an architect with my new knowledge as a designer for children and will attempt to make a change in how play equipment is designed for outdoor play areas.

Concerning to children's needs in playgrounds

Children need more spatial play facilities in the Playgrounds. They want more opportunities to explore their environment in different scales; small scale is mostly available indoors and large scale is approachable outdoors. For children, exploring outdoor spaces can contain even more open concepts for playing than indoors. Playing with space details is one of the most interesting and creative play activities for children in different age groups. But we can see that in regular playgrounds there is no play activity based on space and only in some unique playgrounds we see that the designers consider the spatial play attitude in their design, but these specific projects, of course, cost a lot to be built.

During our education in Child Culture Design program I learned that there is a general rule about play tools: as long as the objects and tools for play are less defined there would be more unknown play options and children can be more creative in making their own play rules. So it is the same for the playground equipments, more open-ended play tools are, they would make children find more ways to play with. Then it is so clear that the atmosphere in a playground has a very significant role for children getting inspired to start playing.

Partner

The project **Freedom Play Sticks** has been made in collaboration with the Danish company, KOMPAN. KOMPAN is the world's largest producer of playground equipment and sales and distributes throughout Europe, North America, Australia and the Far East as well as some parts of South America, North Africa and the Middle East.

The primary idea of this project started during my internship at KOMPAN. Thus, I decided to fulfil my exam project with KOMPAN because the company has valuable experience in the playground equipment industry concerning, user research, product innovation, production, marketing, and sales.

In general, I found the design department quite open for developing new ideas and a precious resource for my exam project.

During the exam project process, Michael Laris, KOMPAN's "Concept & Design Creation Manager", has supervised the project as an external tutor.

IMPLEMENTATION

Start concept

In the architectural point of view we can consider playgrounds as **spaces** that are created for children to play outdoors. In this way, the play equipments are space developers not just objects or big scaled toys that are dropped down in any site. The play equipment pieces I was thinking of were different sized volumes and which were occupying space and affect the environment and children. I got inspired by children, watching them and their reactions to the outdoor facilities and objects which were not meant to be played with. Through my searches I saw several special activities that children find by themselves with space around them. It was so inspiring for me to see for example, how simple a child started jumping over stairs up and down for several times, another child was just spinning around a pole by grabbing to it with one hand, a couple of kids running in a circle around a bench following each other, and so many other motions I found through my inspiration research, which were all started by children having a play-seeking look at their environment.

The first elements

At the very beginning, my focus for play space was exploring multifunctional pieces which already exist in outdoors and contain playfulness and have the potential to be helpful in space creation. During this stage there were 11 elements which I started to investigate possible play activities for each of them for different age groups. These primary elements were these: post, railing, wall, pole, stairs, tile, stage, tunnel, rope, rock and bench.

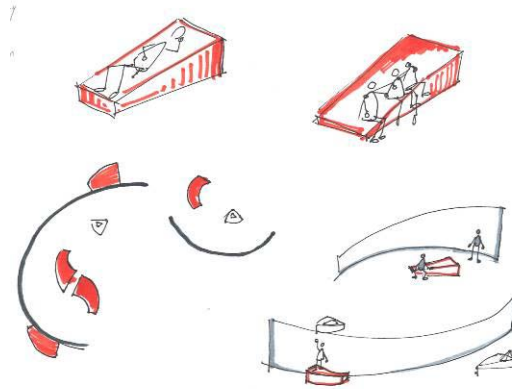
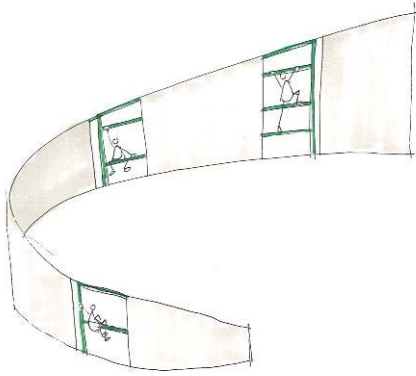
Space elements

On the next step I found out that no space can be built with only one piece, so the next thing was trying the combinations of the definite elements, and analyze the result of diverse combinations of the elements in relation with play and activities.

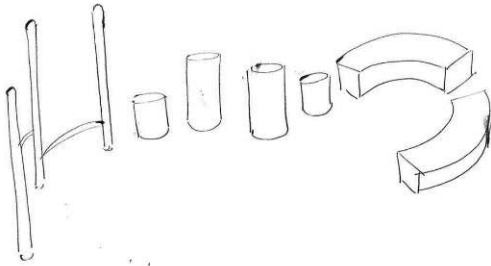
So I had to choose one of the options to continue with the design:

- choose one piece,
- choose 2-3 of the pieces,
- choose all elements or
- analyse various spaces that a group of elements can create.

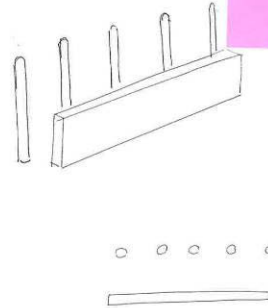
The result of the analyses brought new idea into the project; even by selecting one of the elements and repeating it in the play area it could be an option for building play space. So I decided to take one element and get deeper in designing the ultimate space creator play equipment out of one of the primary elements.



Bench + Post
+ Pole

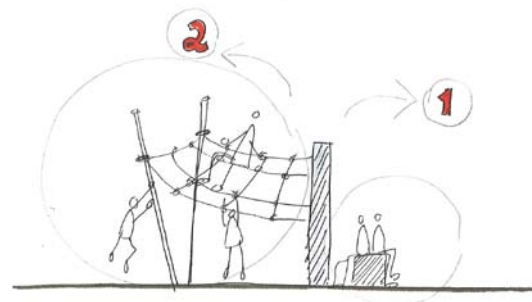
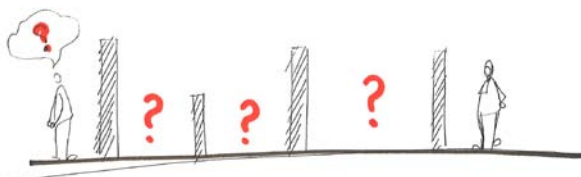


wall + pole



An element to continue with

The element that I selected to concentrate on was Wall. Why Wall? Because, first of all, it can identify a space simply and obviously, and secondly, it is an element which by changes in size can convert into many other types of space creator objects such as stairs, bench or etc (or, in other words, other elements can be concerned a wall type.)



Make a modular piece

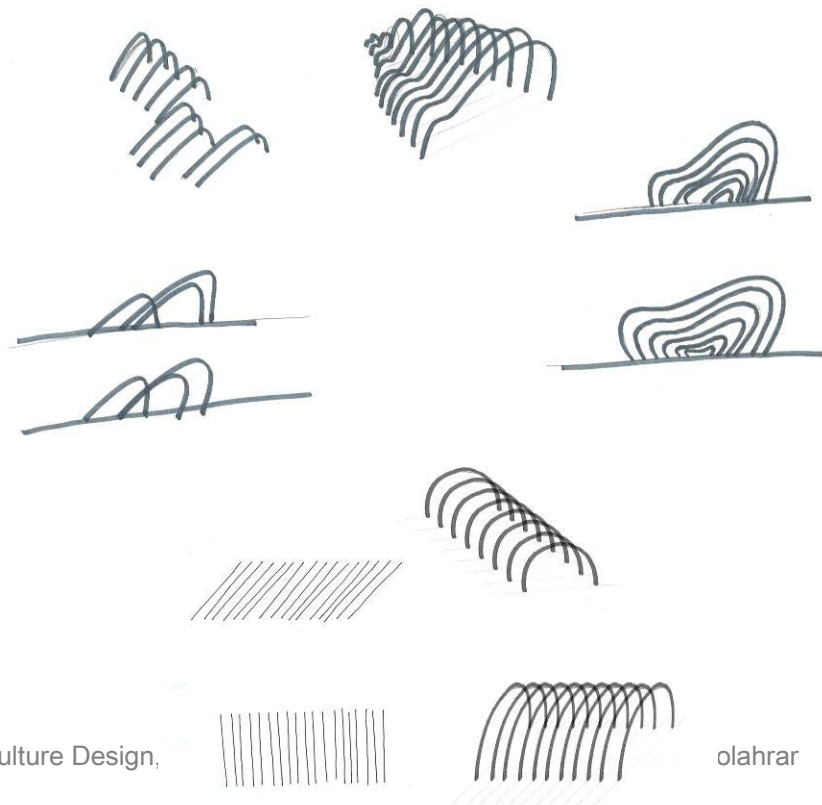
Then, the serious and challenging part in design process was started, which was finding the best answer to these questions:

- How can the Wall be made of modules and be able to be mass produced?
- How can the Wall contain play attitude?

