

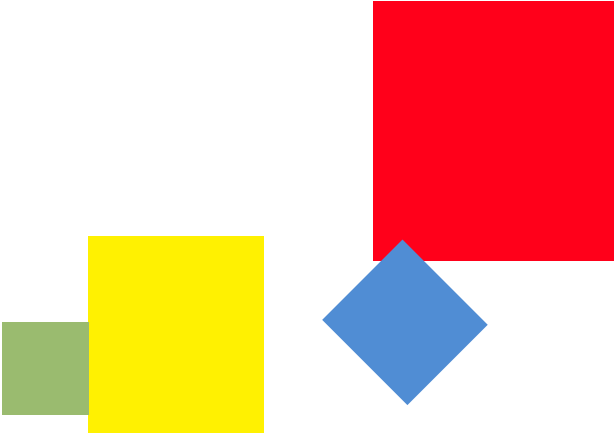
# TIME YOU ENJOYED WASTING WAS NOT TIME WASTED

MDES PROJECT: PRODUCT DESIGN

EXHIBITION AND TECHNICAL PACK

ELLIOT MACDONALD

# PUBLIC REALM



From the beginning of the project my aim has been to get adults to play more. Now is my chance to do this!

The outcome of this project is resolved to the point of use, i.e. the seesaws function and are sturdy enough to reassure users they won't break. The idea of an exhibition or Playday has been floating around for a while, a way to get real users feedback on a finished product. Organising a way for users to tell me what they think about the Seesaws should help justify them as a benefit to the creative workspace.

# JEFF WALDMAN

Jeff is an American based artists who installs swings in the public realm. His swing fame came around 2010 starting with a grant from the 'Awsome Foundation' to install 50 swings around L.A.

Even though we both have the same idea about spreading play, I think our origins differ. He is an artist and I, a Product deisgner. This I feel will benefit my project; the integration of open source will put my project in a more accessible area to all people. Having them available to simply print out from your local FabLab or chop shop is no different or easier than buying one online admittedly but I feel printing them locally marks a shift in how we trade. Bringing products to the users hands away from commercial industry means the user can feel more power over the ownership of the product and in turn what they can do with it.

The quote to the right is plucked from a TED talk he did in 2011 about his early experiences with the swing installations. It has been an inspiration for doing an exhibition or Playday.

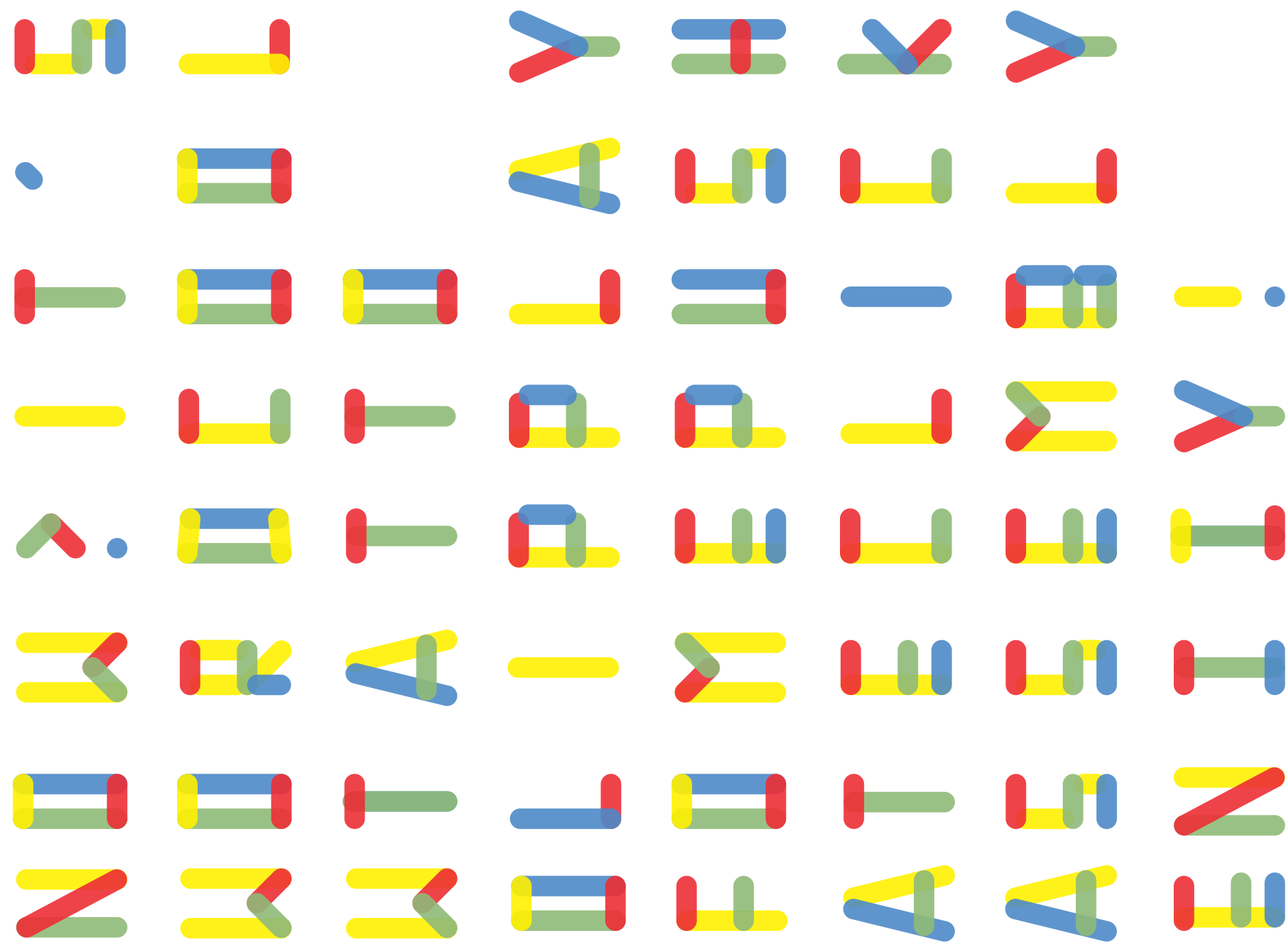
However, I think it highlights one major issue with the project – for adults to play on the seesaw they must first commit monetary investment. How do I entice adults? Let them know how fun the Seesaws can be before buying is crucial. To do this a small advertisement of sorts need to be created, a video or short film.

THE DIFFERENT REACTIONS WE GOT FROM PEOPLE WHO NEEDED PERSUASION TO GET ON IT WAS THE MOST REWARDING... THIS KID HE SWUNG ON IT FOR A WHILE AND HIS DAD WAS WATCHING. YOU COULD TELL HE HAD THIS ITCH IN THE BACK OF HIS BRAIN; IT WAS THAT WANT AND THAT NEED OF HIS INNER TEN YEAR OLD SAYING 'I WANT A PIECE OF THIS'. WE SAID TO HIM 'HEY DO YOU WANNA GET ON THE SWING?' HE HESITATED UNTIL HIS KID BEGGED HIM TO GET ON AND IT WAS GAME OVER, HE WANTED ON AND HE GOT ON. HE'S A LITTLE OVER WEIGHT AND HE SHUFFLES ONTO THE SWING AND AT THIS POINT I SAID TO HIM 'DO YOU WANT A PUSH?' HE HESITATES FOR A MOMENT BUT THE KID IN HIM SAYS 'YEA OK ALRIGHT'

I HAUL HIM BACK AND A SHOVE HIM.

AND THE SECOND I PUSH HIM OFF, HE SQUEALS SOMEWHERE BETWEEN PUPPY AND 13-YEAR-OLD GIRL.

