THE ANACONDA DRIBBLE

An Illustrated Essay

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ABSTRACT

The anaconda dribble is a pavilion that integrates design, performance and entertainment into one single structure. However, the main essence of the anaconda dribble is not the final structure but the concept behind it. It is an instance/example of modular architecture, constructed solely using a single component using the basic principle of interlocking. The single component can be referred to as 'the star component' and is inspired from playing cards and the art of cardistry. The star component was evolved from three playing cards interlocked with one another by making slits on them to eventually make a triangulated component. The extreme stability of the component allowed us to choose it as the module for the construction of the pavilion. Its ease of construction and deconstruction as well as the light weight allows it to replicate the nomadic nature of circuses and is also the key element that makes it interactive for the spectators.

Fig 1. Small Scale Model to Test Reflective Sheets

UNDERSTANDING THE BRIEF

The brief urges us to explore the unique nomadic style of circus architecture. The main key element of a circus is the performance. We were expected to create a container for the performance which in itself enables to create an incredible spectacle. Safety was given special importance in the unit which was taken into account while making the final structure. These key elements were incorporated into the final pavilion. The structure on the whole represents a house of cards with its form inspired from various acts of cardistry. The metaphoric instability of a house of cards adds the elements of risk, danger and thrill as is experienced by the audience of the circus. The simplicity of the construction of the pavilion allows it to be constructed by anyone and hence increases scope for audience interaction.

Fig 2. 1:1 Model built by spectators as a part of experimentation

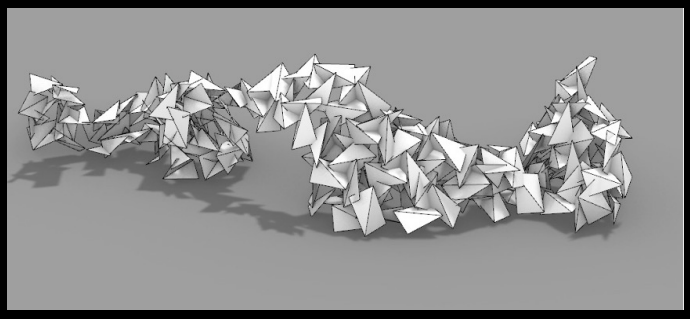


Fig 3. Initial Design ideation of the form-Rhino Model

Fig 4. Star component made using actual playing cards

Hence, the performance does not take place within the anaconda dribble but it is in itself the performance. The aspect of safety was insured by the carefully engineered mechanism of interlocking used throughout. We studied the shapes created by different forms of interlocking and how they carried load. The easy assembly-disassembly process also helps incorporate nomadic styled architecture into our design.

CONSTRUCTION

After settling on the basic idea of making the structure using/inspired from playing cards, we began structural experimentation on a smaller scale. The main prototypes created were various modular components and joints using playing cards and a playing card inspired wave wherein the playing cards were symbolically represented using wooden frames. After deliberating we decided to go ahead with the idea of making a structure solely from playing cards. In order to do this, multiple experimentation using various modular component was performed after which it was concluded that the star component was not only the most stable, but it also provided the most scope to create a curved and fluid form as desired. After the star component was finalised, we began exploring different possibilities of forms that could be created. In doing this we concluded that these components easily connect to form the structure and also are capable of producing a variety of forms.

Fig 5. Construction In progress of 1:1 model

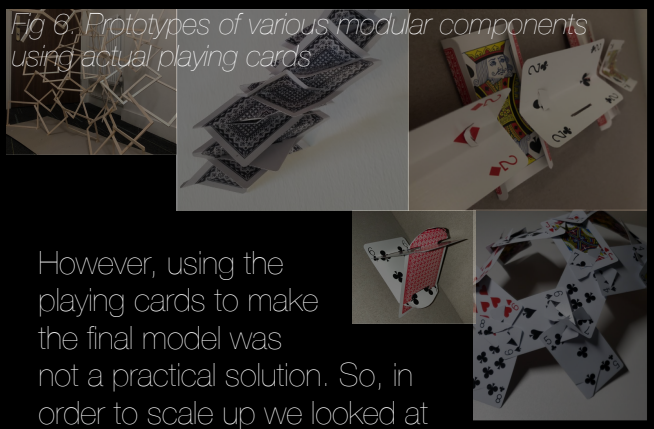


Fig 6. Prototypes of various modular components using actual playing cards

However, using the playing cards to make the final model was not a practical solution. So, in order to scale up we looked at alternative materials to make 'big playing cards'. Initial experimentation with corrugated cardboard failed as it tore easily at the folds. This led us to using corrugated polypropylene sheets which worked well. The issue of the fold was resolved using a v-cut for the folds. However, this led to another issue of stabilising the angle of the fold which was resolved by making a special angle stabiliser with three angle settings. Once the component was stabilised, we began to put it together and developed various forms by interlocking the individual components. Further, for crowd experimentation, two groups of 6 people were asked to use these components to build a structure of their own and this experiment was successful. It was also decided to cover these components with reflective sheets as multiple reflections would make the structure more interesting.