It was the point that inspiring process launched by searching and watching various projects -- architecture and Landscape Architecture projects, playground products, furniture and many other stuff which were designed for children.

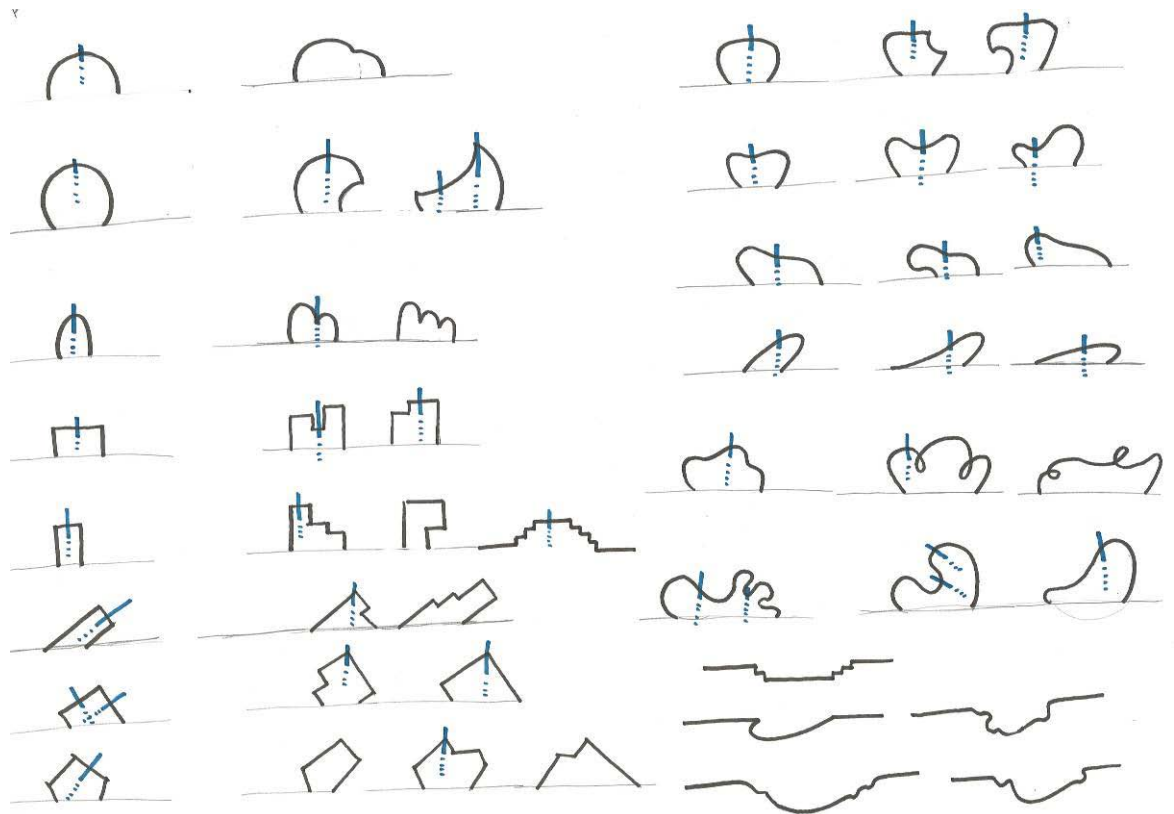
Sliced space concept

The answer to the questions I got through my investigations made a big progress in project's concept development. I call the idea, "sliced space". What does it mean? There is a geometric basic theory that a line is made of several dots and surface is made of several lines lying together, and a whole volume is made of repetition of an element such as line or plane. So the space that I want to create can follow this rule and considered as a large volume it can be shaped with the slices of the whole space. It was the main philosophy I followed through the project up to the end.



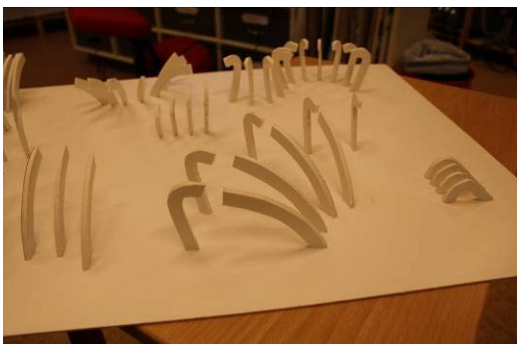
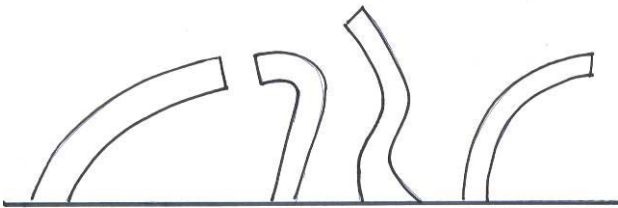
Trying different shapes

Then, it was the time to launch the practical part of the project, and, with concentrating on the main philosophy I was looking for the design output by sketching, making models and using computer applications. First, I made sketches of various possible forms of a slice would create a room, after that I cut all of them in to half to make the slice even simpler.



Next, it was time to make models with different shaped pieces to see the strengths and weaknesses of each of them in creating space.

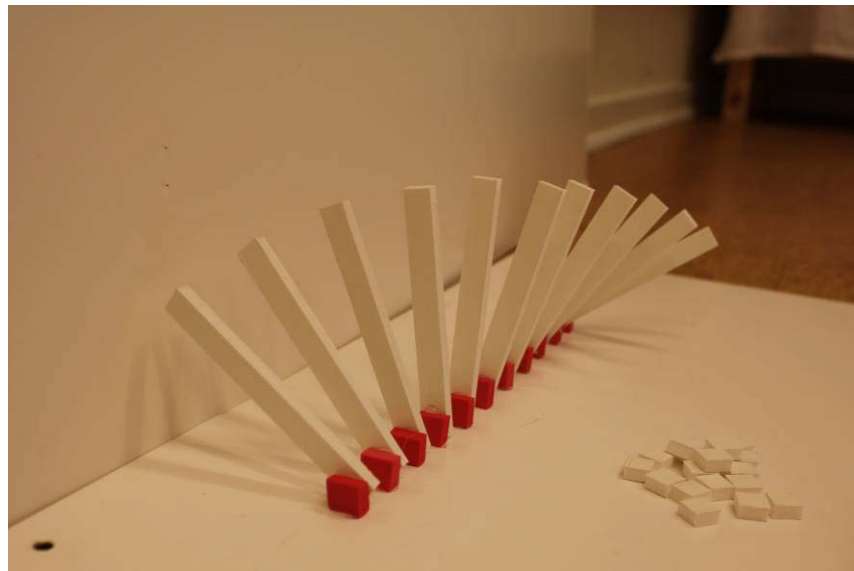
There were pieces in four forms which were tried in creating various spaces, based on different plans, parallel to thinking about the shape and form of the piece, the function and play attitude were concerned as well.



I was seeking a simple form for the element which also had to be attractive to play with, and proper enough to bring a good diversity of space creation for the playground design. Since I used my knowledge I had learned through my education in Child Culture Design, there were many concerns about the play value for the design, which I kept always in my mind. According to this, designing an obvious play tool wasn't my goal; I just tried to bring an element to the play grounds which contains opportunities for children to play with open-ended play space and test playing with space around them.

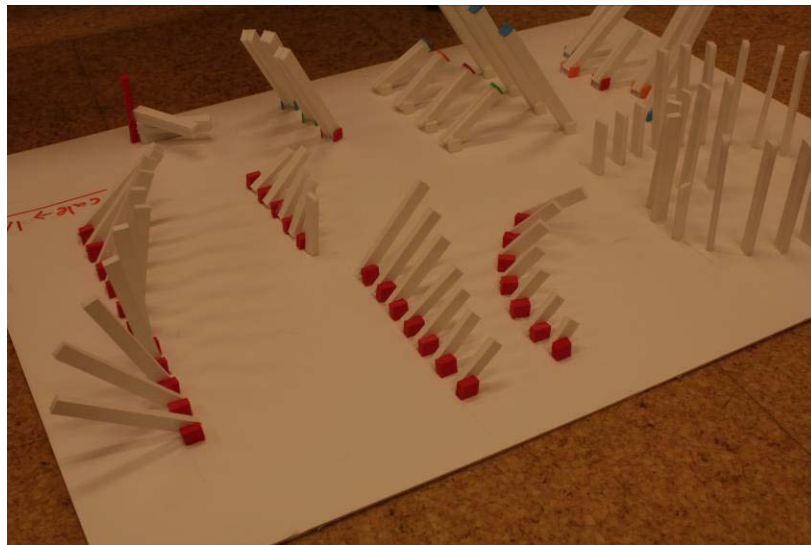
Deciding the stick's shape

After trying several shapes and analysing their characteristics, I found the simplest the best and closer to my ambitions; it was the linear shaped one. The linear shaped piece had more strengths to continue working with, because, first it was more potential to be used in different ways, second, it contained less restrictions in space creating, third, there were more play functions achieved comparing to the curved shaped pieces and finally it holds open identity more than others.