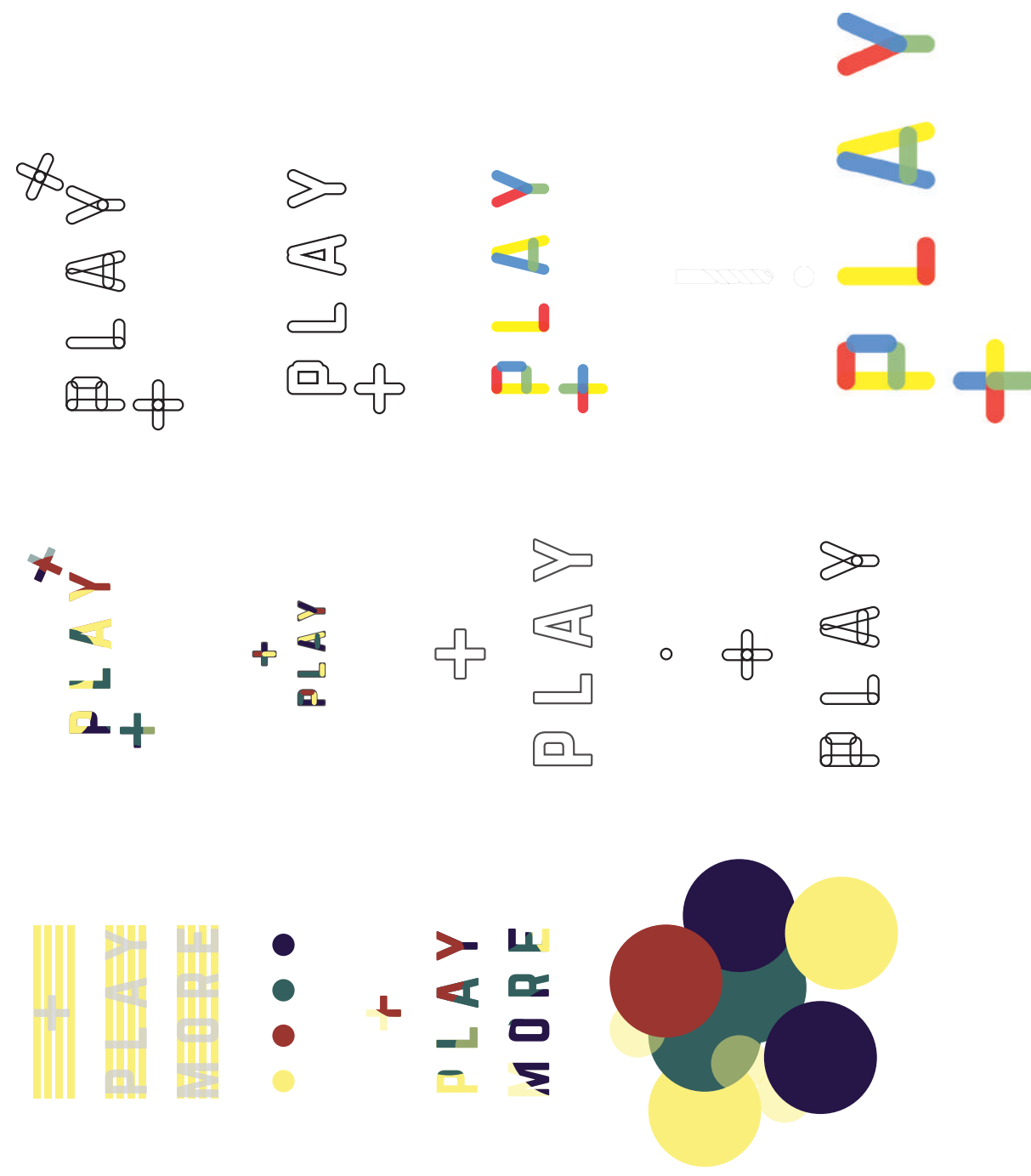
(JEFF WALDMAN, 2011)

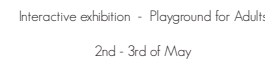
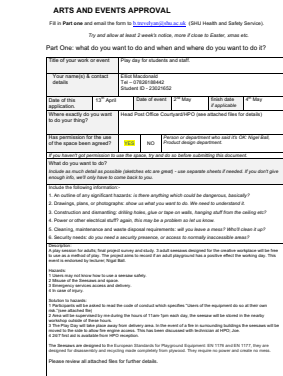


## TYPOGRAPHY AND LOGO

For this project, the graphics were particularly important as I knew they would have to advertise the Playday exhibition.

Therefore a lot of time went into illustrating a typeface that is bespoke. I designed a font that reflects the manufacture of the product. Using a 10mm circle as the base for the font and a grid system the letters are blocky and bold which should represent a fun and playful aesthetic. This 10mm circle is also the cutter size for many parts that make up the seesaw. This means the logo can be etched into the product. The colours are close to primary which again reflects a sense of childhood and joy. The bold colours were chosen to help when advertising the Playday.



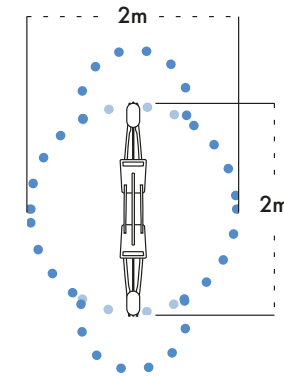
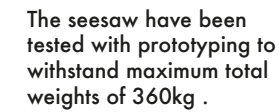


PLAYGROUND FOR ADULTS - INTERACTIVE EXHIBITION

FREE SWEETS!

HPO COURTYARD

TUES (2nd) - FRIDAY (5th) MAY



Daily routine:  
Go flyering  
Handing out free sweets  
Telling people about what I was doing

Tuesday was Interior design and MA studios.  
Wednesday was Graphic design and graphics MA  
Thursday was Fashion design, leave the scariest until last...

Targeting common passageways - street-artist-style. I found wayfinder points across HPO and scattered them with advertisement, promising free sweets and lots of fun. I put stickers in the lifts. Stickers on the stairs. Stickers on the lights. Stickers everywhere! Posters too, on entrances, ceilings, walls or any line of sight in the building.... Instagram was used daily to remind colleagues to come down and try out the Playday.

Overall roughly 80 people tried the seesaws, see more on the next few pages.



# PLAYDAY EXPECTATIONS

What I expect

Playday to do:

- Filming and photography will be done subtly as it will make people feel self-conscious. I will show the play participants any once they're finished.
- Note how participants interact with each other by observing and listening in a nondirect way.
- Let people feel like the Seesaws are there for them, not to be precious about the seesaw.

Gaging the reaction of participant is difficult. I've decided to put a statement to the users 'Taking time out of my day toplay (on the Sesaws) has made me feel...' and let them respond via a series of predetermined sections or write their thoughts on the 'free speech board'. These predetermined sections were hard to gage so I looked back at the previous survey of 'if you were a child for a day what would you do to have fun' to pluck some common themes. These are shown to the right. The Play participants used stickers to pick one or a number of responses to the statement.



Taking time out of my day to play (on the seesaws) has made me feel ...





PLAY+

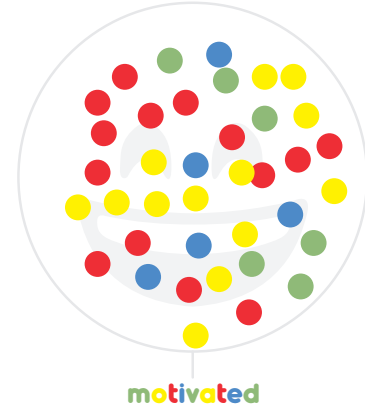
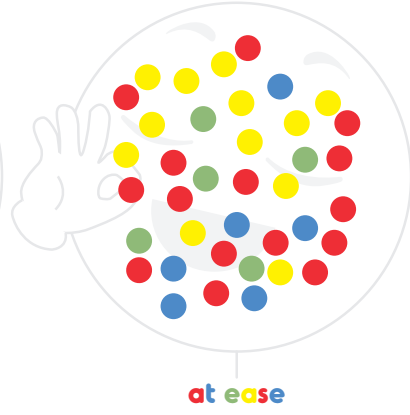
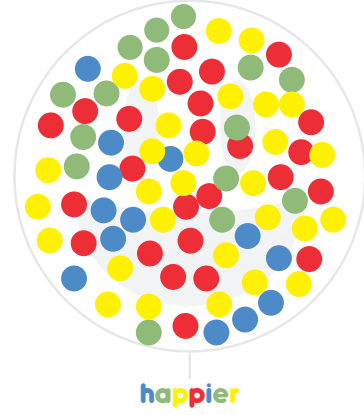
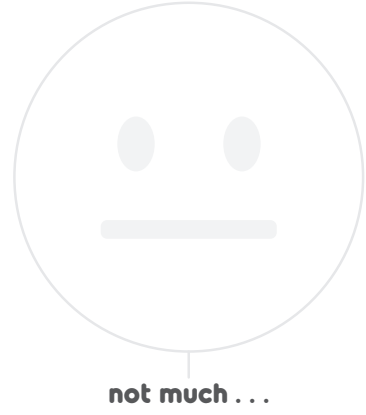
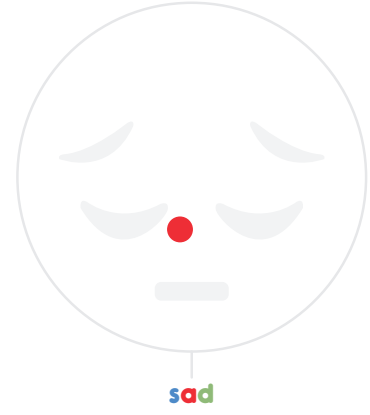