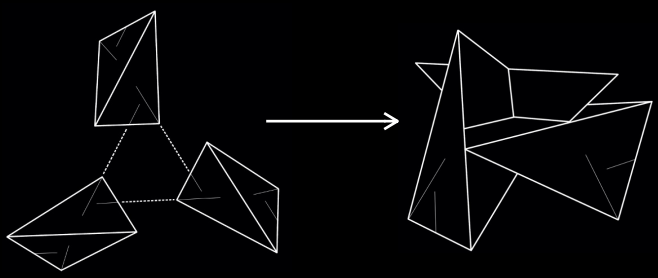


Fig 7.Process of making the Star Component

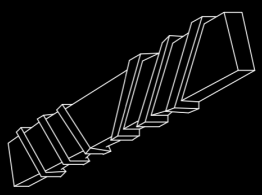


Fig 8. Angle Stabiliser Component

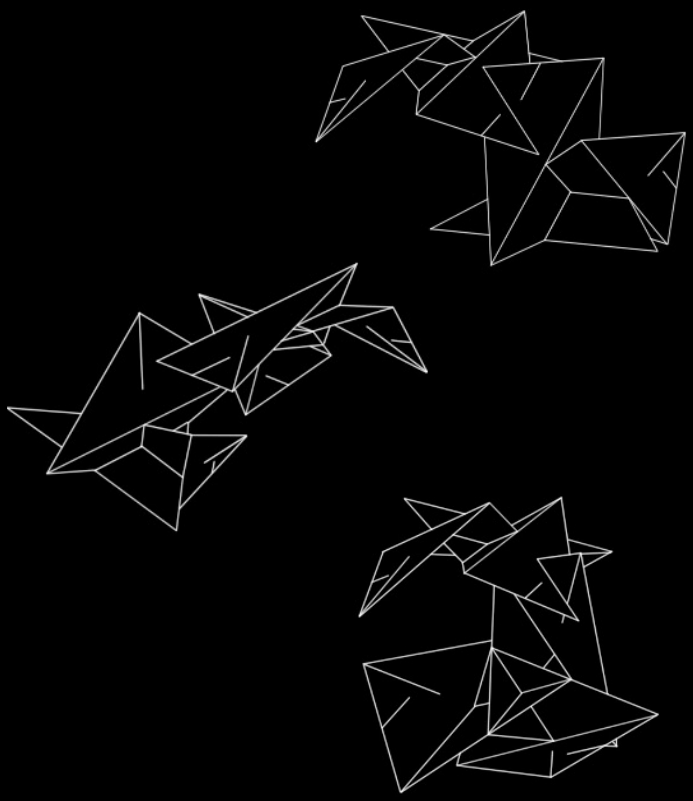


Fig 9. Studying different connections from the star components

FORM FINDING

A major reason for choosing the star component as the final modular component was its ability to produce fluid and curved forms, which is what we aimed to have in our final form. During the initial ideation, we aimed to replicate the form of a crashing wave. After modelling this idea, it was realised that it made the pavilion look like an installation or sculpture while we desired a more enclosed structure as well as one with a more complex and interesting façade. To achieve this, we started looking at various acts of cardistry like 'the anaconda dribble', and various kinds of 'cardistry fanning'. We conceptualised a structure around a vortex with an aim to integrate a curved roof. Also inspired by our name we wanted to add a tail like extension and in the whole create a maze-like plan. We were inspired to create a spiralling form that was centred around a vortex.