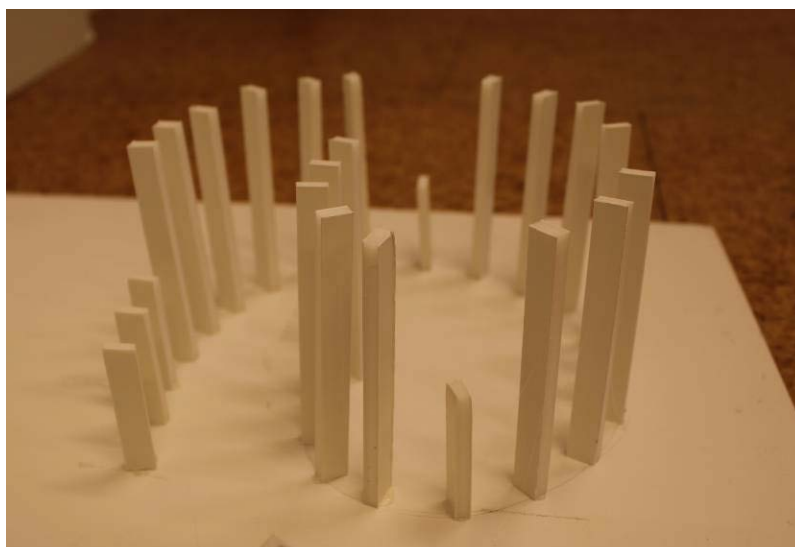


Evaluating functions

Getting deeper in the linear form concept made me learn that, simpler the form is, more difficult it is to figure out the details and other design qualities and functionality of the piece as well.



It was time to be more precise about the design qualities such as: size, color, material, number of modules and etc. There was a new challenge on the way; by making models I was examining the stick in different lengths, and different sizes related to stick's end shape like square or rectangle. So far, I found out as long as I have no clear defined function for the stick it is impossible to move forward in details of the design. On the other hand, to explore the linear form concept's strengths in creating space, it was required to try it with different functions based on various play and physical activities.

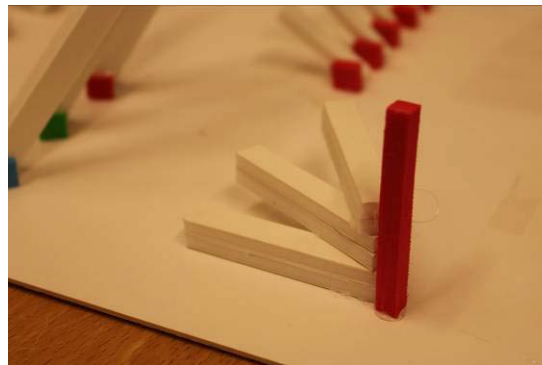


There were several functions based on spatial Stick's usage; they are mentioned below.

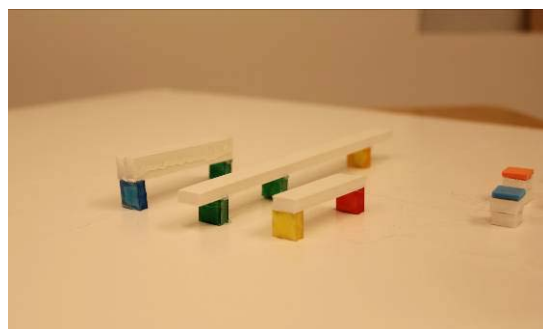
- Wall, by repeating the stick very simply there would be a wall created which can be playful by running through the hollows among the sticks or play other spatial plays such as hide and seek and so on.



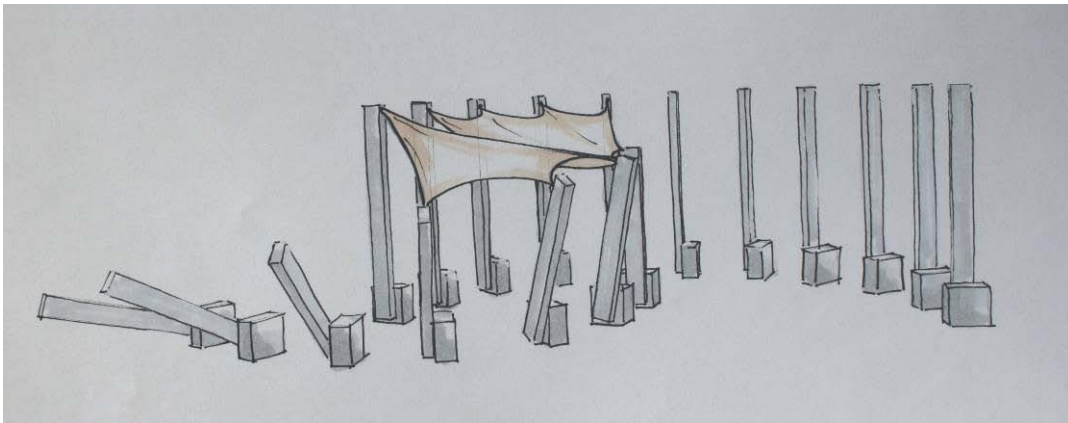
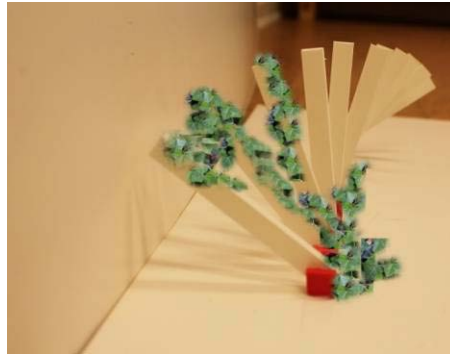
- Stairs, by laying several sticks in a rhythmic change in elevation there would be stairs to sit and hang over with friends as teenagers or jump upwards and downwards as younger kids.



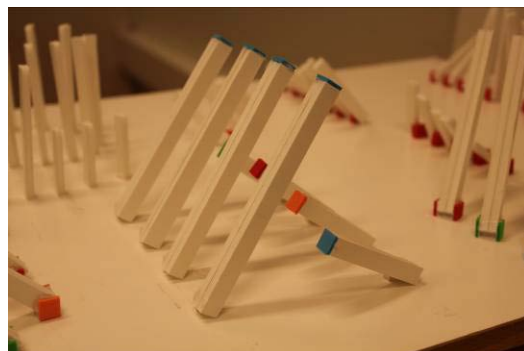
- Benches, benches can be considered as playful outdoor furniture, and sticks can be used as benches.



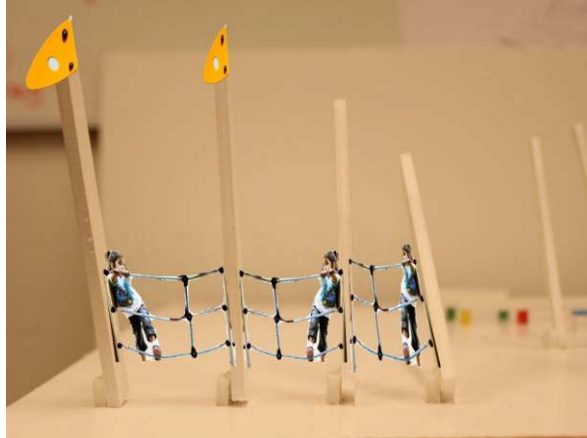
- Structure for park facilities like lights, shades, sign posts, frames for planting. This is an option for non-playful general functions which is related to outdoor play anyhow.



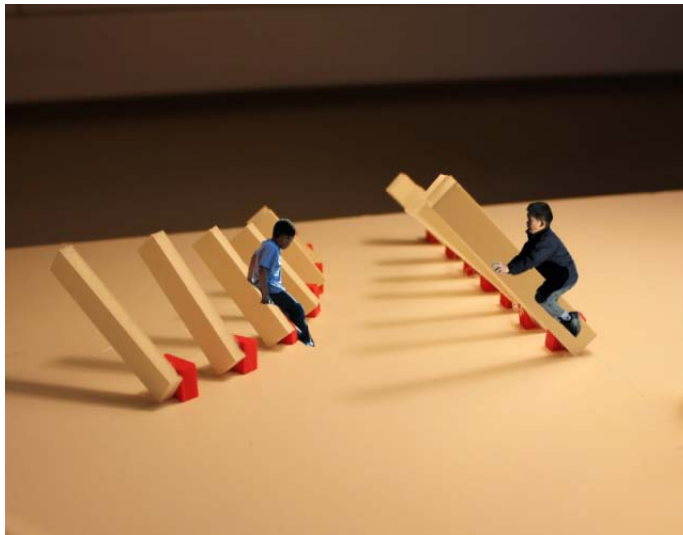
- Sandbox, in a very simple way they can be used to create sandboxes in different sizes and shapes.
- Tunnel, with two rows of bending sticks there would be a space created in between which is called tunnel space and it is fun to run through and cosy to sit inside.