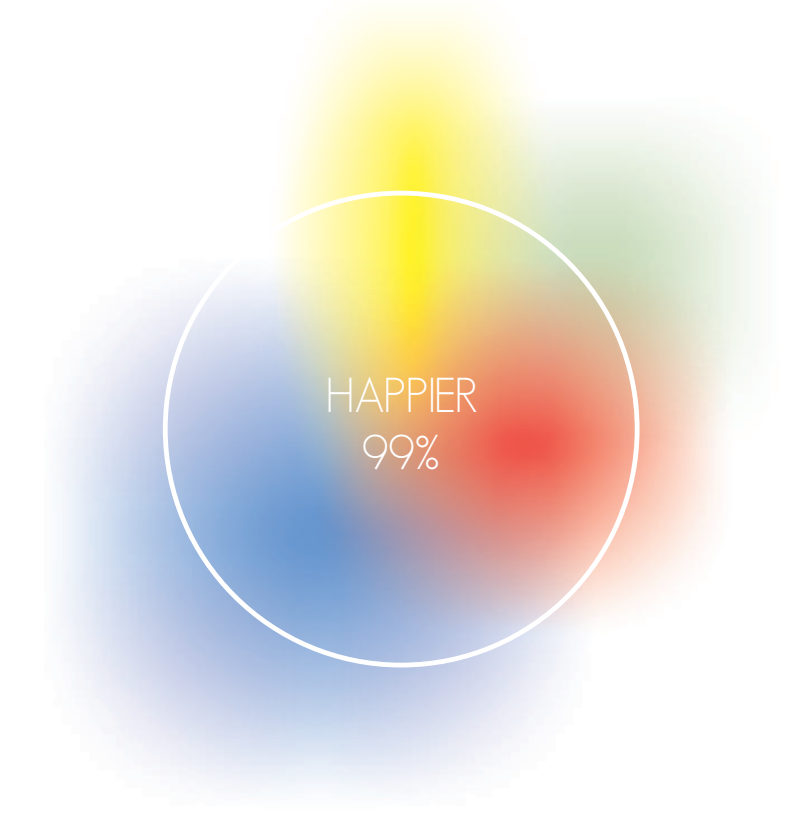
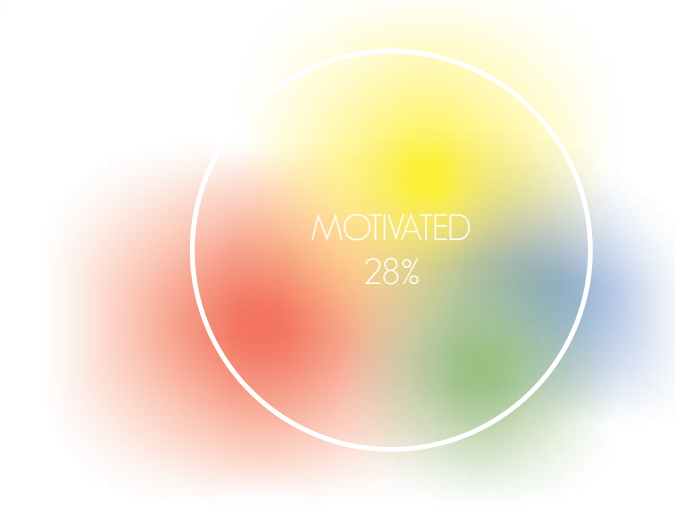
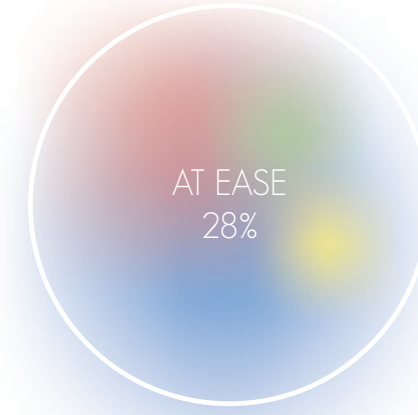
PLAY







TAKING TIME OUT OF MY DAY TO PLAY (ON THE SEESAWS) HAS MADE ME FEEL...



Please can we have one in the studio YES! I Agree

yes YEAH I agree!

Brilliant! Now make another twice as large

good fun!  
love it.

Please can we have one in the studio YES! I Agree

good fun!  
love it. PLEASING! YEAH I agree!

I FEEL LIGHTER! Feel like a kid again IT'S A WAY TO HAVE A CONVERSATION x2

What they all said! great fun! WHAT A TREAT! It's the simple things in life Pure joy :)

I want one... or two likewise! Good old school! Happy! great way to stop thinking + take some time for something fun!

AMAZING FUN! I LIKE THE CUSHIONED SEAT ALL HUMANS NEED THIS fun

OH YEAH! I agree! So much fun! leaving me wanting more! DE-STRESS

Sore bum IT PROPER CURE ME UP!

MULTI-MODE: EXCITING/RELAXING Scared when I went high x2

IT'S A WAY  
TO HAVE A  
CONVERSATION

It's the simple  
things in life

Feel like a kid  
again

ALL HUMANS  
NEED  
THIS

I feel like I'm  
back at school!

In the end the Playday attracted a wide range of people, technicians, staff, retired staff and students. It had a largely positive response with a few constructive comments too. 2 play participants mentioned that "I was scared when I went too high" whilst many more commented that the seesaw takes you to the limit of angle before gently bringing you back down. As only 2 participants mentioned that the seesaws went too high it's not logical to alter the height.

The seat was also pointed out to be uncomfortable by a small number of participants, I agree to some extent. A larger cushion would be required in future models. Again, the handles became uncomfortable after long use, I've added a radius to these and suggested buyers use bicycle handle bar tape to 'hack' the product in the assembly instructions.

THE POSITIVE RESPONSES!  
I saw so many people during the Playday burst into laughter and scream when they got to the peak of the seesaw. 99% of participants left the seesaws feeling happier and many of them returned for another go later in the week.

Noticeably the seesaws seemed to be a way for friends to engage, many participants had conversations and forgot you're on the seesaw. It was noted on the Free Speech board "it's the simple things in life" and it's that simplicity which I saw aid communication by putting a playful tilt on a face to face interaction.

It was also mentioned that participants "feel like a kid again" and "feel like I'm back at

school!". I hope this meant the seesaw was an outlet for play which adults don't normally experience on a day to day basis, only when they were children. Most importantly 6 participants requested to have one permanently in their surrounding studio.

Please read the Free Speech board to see all the comments.





PLAY

WE DO NOT STOP PLAYING BECAUSE WE  
GROW OLD; WE GROW OLD BECAUSE WE  
STOP PLAYING.

GEORGE BERNARD SHAW



“NOW PLAY THIS, 7 – 9 APRIL 2017, NEW WING” ([somersethouse.org](http://somersethouse.org), 2017) is an exhibition perfect for the seesaws, unfortunately now over but this demonstrates promise for a scenario the seesaw could be used in. Not only just for exhibitions the Seesaw could be used as permanent fixture in courtyards of art galleries.

The +Play Seesaw can also be used in central courtyards of studio complexes, university courtyards or artist/designer studios.

There are also events like open source festivals - “Our common objective to co-produce a digital culture festival together through seven learning steps, taking place in the different partner countries.” ([opensourcingfestivals.eu](http://opensourcingfestivals.eu), 2017) This opens up the idea that the seesaws are suited to social events as that is their purpose after all, to encourage social play. Peddler market could be another typical environment, although drunk Seesawing is probably not the best idea.

The seesaw were not designed for one certain scenario but they apply to number of differing situations.

The seesaw are cheap and accessible, quick to manufacture and assemble. They appeal to play, rather than fitting to a environment, any environment that encourages social interaction the Seesaw is suited to.



## SECTIE C

examples of a studio complex, Sectie C is the location of AtelierMats where I undertook a 3 month placment in the Netherlands.





These are some more personal recordings of environments the Seesaws could be used. The image to the right shows a courtyard in Bristol that has a few small businesses. The seesaw could be a feature/attraction for customers. To the left is Gay Pride festival in Manchester.