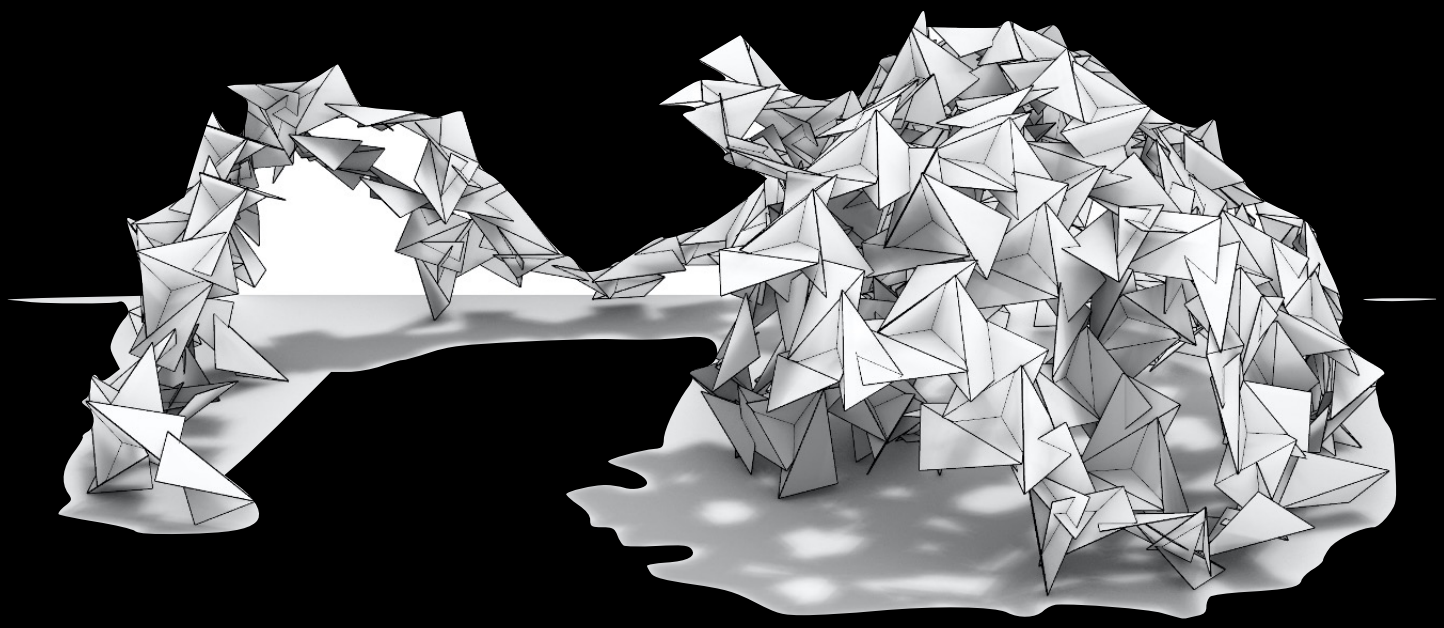


Fig 10. Rhino Model of the final form of the pavilion

FINAL DESIGN DESCRIPTION

The final structure is an apt example of modular architecture constructed from a triangulated component made from interlocked enlarged playing card representatives with its surfaces covered with silver reflective sheets. It consists of a dome relying on a vortex-like column. The structure has a tail that extends outwards in the form of an arch, creating an open area in the pavilion. The entrance to the dome is at a lower height than the rest of the dome which makes people bend to enter the structure, creating a distinction between the outside world and the world of the mirror dome that is somewhat detached from reality. The tail and the open area create a sort of 'transitional space' between these two worlds and build up anticipation as the person walks towards the dome. It must be noted that the roof of the dome has gaps in it. These gaps create unique patterns of light and shadow on the floor of the pavilion that are enhanced by the reflective panels. When building the pavilion, the vortex and the base of the dome are constructed first. Then, parts of the top of dome are put together on the ground and then attached to the vortex one at a time. The base of the tail is then added, which is followed by the top of the small arch. In order to stabilise the structure near the ground, single card sheets were used and interlocked with the star components at the base of the structure.