- Structure for KOMPAN products, some of the products such as Story Makers and Moments for toddlers – which is based on plates -- can be attached to the sticks; the other products such as elements which is for older kids -- includes bars, ropes and handles for climbing, hanging and other plays – also can be used on the sticks' body.



- Climbing spatial frame, by assembling the sticks in an open style it can be an open-ended spatial play structure which holds several play activities such as, climbing, swinging, hanging and many children-made plays.



- Room for group activities, as it has the strong space creating potential it makes suitable room in playgrounds for teen agers to hang out with friends or who want to be outdoors in groups.

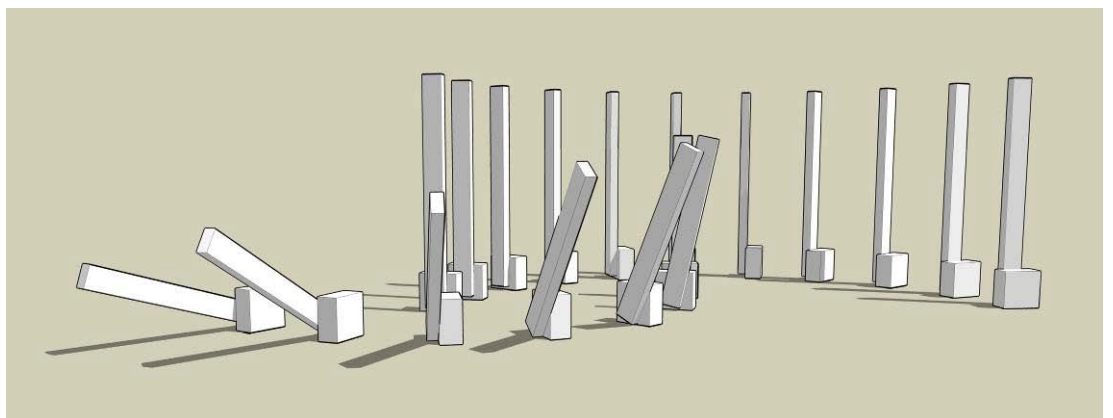
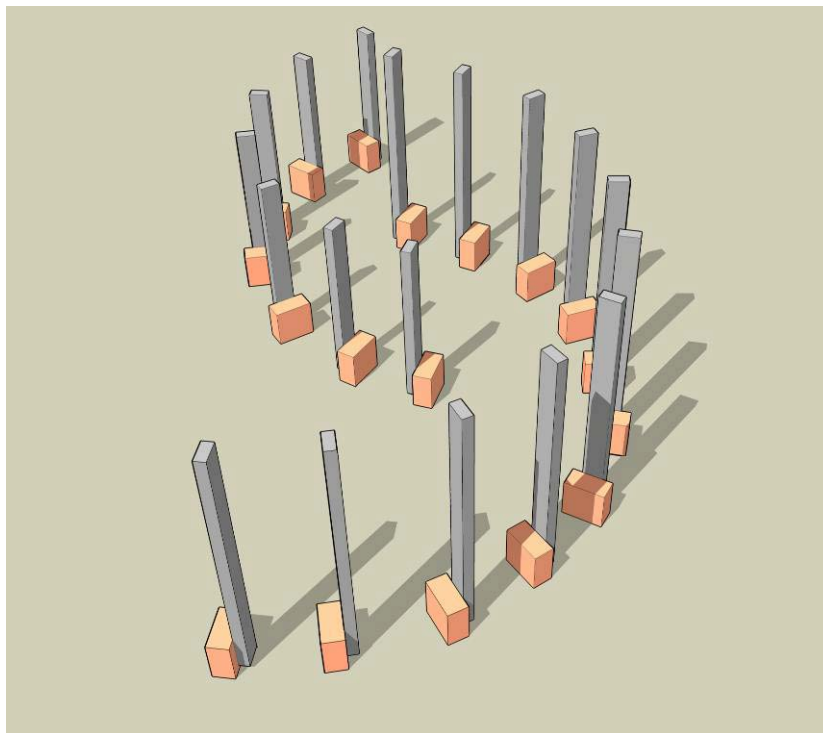


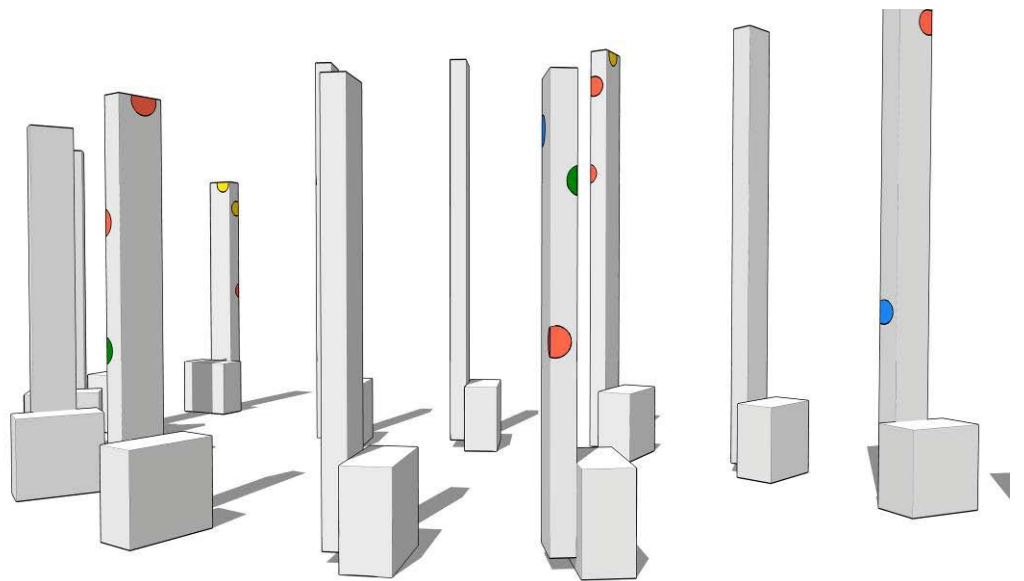
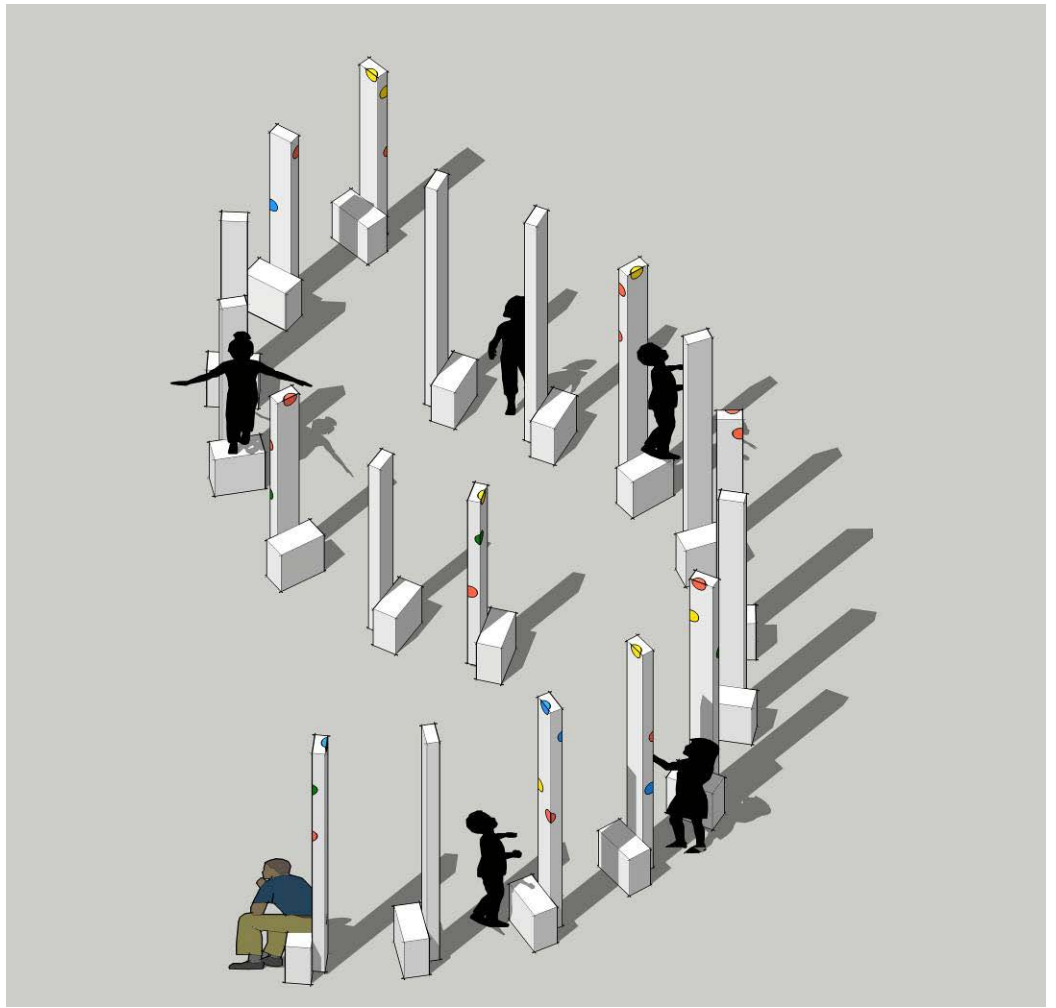
- Stage, it is a good solution for creating specific arenas for different performances; it would be particularly very interesting for teen aged girls.
- ICON, electronic playground, as a space creator element it can be considered a good choice for a play activity which is based on action in space through time. ICON is a new series of outdoor electronic play equipment that promotes modern play by combining interactive computer games and outdoor fun.(from KOMPAN's ICON catalogue)