I WISH I'D TO LEARN  
TO DRIVE...

That's me, on route to Tamper Coffee courtyard film some seesaw assembly for a short video that's under development detailing the best bits of the Playday. It will be ready in time for degree shows and should tell the story of the making of a seesaw from CNC to play.



# BOOKLET INSPIRATION

I visited an independent magazine and bookstore called 70 (Pinstone street) for some inspiration. Being surrounded by quality graphic design helps to trigger ideas for a booklet which will help sell the Seesaw to small businesses.

## Layout

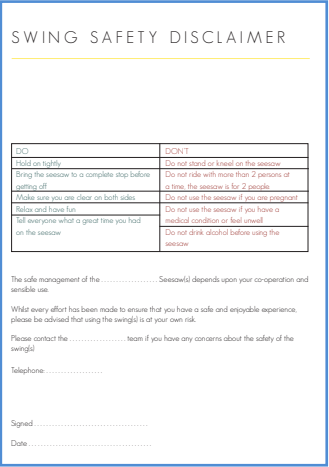
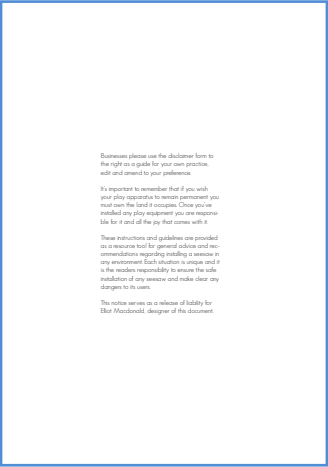
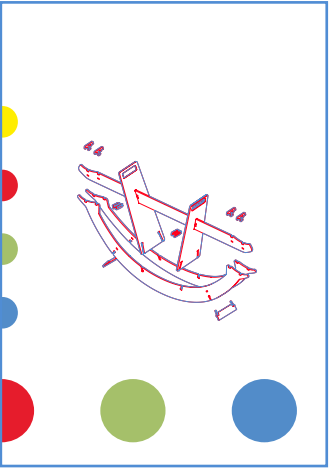
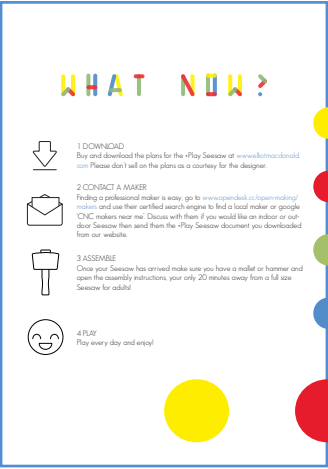
These books specifically utilised spacing to highlight particular words; I'll aim to use this method to explain what I think PLAY identifies as in todays adult society. Highlighting the word will help categorize the booklet into a series of dictionary/personal definitions.



## Infographics and logos

The booklet will include instructions on how to create and build the seesaw. These instructions will take main inspiration from ikea booklets but will be accompanied by logos and infographics. These infographics will demonstrate some of the more quantitative data surrounding the theme of play.





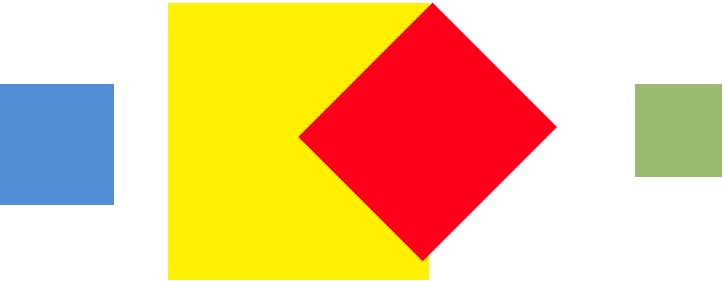
# PLAYBOOK

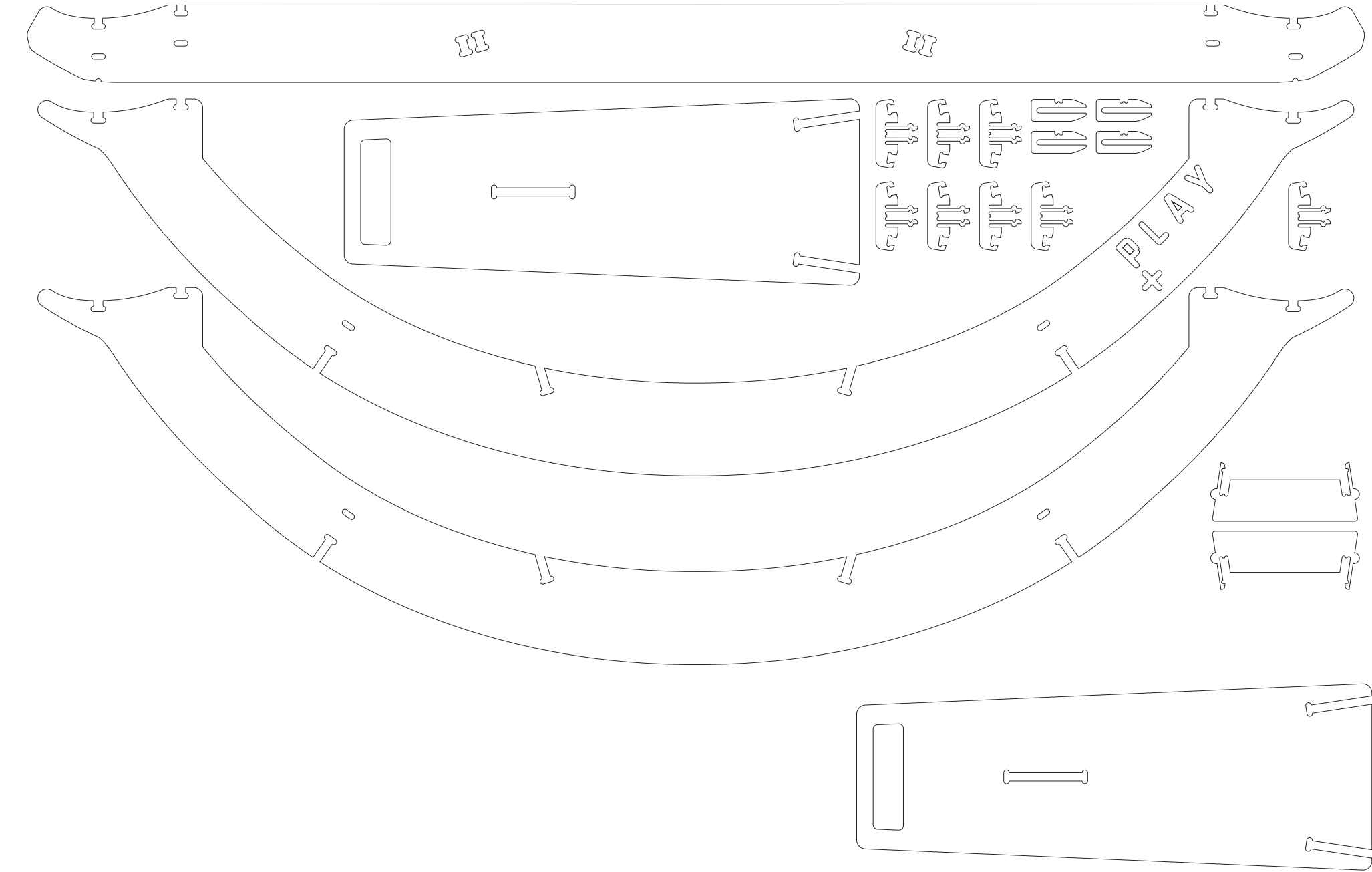
A small brochure has been designed to help outline the benefits of the +Play seesaw in business terms. Using my connections with business marketing colleagues this document details issues with the current lack of play and how the +play seesaw can benefit the user's environment.

It also illustrates important points such as - If the user wants a permanent external use seesaw they should speak to their maker. It does this by detailing the process from downloads plans for the seesaw to assembling it.