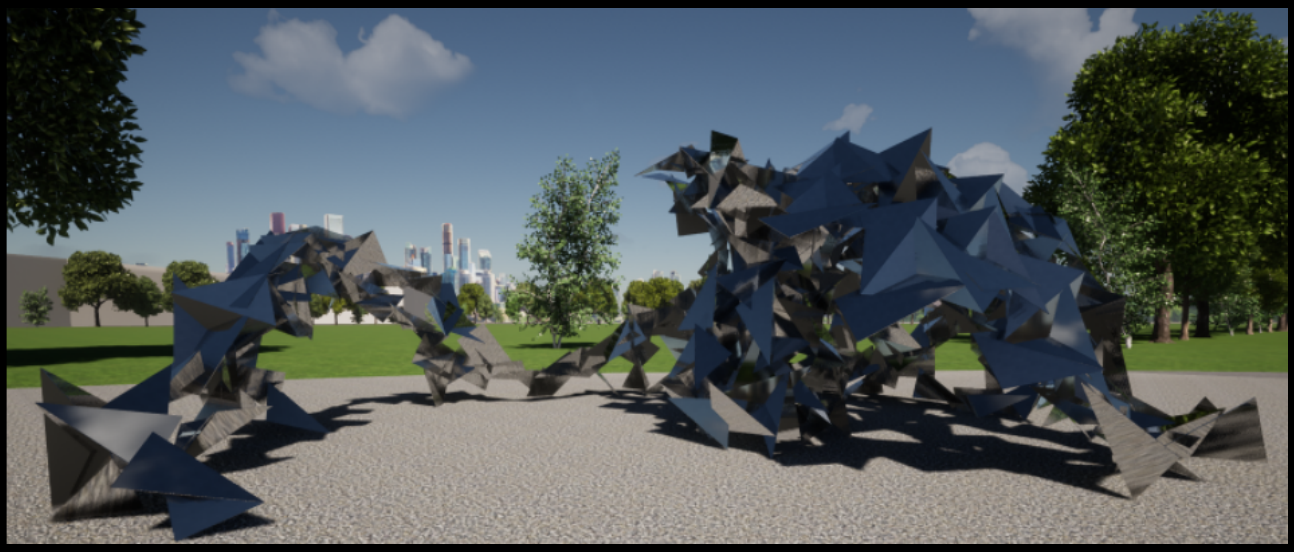


Fig 11. Render in the day of the final pavilion

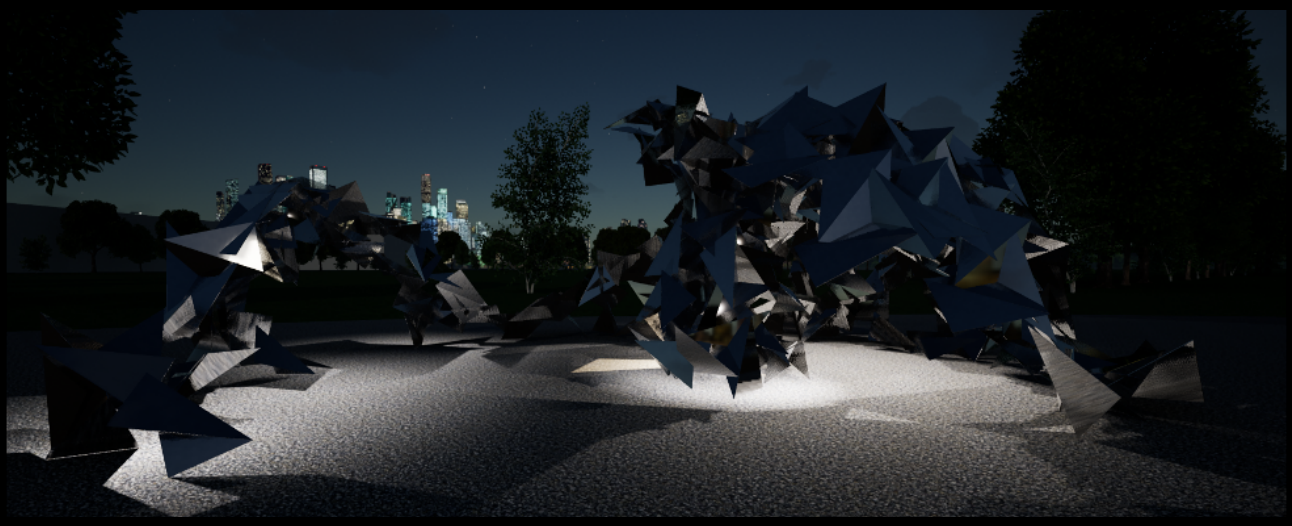


Fig 12. Render in the night of the final pavilion

THE INTERACTION

Interaction is an essence of the circus. In a circus people are often called upon to volunteer and be a part of the acts. We aimed to capture this essence through the anaconda dribble while also creating a sense of community and trust between the members of the audience. Once the ease of the construction of the pavilion using the star component as building blocks was established, we decided to integrate the audience as a part of the construction process and, hence incorporating interaction. This was deemed successful after a live experiment with people was conducted. To further the interaction and increase engagement with the pavilion and the concept of the circus, we decided to develop a game around the construction of the pavilion. A manual detailing the rules of the game was formulated and an algorithm involving the random drawing of playing cards was developed and tested.