Selected functions

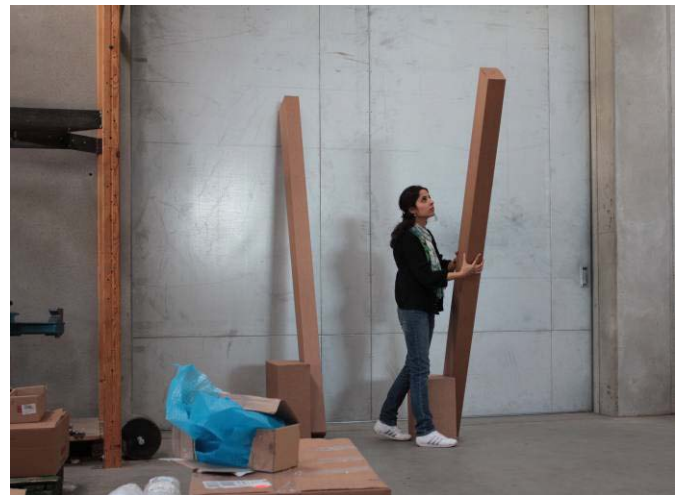
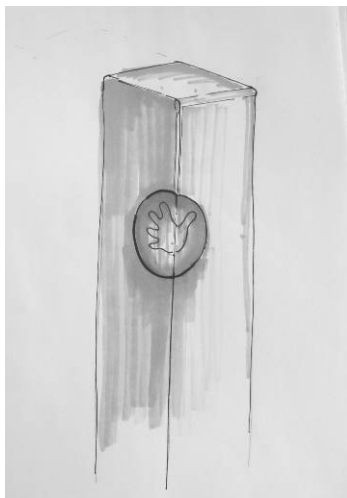
Then by analysing the functions as well as having consultation with KOMPAN about each of the functions, the project was developing to reach the next step by choosing a precise function for the stick. The result of function assessment was a combination of two functions, which could work together or separately: wall and ICON. Why wall and why ICON? Looking back to the project's aim about the spatial concept was the main reason in choosing these two functions. Both wall and ICON have very strong relation with space concept. The other point was combination of wall and ICON, it means that sticks can be arranged in a way to create wall and the wall has the potential to be the body for installing ICON system.

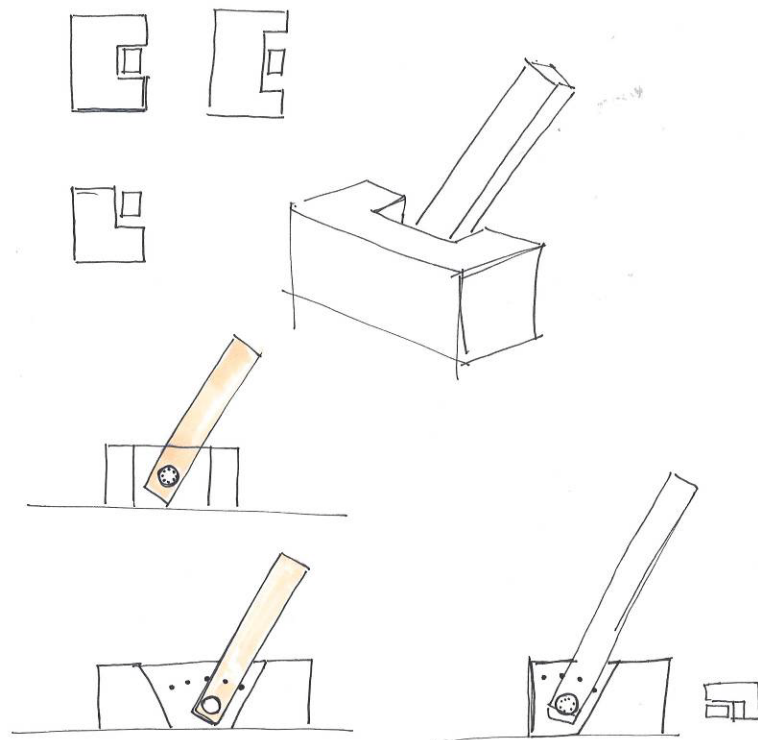
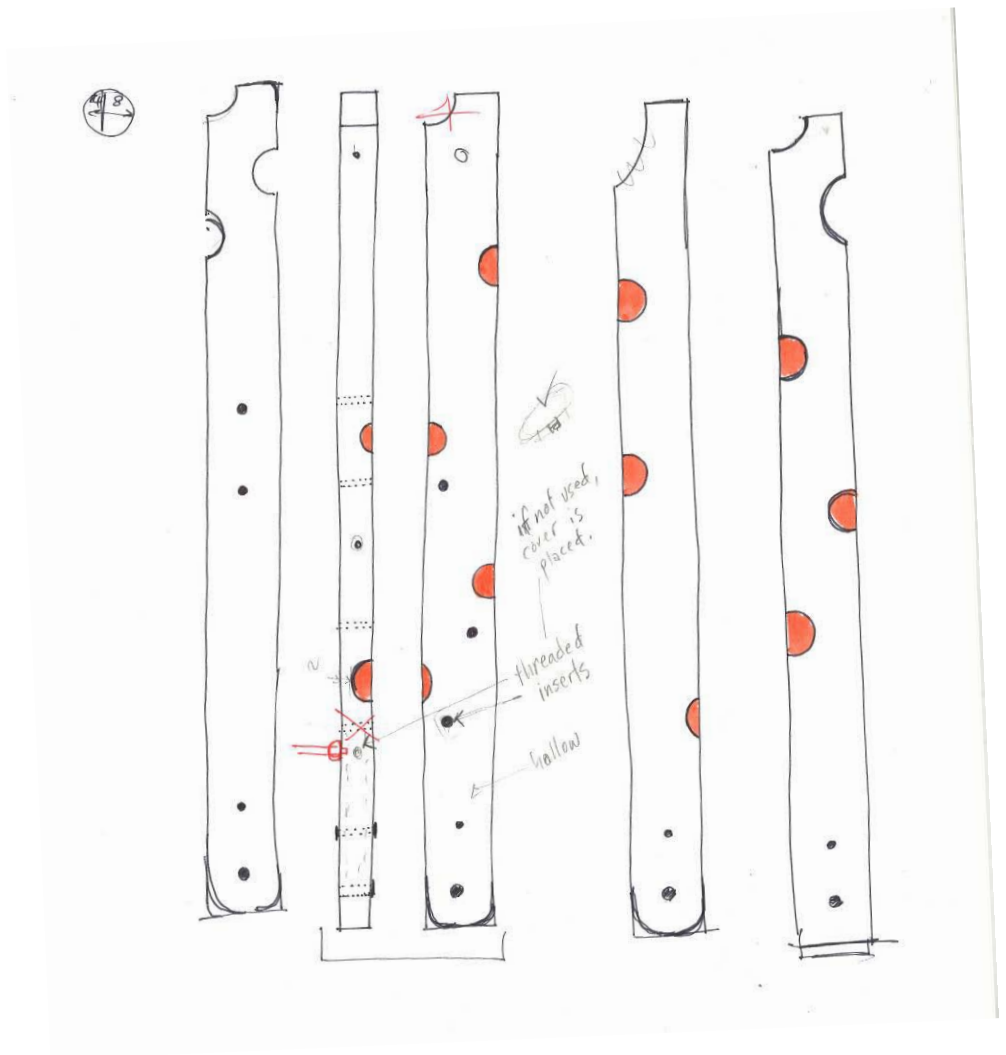




Final design decisions

Then, it was the final stage in design course; it was the time to test the piece for several items, to get closer and closer to the exact shape and all details. The other important task was examining the designed piece according to both space creativity and play, to find out different capacities of the product in final use in the playground. After all, there were two main results achieved for this project: the modular piece and the spatial function for the module in playground.