TECHNICAL PACK





# PRICES

Buy plans @ £TBC  
 15mm Birch ply @ £41  
 CNC machining @ £45/h  
 Post Processing @ £20/h  
 Delivery @ £50-80

1.5sheet	62
	45
	20
	50
Total	£177

Buy plans @ £TBC  
 15mm WBP ply @ £44  
 CNC machining @ £45/h  
 Post Processing @ £20/h  
 Weatherproofing @ £20/h  
 Delivery @ £50-80

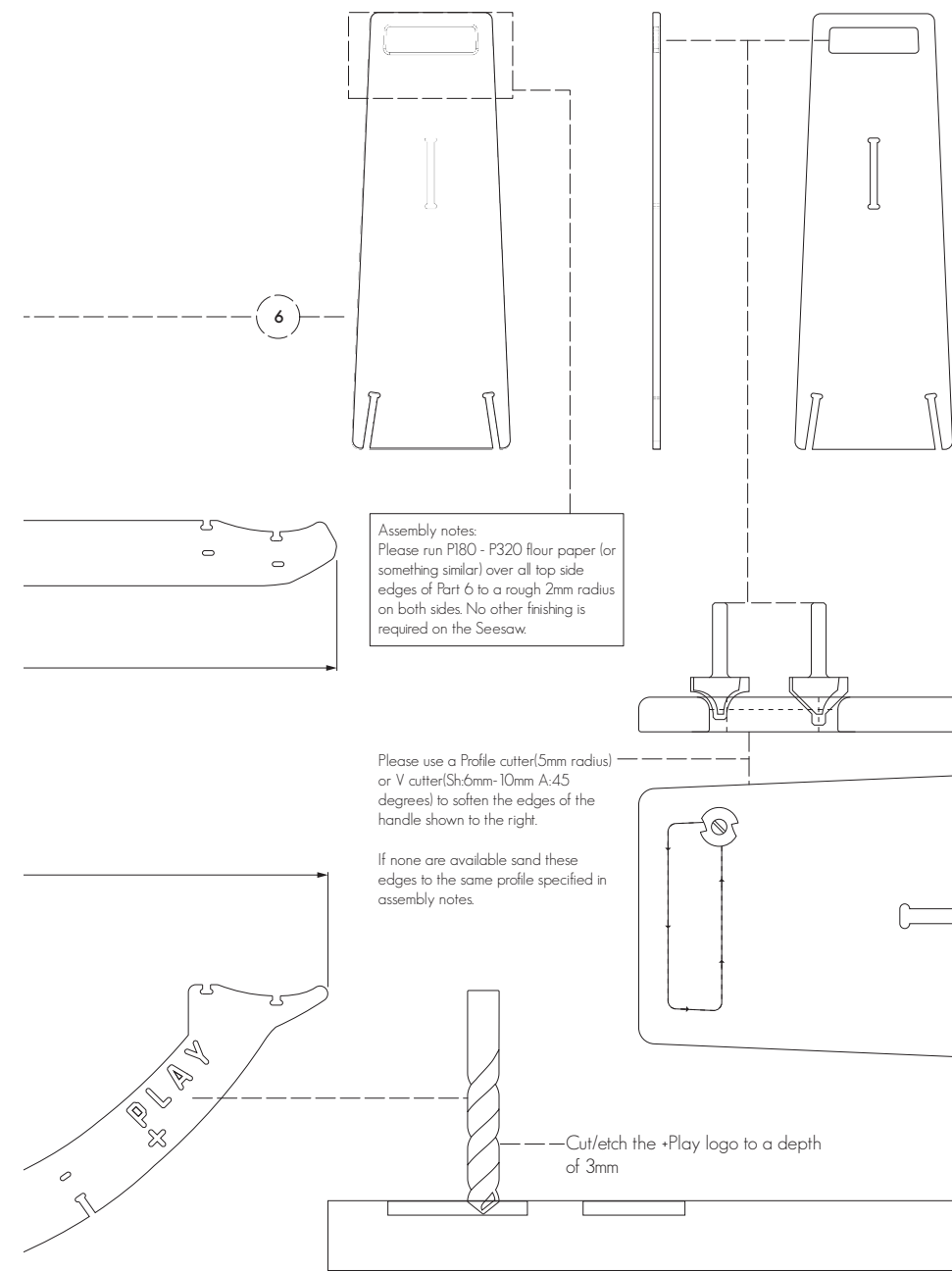
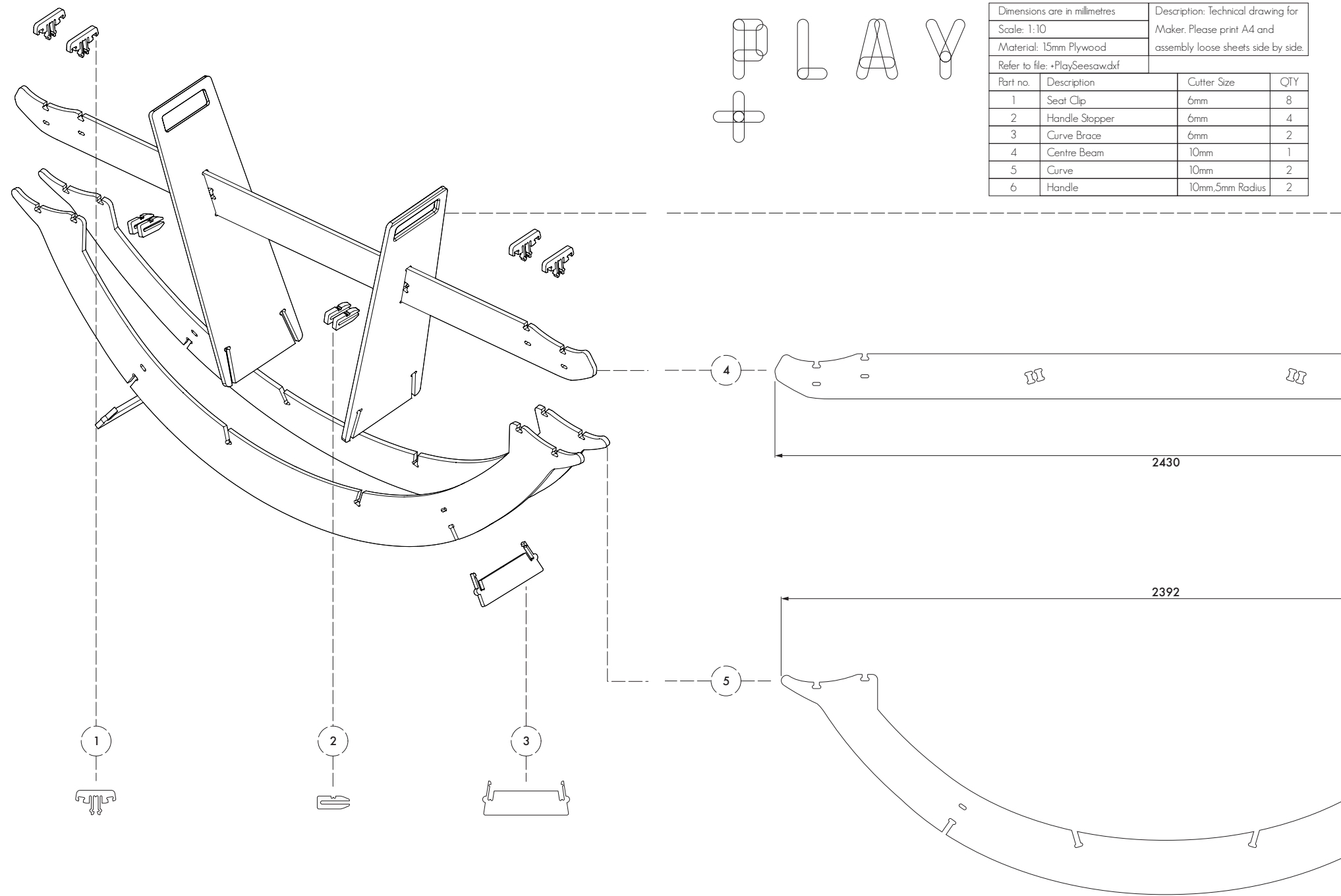
1.5sheet	66
	45
	20
	20
	50
Total	£201

See the technical drawing for details on materials to be used. Conversations with Maker at Chopshop Sheffield have allowed me to determine a suitable exterior grade ply and a dry use only ply.

The cost of buying the plans from my website is an ethical issue for me, whilst I'd like to make money from the project I'd rather give the plans out free of charge and benefit from seeing more adults play in their everyday.

The figures shown above are taken from quotes sent directly to me during the prototyping stage and are an estimate, prices vary from maker to maker.