Fig 13. Sara-Clara interacting with star components

Fig 14. Group 1 of live experiment interacting with pavilion

Fig 15. Group 2 of live experiment interacting with pavilion

SYMBOLIC SIGNIFICANCE

In order to integrate the circus in our design, we looked at various acts of a circus and were especially interested in the tension, suspense and excitement in the air as balancing acts were performed. These are associated with the feeling of almost falling and is the same as what one feels seeing or building a house of cards. This was captured by our pavilion through its interactive construction process and consequently by the game designed. The fact that the star component can be used to make numerous structures is symbolic of how a single pack of playing cards can be used to play multiple games. The use of playing cards was key due to the fact that they are lightweight, transportable and easy to assemble/disassemble. These aspects were kept in mind when corrugated polypropylene was chosen as the final material. The structure is widely influenced from acts of cardistry. Cardistry is all about fast moves and tricking the eye with speed. Through our structure, we wanted to capture such an act but one that lasts longer than just a few seconds for the people to experience and savour hence creating visual tension. The essence of our structure is an act of cards frozen in time. The basic concept of the pavilion resembles that of a travelling circus. This structure can be moved easily to different locations and assume a different form at each different location just like a travelling circus that has different acts customised for different locations.

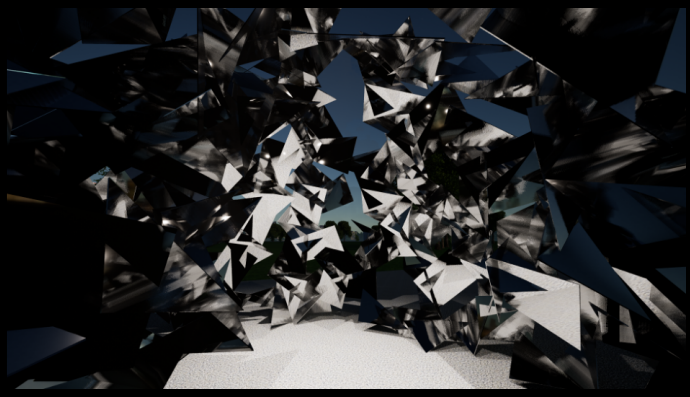
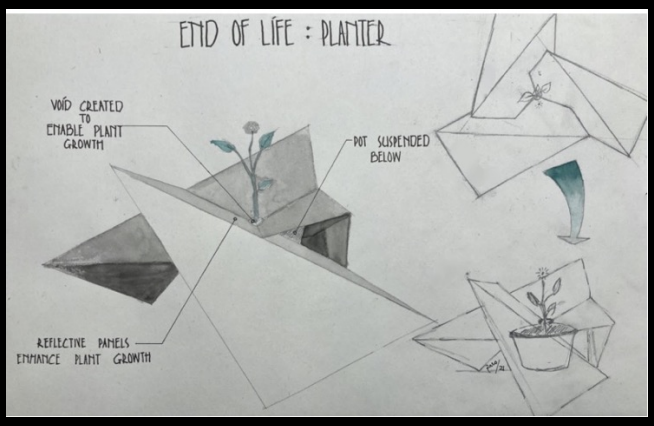


Fig 16. Render showing effect of reflective sheets at night

SUSTAINABILITY AND END OF LIFE

The pavilion was designed keeping sustainability in mind. The grade of corrugated polypropylene used is homopolymer polypropylene and is widely recyclable. The concept of the pavilion that allows it to be assembled and disassembled and take different forms at different locations involves the reuse of the same materials. In order to come up with a use for these materials even after the pavilion isn't in use, we developed an end of life use. Once the pieces are worn out, they will be taken by the spectators and can be recycled as planters. The reflective sheets on the planters would help the plants in the pot as well as the surrounding plants to grow better and faster.



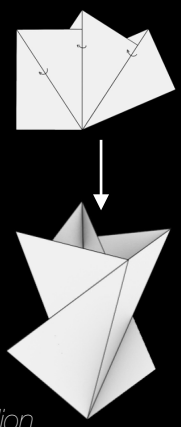


Fig 17. Conceptualisation and Ideation of End of Life for Pavilion

FIGURE CREDITS

Cover Page - Sara Motwani,Year I EAD
Fig.1 - Clara Obeid, Year I EAD
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Fig.4 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
Fig.5 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
Fig.6 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
Fig.7 - Bartosz Kurylek, Year I EAD
Fig.8 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
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Fig.13 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
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Fig.15 - Clara Obeid, Year I EAD; Sara Motwani,Year I EAD
Fig.16 - Bartosz Kurylek, Year I EAD; Sara Motwani,Year I EAD
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