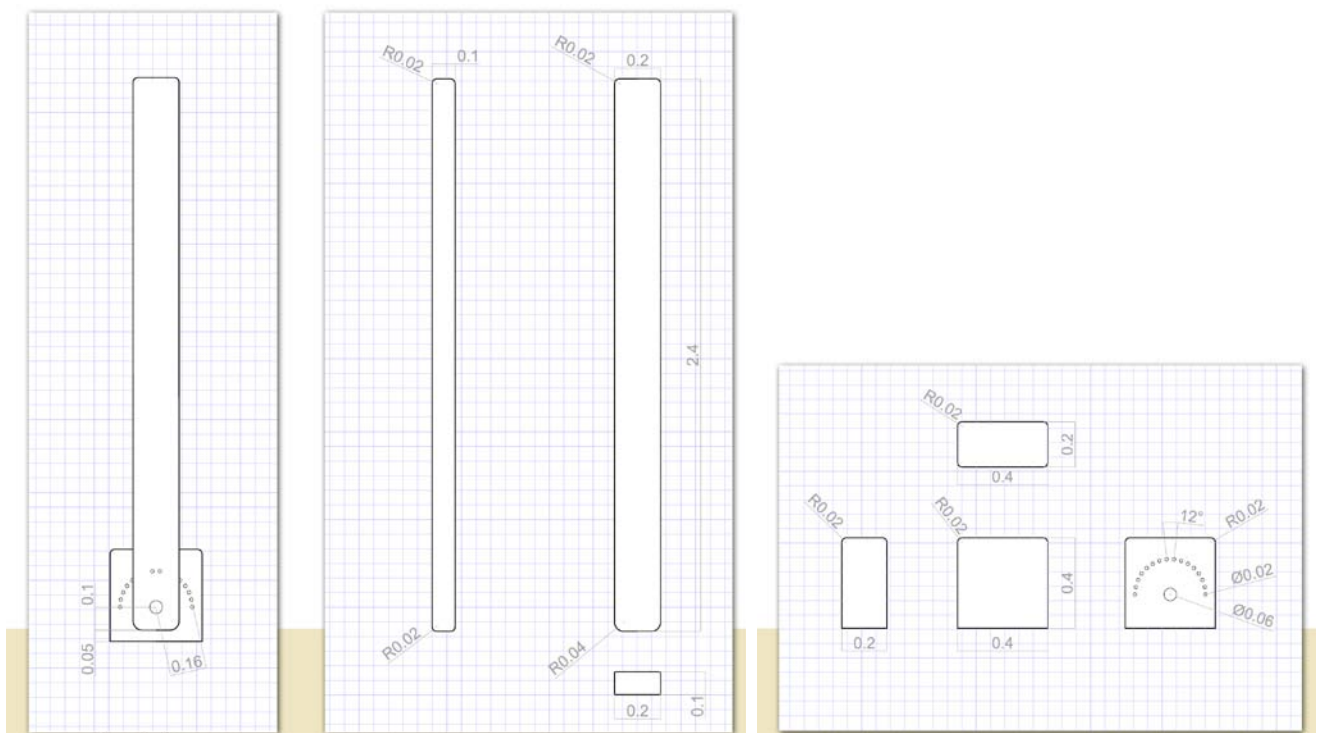
First result

The module's ultimate design;

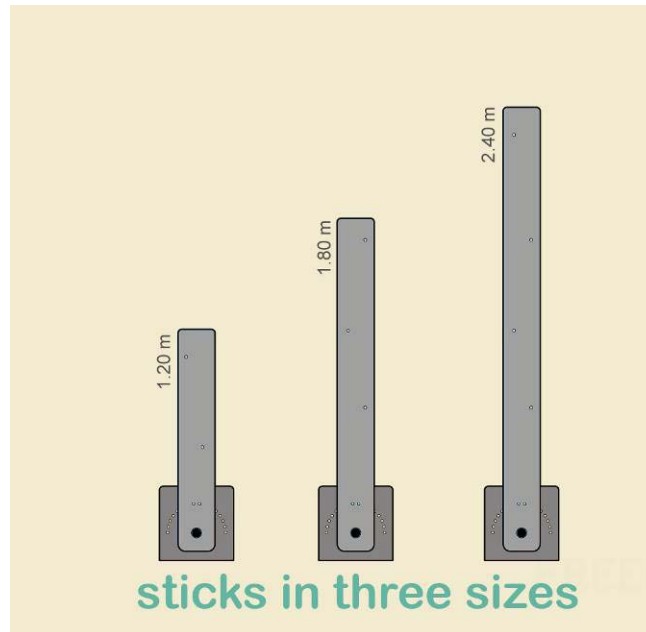
In this stage which can be considered as the last stage, there were many clues and inspirations and study results and analyses already done and available to support the product design. To get the final product, the time was devoted to sketching, model making and discussions with several people with different opinions.

There were conclusive concerns for two parts of the Freedom Play Stick:

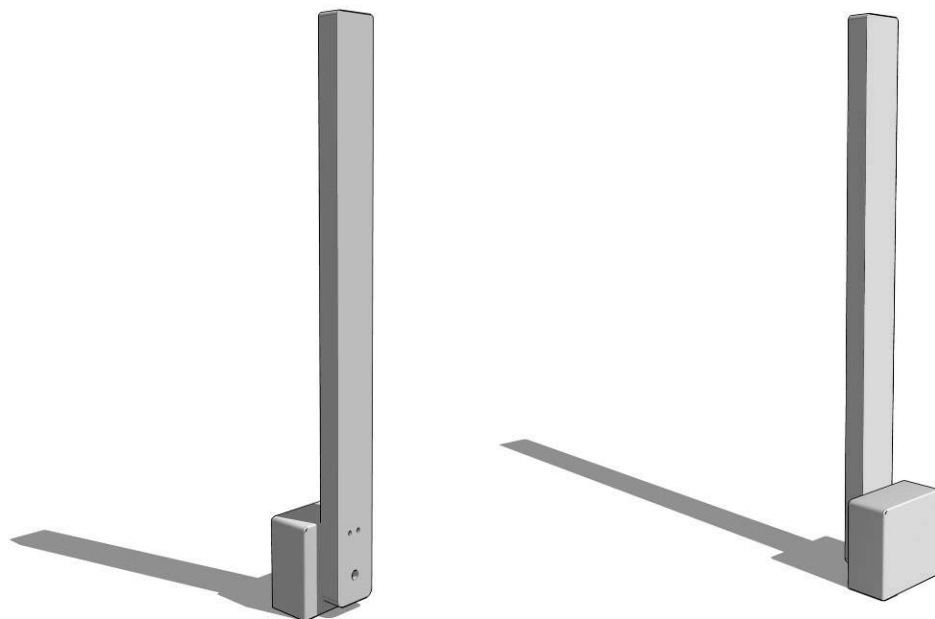
Size; how big they should be each in 3 dimensions. According to proportion issue how the size of each of them should be related to the other part.



The decision about the variety of stick sizes was made, so Freedom Play Sticks would be in three sizes which is based on stick's length variety: small (1.20 meter), medium (1.80 meter) and large (2.40 meter).



Form; among several shapes for the block I chose the square shape which concerning to form values has a very stable attitude and according to aesthetic concerns it is considered as a spice added to the stick, so it should be seen in an amount of a spice not more. Stick's end shape was tested with different qualities according to the base rectangle's proportions and finally according to play and structural values, and the rectangle size was decided to be 0.2x0.1 m². Comparing two shapes, square and rectangle, as a stick's end shape for the rectangle has a kind of direction and more variation in



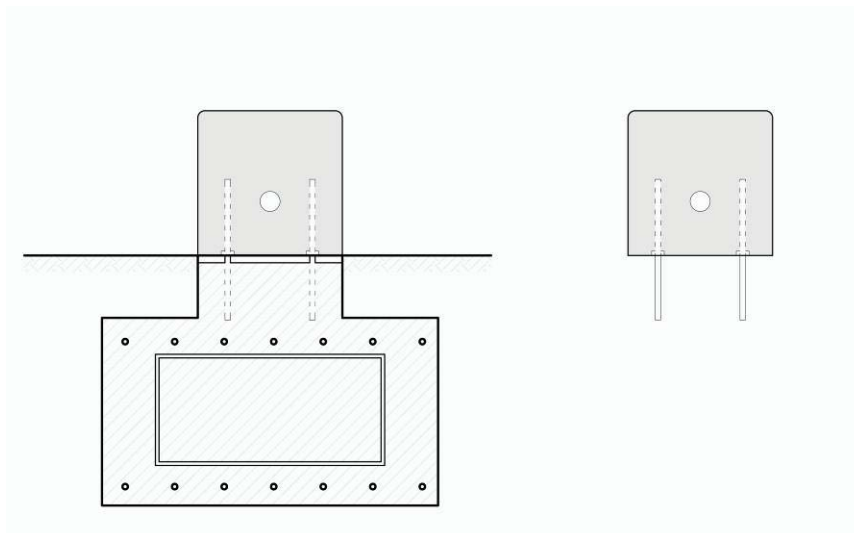
different feeling on different edges but square is a neutral shape according to direction and it causes less move attraction. The other alternative for the stick form was the same body with some curves on top end, then comparing to the simple stick it was not that satisfying when several sticks would be combined in space creating.