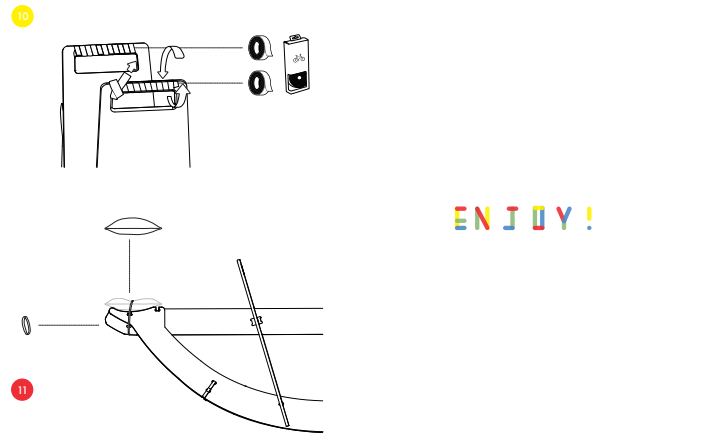
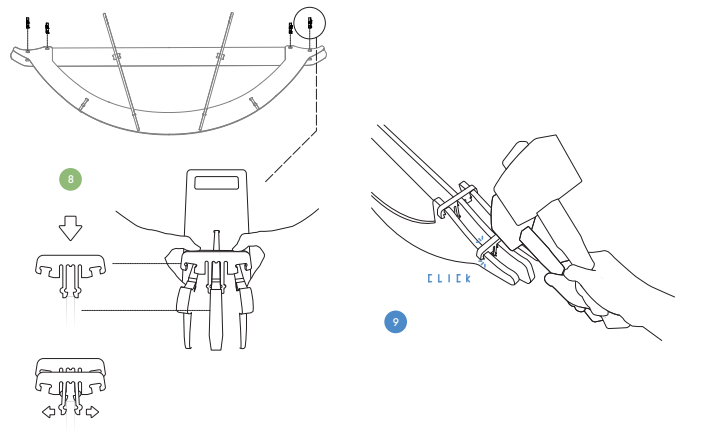
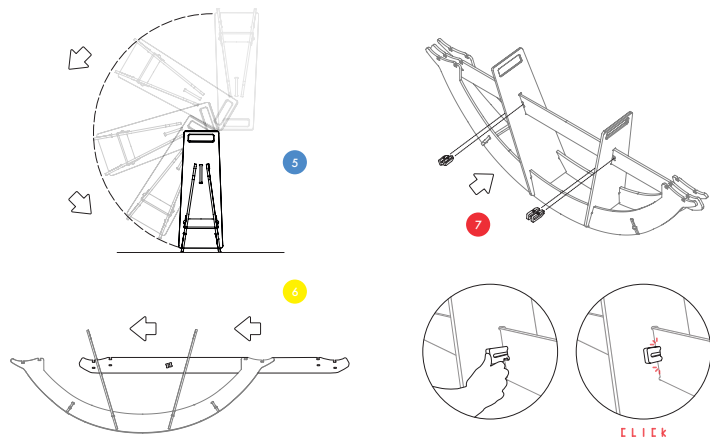
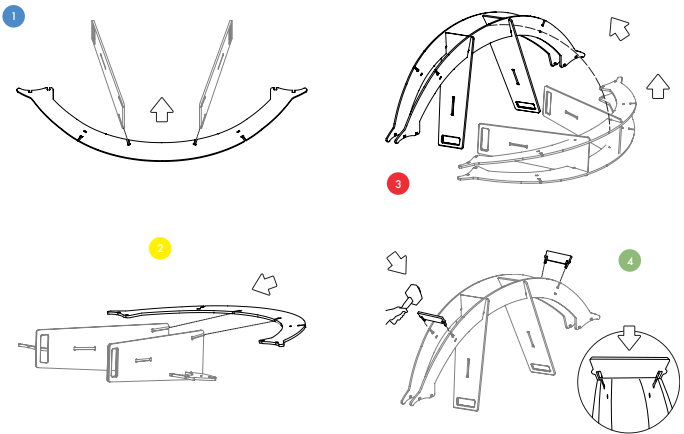
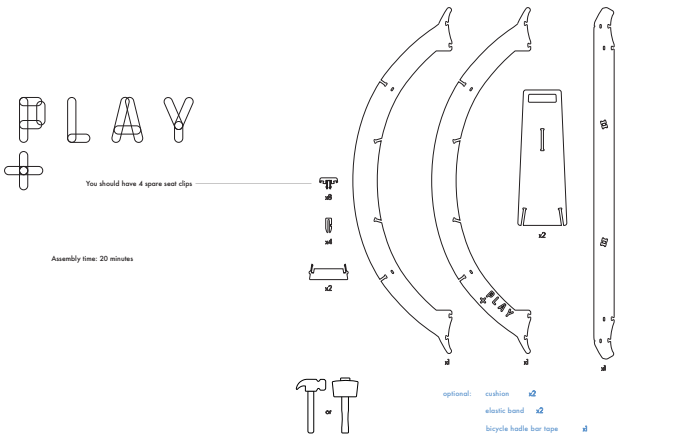
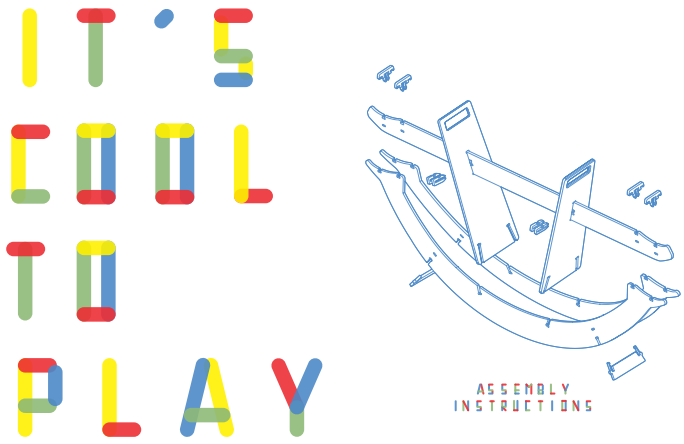




# TECHNICAL DRAWING

The technical drawings are intended for an open source product and as such are formatted accordingly. The reasoning behind designing the technical drawing on A4 format is so the Maker can easily print out the document or view it as a pdf on screen.

These technical drawings illustrate to the maker all the details of the manufacturing process that aren't contained in the DXF drawing. They demonstrate where to apply v cuts and filleted cuts alongside sanding and finishing. To reaffirm the communication of these drawings I sent them to Chopshop Sheffield and all the parts were to specification.



## GENERAL ASSEMBLY

The General Assembly drawings produced for this project are also slightly unusual. As the +Play Seesaw is intended for users to build it themselves some instructions have been created. These instructions were tested for their level of communication by asking a colleague, Joe Butler to assemble a Seesaw with no help. This test proved successful.



# SWING SAFETY DISCLAIMER

DO	DON'T
Hold on tightly	Do not stand or kneel on the seesaw
Bring the seesaw to a complete stop before getting off	Do not ride with more than 2 persons at a time, the seesaw is for 2 people
Make sure you are clear on both sides	Do not use the seesaw if you are pregnant
Relax and have fun	Do not use the seesaw if you have a medical condition or feel unwell
Tell everyone what a great time you had on the seesaw	Do not drink alcohol before using the seesaw

The safe management of the ..... Seesaw(s) depends upon your co-operation and sensible use.

Whilst every effort has been made to ensure that you have a safe and enjoyable experience, please be advised that using the swing(s) is at your own risk.

Please contact the ..... team if you have any concerns about the safety of the swing(s)

Telephone: .....

Signed .....

Date .....

# OPEN SOURCE LIABILITY

After a conversation with Matt Dexter in the studio a while ago its safe to assume that any potential injury’s the seesaw can cause are not a fault of the designer if a liability statement is presented. This reasoning is back up in M. Dexter cites Torrone (2012), the ‘Unspoken Rules of Open Source Hardware’ A statement near to the download button for the plans will mention the release of liability form the designer.

The form to the right is for businesses to use for clients and staff – this replicated the system of Electric works Sheffield and save company’s creating a liability document themselves.

# HEALTH AND SAFETY

The Royal Society for the Prevention of Accidents - RoSPA  
Mission – to reduce injuries and save lives.

“The European Standards for Playground Equipment: EN 1176 and EN 1177 have been published to harmonise existing European standards.”(rospa.com, 2017)

This information is directed at children’s safety; so amendments for sizes have been cross-referenced and altered according to anthropometric information gathered from ‘The Measure of Man’.  
“BS EN 1176 is not retrospective or, currently, as with previous standards, a legal requirement in the UK but represents good practice in the event of an accident claim. Their limitations should be recognised: mere compliance will not automatically create a safe playground or give immunity from legal proceedings. Like previous playground standards they are intended to be used intelligently as part of a risk assessment.”(rospa.com, 2017)

By following these guidelines risk of injury or harm to any users is completely and fully minimized. Whilst there is no official documentation which states the safety requirements for an adults seesaw it seems wise to consider the children’s guidelines and use them as a template for safe design.

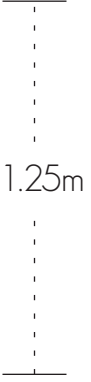
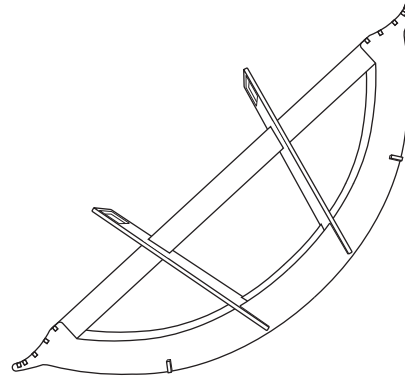
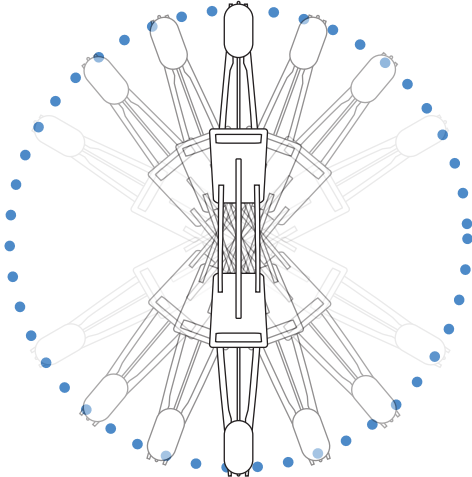
In addition to following these guidelines companies wishing to use the seesaws should set up a disclosure agreement for staff. This is common practice as learned from a recent visit to Electric Works Sheffield.



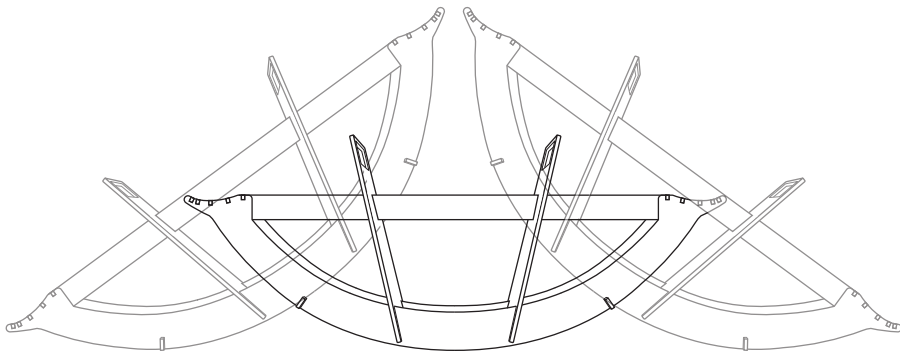
EN 1176 and EN 1177  
 Section: Rocking equipment  
 Definition: Rocking equipment which can be moved by the user and is pivoted from below.

For indoors and outdoor use  
 subject to material chosen for manufacture

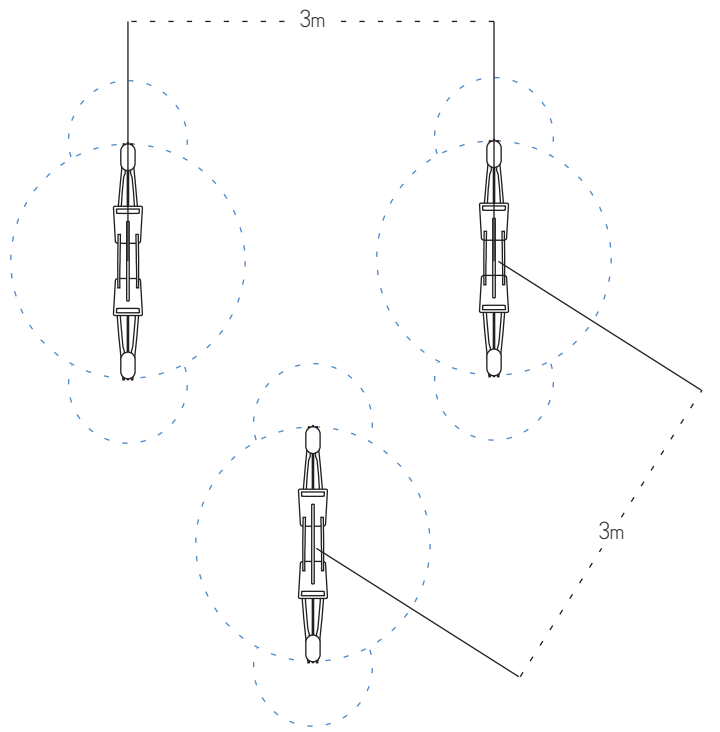
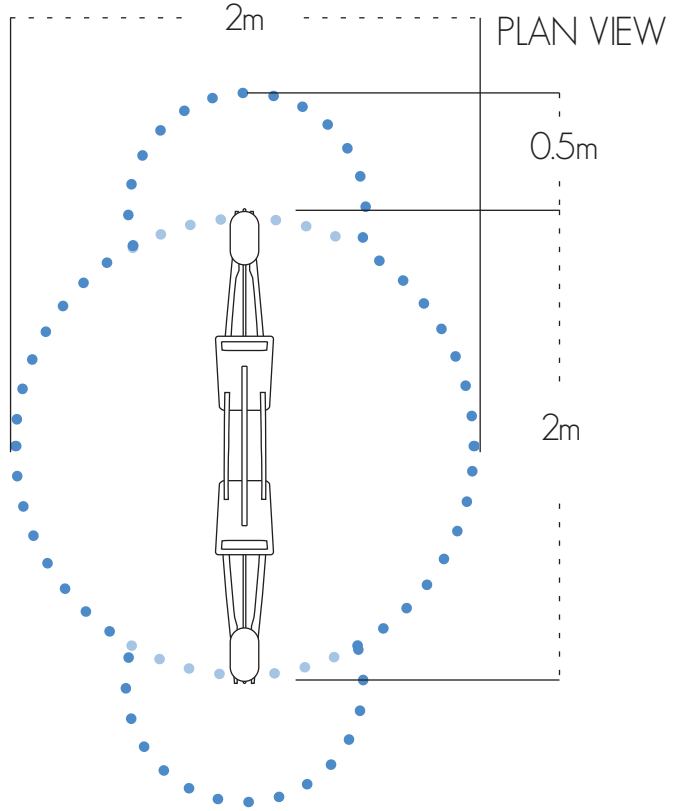
The seesaw will rotate on its central axis so equal distance from objects behind or in front of the seesaw should additionally be accounted for at either side.



- Max freefall height should not exceed 2m
- Max slope of seat 40 degrees
- Ground clearance of 46cm minimum



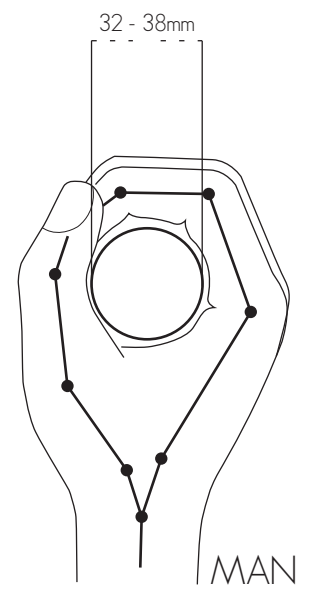
The Seesaw has the capability to move along its position when used at its maximum height. Therefore space must be accounted for on either side of the user, 0.5m should be left free behind each user to minimise potential collisions.



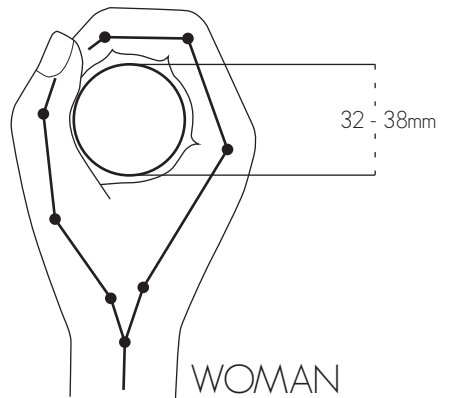
- 2000mm between items at maximum movement.
- 3000mm between seesaws if multiple seesaws are in use (vertically and laterally)
- 500mm between seesaw seat and any other obstacles as the seesaw can move forwards and backwards.