Material; Concrete is the major material that has been considered because of these benefits:

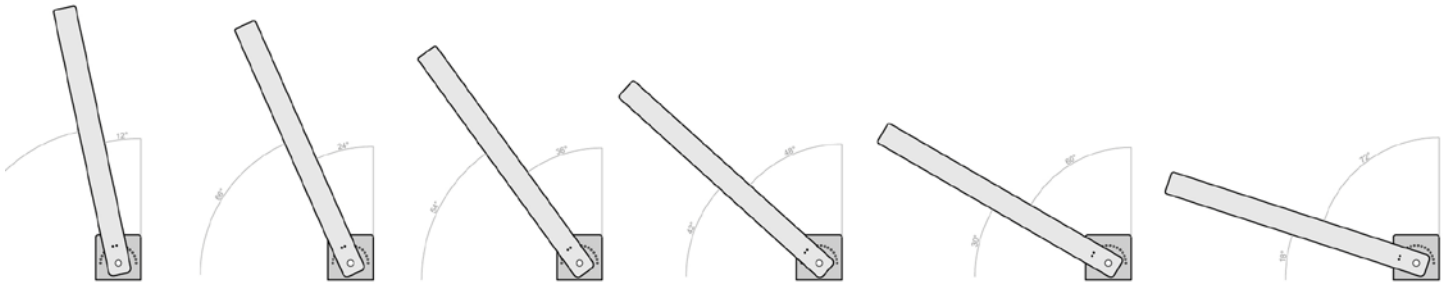
- concrete is an available material in most countries, so the modules can be built by local companies that produce not too special concrete productions, such as rail sleeper producers, and a big reduction in shipment will be achieved. (light weight forms could be sent)
- it is a very flexible material, easy to create texture, forms and shapes.
- colored concrete is a good possibility to avoid gray concrete in some cases.
- strong when reinforced (can be hollow and get lighter in weight)
- easy to mould in connection points (threaded anchors)

But there are other material possibilities which can be considered as well, for example, the wood or rotation moulded plastic can be used for the stick part.

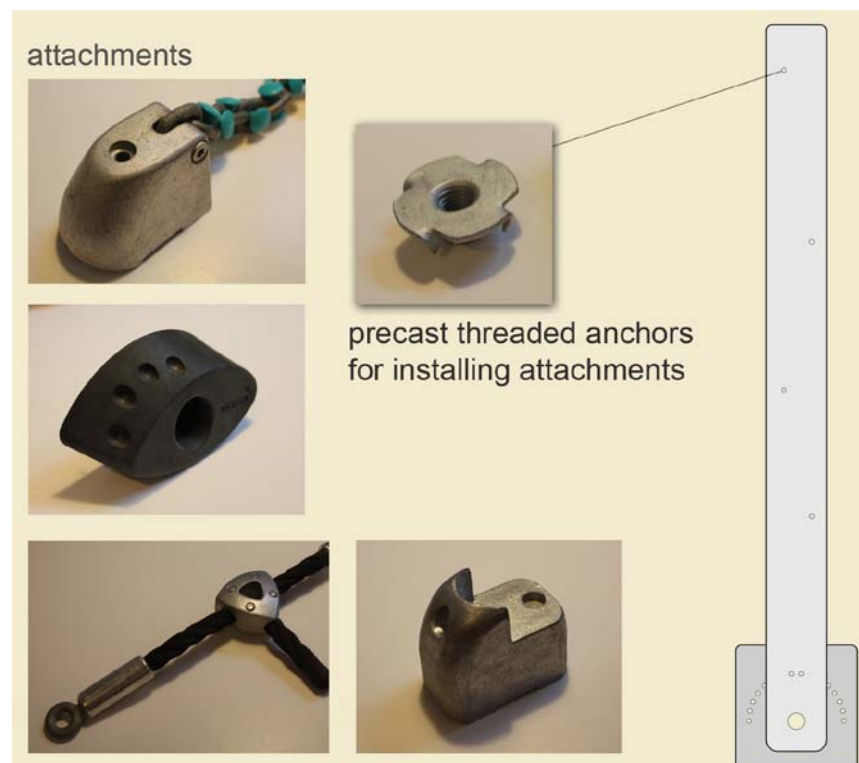
Installing on the ground; the square block is the part which has precast armatures that let it be connected to the foundation in the installation process, then the stick would be joined to the fixed block.



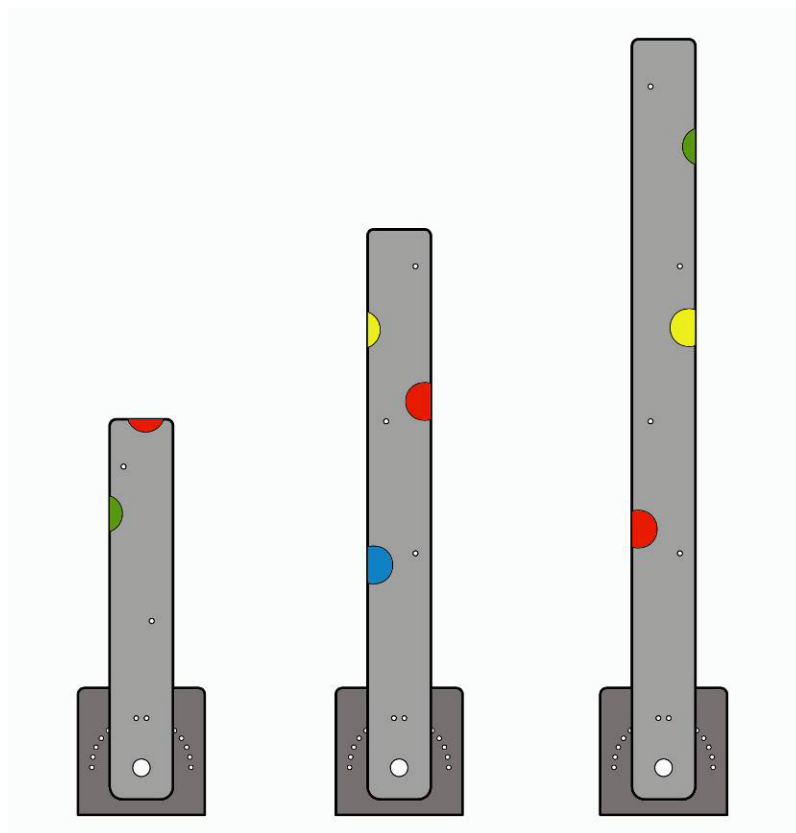
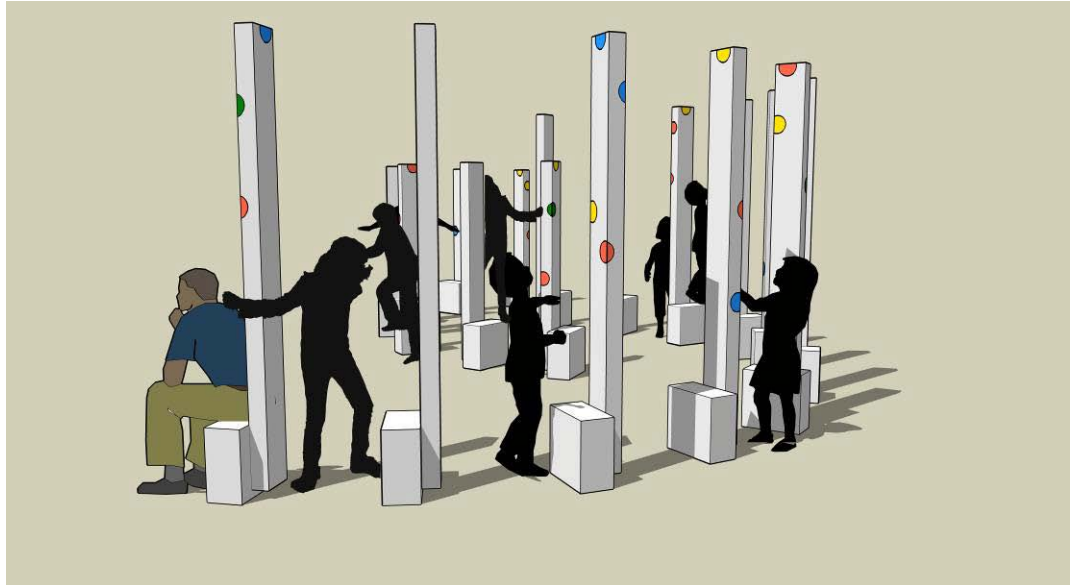
Angular flexible system; the two parts are joined together with a main axel which is also the core that the stick can rotate around it and the stick's angular position would be fixed with locking bolts that connect the stick to the block through holes on the block and stick. This flexibility lets the stick to be installed in 8 different angles, so with one Freedom Play Stick several effects would be achieved.



Attachments; in order to make the possibility to add several different play tools like bars, nodes or ropes to the sticks, there are some threaded anchors have been casted on the sticks.



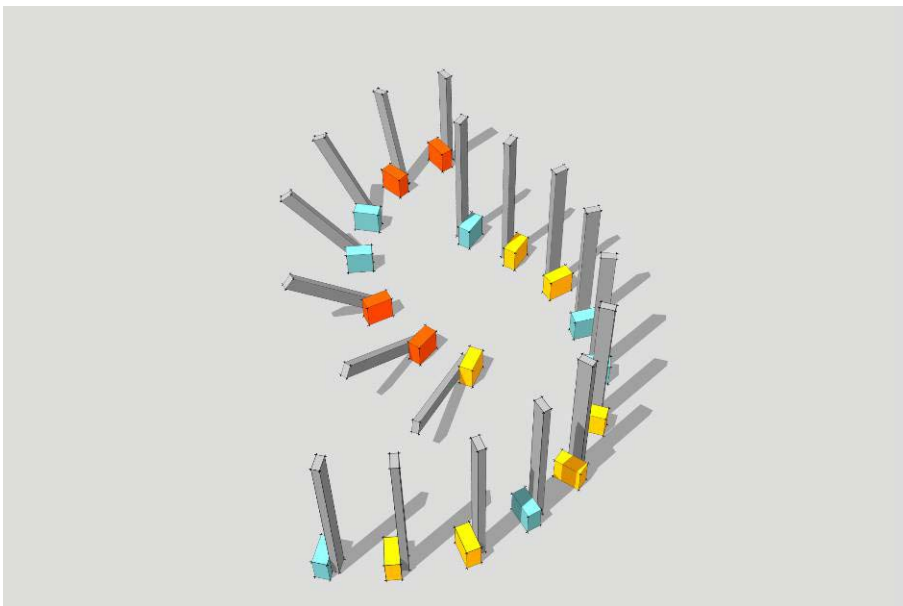
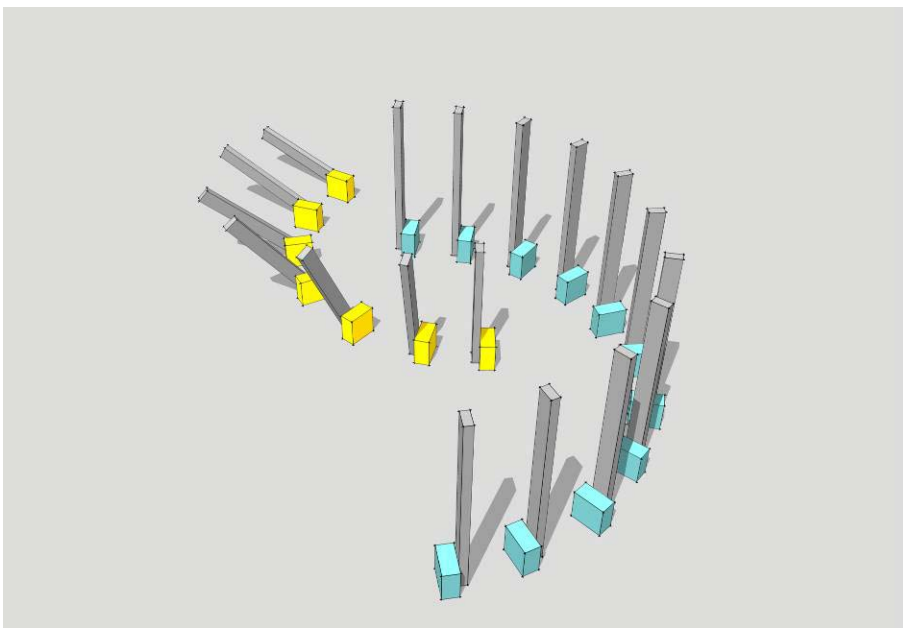
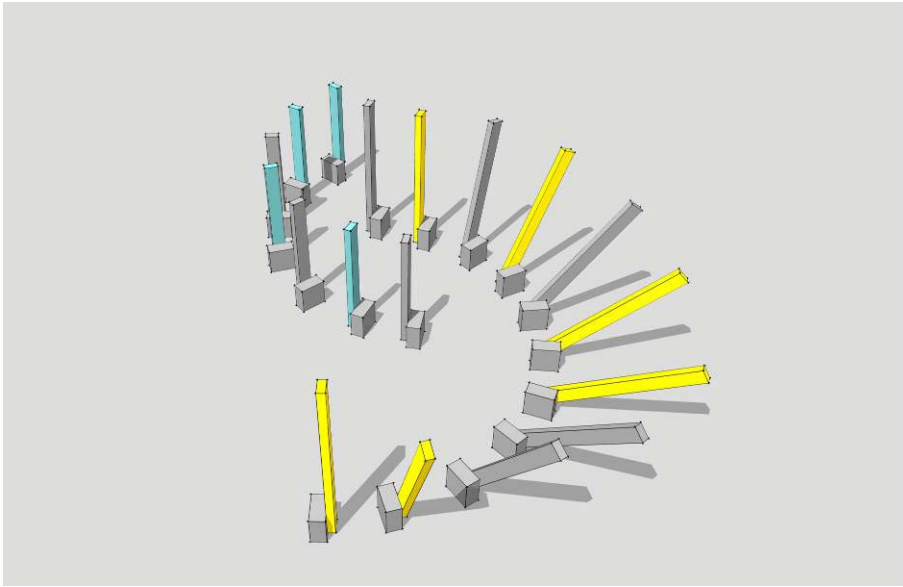
ICON; adding ICON nodes and whole electronic system can be managed simply on the sticks. Wire pipes and the access holes have been casted in concrete during stick production.



Second result

After fulfilling the modular piece's design, now the stick was ready for creating play space, in other words, it was ready to be used for the project's goal. In this part the angular flexibility of the sticks was the strongest character of the sticks which was so helpful in building a huge variety of spaces. In order to show this great achievement, I tried a set of sticks in two sizes (medium and large), which were installed with a unique plan on the ground. The result was amazing to see how many different atmospheres were created with no change except changes in sticks' installing angles.





REFLECTIONS

Examination reflections

For presenting my project on the exam day, I prepared 3 printed posters and a slideshow to explain the whole process and the results of the project. After the presentation there were some issues for discussion:

- Safety issue; concerning to the falling height zone, it was mentioned that the sticks shouldn't stand closer than 1.5 meter to each other. Then there were answers for it; according to playground equipment safety issues, this sticks are functionally linked, so the falling height zone issue is no problem for the distance between sticks. When children are encouraged to climb of the sticks, or in low angle positions, a layer of rubber surface would be needed -- the rubber layer can be glued on site.

- Activities and functions; It is a genius idea, because it can function from an abstract simple play space to more. It can function as an abstract sculpture that defines space, or just can be a structure for play equipments like ropes and so on, or can be an attractive body for an interactive gaming playground.

- Child Culture Design and Freedom Play Sticks; during the whole way in this project, I was wearing Child Culture Design glasses. There were so many concerns to children's play culture especially in outdoor spaces; but the most outstanding characteristic of the project was its fabulous open-endedness, and it is a big subject in children's play. Freedom Play Sticks is a real open-ended product both for children – the end user – and for Landscape Architects who build play spaces for children. These sticks bring the taste of playing under dining table at indoors to the playground; children will build new dreams of playing in playground.

Future developments

How the space creator module can be developed in future?

There are several items which can be considered in future developments, such as:

- in this project, the effort has been more on design concept than the technical issues, but for the next stage in product development, many practical issues like materials, structure, installation, production and engineering parts should be well considered.
- all other mentioned functions for building play space can be developed the in same way as it was done for wall and ICON, then there would be more options for play sticks which can produce a complete play product series.
- for the angular flexibility concept, it needs more engineering concerns to find better and more practical solutions.

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