## MOVEMENT

## GRIPS

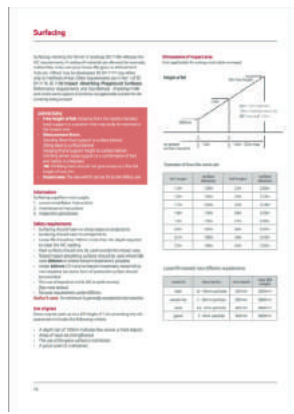


All grips work in accordance with the recommendations of The Measure of Man & Woman, by Henry Dreyfuss Associates. The grips follow the average. Illustrated below.



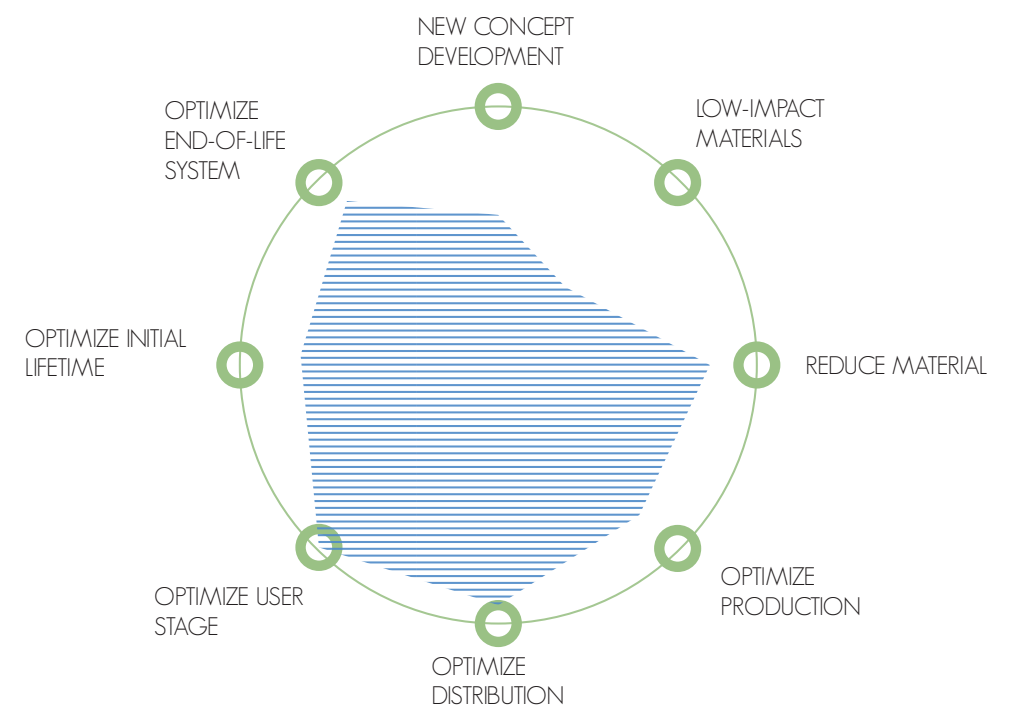
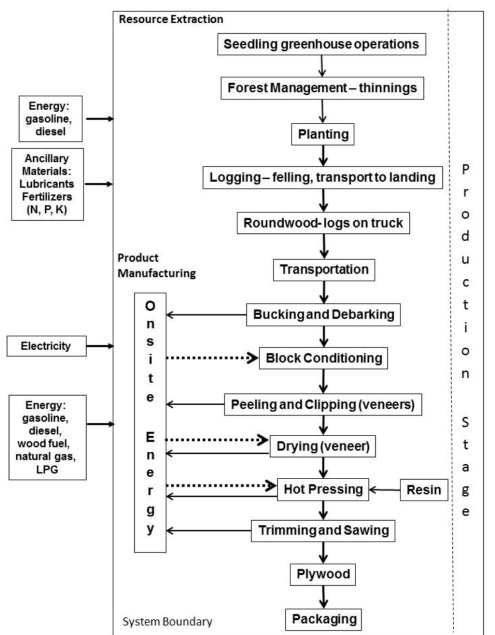
## SURFACES

Its recommended in EN 1176 and EN 1177 that surfaces (bark, woodchip, rubber matting) are put in place to protect children in the vent of a fall. As the public playground environment is one in which they are encouraged to push their physical limits this measure is reasonable. Adults on the other hand can be said to have a more dependable approach, usually knowing their physical limits. The seesaws are also not public, so any injury caused will not be liable to the manufacturer or owner of the seesaw if due disclosure agreements are signed in any applicable business or event use. Therefore surfacing requirements for this adult seesaw are N/A.





# SUSTAINABILITY REPORT



Low impact materials:  
FSC 15mm Birch Plywood Grade BB - uses large amounts of energy in its manufacture stage. Some toxins are released into the environment during the manufacture such as; CO<sub>2</sub>, CO SO<sub>2</sub> and formaldehyde. But the entire process from seedling planting through to veneering and hot pressing requires large amounts of electricity. (wisaplywood.com, 2017)  
The plywood is largely manufactured in China so carbon emissions are relatively large when its shipped around the globe. But this shipping impact is a huge degree lower than shipping assembled products from China.  
The source material, Birch, is a renewable source.  
“Birch trees are the ultimate renewable resource with virtually every part of the tree being utilised. The twigs are used for besoms and sauna whisks, timber for furniture and flooring; bark was used for roofing and canoes, and even the sap for wine! Waste timber and residue at plywood mills is used for other materials and boiler fuel for energy production.” (James Latham, 2017)

Reduction of material:  
Reduce at design stage has been a constant battle, the outcome however does use a little material possible. Noting that the seesaw has been made weaker in the effort to reduce material down to 1.2 full sheets of plywood.

Optimisation of production techniques:  
The 10mm cutter has been used on all appropriate parts allowing the CNC machine to cut the seesaw at a more efficient rate. Again, the efficiency of which specific CNC cutter will be used to cut any given seesaw is out of my control, as is the nature of open source products.

Efficient distribution system:  
The distribution system for the product is controlled by the user. In conjunction with the customer’s maker the product will be delivered most likely by local couriers. This minimises to the fullest extent the distance between user and final product. Open source furniture products like Opendsk “reduce the markup on retail and shipping by as much as 300%” (opendsk.cc, 2017) this reduction will in turn reduce environmental impact too.

parts of the seesaw may need to be replaced. The +Play Seesaw is a repairable product – will users repair the product? Yes, at a fraction of the cost of replacing the whole seesaw the user will likely ask the maker to simply cut a replacement part.

Optimisation of end-of-life system:  
In the eventuality that the Seesaw is no longer of use then the plywood can be recycled into particle board. Its more liley that the user will however throw the product away. “Note that wood products (Birch coated plywood) are biogenic CO<sub>2</sub> stored and can replace fossil fuels in energy production at the end of their life cycle.” (wisaplywood.com, 2012) by burning the wood at the end of its life cycle some of its energy is reused but this will release harmful chemicals into the environment.

Optimisation of initial lifetime:  
Some wear on the bottom edge after repeated use in testing. This highlights that some

# REFLECTION

The initial objective of this project aimed to allow adults to play in a public space and in turn spread play. By gaining feedback form a wide range of adults and key experts such as Aya Husni Bey the final outcome acheievs this.

Think about how you feel walking out of a really good movie, bringing your mind back again to the everyday world but retaining a changed perspective. One critic remembers walking out of Laurence of Arabia and feeling that the sunlight looked different.” (Stuart Brown, M.D with Christopher Vaughan, 2009) From survey results and feedback from a self-organised exhibition it was clear to see that the +Play Seesaws influenced a user’s metal outlook for the better. ((% of all users came away from using the seesaws happier.

If the +play seesaw were to be taken forward by an external company reapeated stress testing would help refine the seesaw to its fullest extent. Although ive put the seesaw through an extended period of use I expect the seesaw will require further design development and more rigorous testing. Design for disability – the seesaw does not take into account disability, paraplegics can still use the seesaw as it only needs upper body momentum however quadraplegics cannot use the seesaw.

Will the seesaw be used? I’ll get a better read on this from degree shows but the seesaws do under cut the price of a ping pong table, providing an alternative play for creative business.

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