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The project

The project could be outlined as followed:

Group research concerning the broadest aspects of the brief.
Reflection on the research.
Collaboration between the group to decide the theme - this will most likely involve further research.

Research further into the theme.
Decide the design direction.
Research into the design direction.
Initial conceptualisation.
An iterative process of design, research and critique involving tutors and group members. Input from the different design disciplines -product, interior, furniture - will be essential for the outcomes to be coherent at the end.

This will also involve, and end, with reflection of the process; how the focus changed and remained relevant to the theme.

The project will provide the chance to collaborate with other design disciplines, which will inevitably broaden design insight and skills, applicable to the real world.

It will also provide the chance to learn more about Sheffield, to put research methods into practice and gain an insight into how professional work is presented outside of an academic setting, i.e. exhibitions and galleries.

Brief

Develop a range of objects/interior treatments for the Urban Splash Park Hill development.

They are to be used in the new phase of the building when it reopens as a creative work space and residential development.

In small, multi-discipline teams, each group will propose a treatment for a space and the type of objects which will occupy the space.

Design something related to the appropriate discipline, which forms part of the group's proposal.

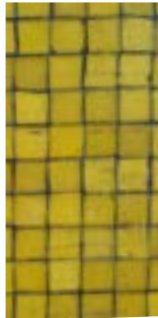
The type of outcome is open.

The theme for the project is Work, Rest & Play, for a flexible living/working space housed in a two-bedroom apartment in Urban Splash's Park Hill development.

The design outcomes will be exhibited collectively in the Made North gallery in the Yorkshire Art Space, Sheffield.

Group research

Sheffield



In a sentence

A fun loving city, vibrant with cultures of all kinds and backgrounds, with a strong community and rich historical and industrial heritage.

Design style

A combination of post-war industrial Britain, and post modernism. Brutalism, too.

Sense profile

Rough, cold brickwork and concrete, smooth ceramics, sharp glass, bright graffiti, scents of coffee and the Peaks, tastes of food from every country. An air of sharing and caring, resilience and strength, preserving and reforming.

Urban Splash

Who

A regeneration company, made up of designers, architects, surveyors, entrepreneurs and more.

What

They take a deep interest in transforming, refurbishing and restoring older, unused buildings, into homes and offices - spaces for (younger) people to be themselves.

Where

They have completed many projects in cities across the UK, including Liverpool, Manchester, Plymouth and now, Sheffield.

How

They have collaborated with professionals of different backgrounds with the single goal of wanting to 'make things better' (Urban Splash, 2015). The open-mindedness of this team with a broad background has allowed them to adapt to the needs of each building, the city to which it belongs to and the people that would use it.

When

The company was set up in 1993. Now in 2015, it continues to grow.



Park Hill

Who

Designed by the architects Jack Lynn and Ivor Smith. It is currently being transformed by Urban Splash, who are also working with the architects Hawkins-Brown and Studio Egret West.

What

A council housing estate. To some, it is seen as a landmark that looks over Sheffield, to others, it is an eyesore. Nevertheless, it is listed as a Grade II building - an architectural acknowledgment.

Where

Sheffield, South Yorkshire, UK

When

First opened in 1961.

How

It was built to replace the slums left from post-war Britain. Once built, it was seen as an architectural feat, revolutionising the vision of living in flats - 'streets in the sky'. Unfortunately, it succumbed to social and political changes, which led to its downfall into the 80s and 90s.

More

Once envisioned as modern design, it is now being converted by Urban Splash into a living space that is much more contemporary, by reusing existing colours and materials, such as concrete and coloured panelling, and combining them with modern, minimal, interior features and fittings. It is currently aimed at young professionals, up to mature downsizers.



Community

Definition (Oxford University Press, 2015): *A group of people living in the same place or having a particular characteristic in common.*

A strong sense of community was felt throughout Sheffield during the Typographic Tour. This came from many different aspects, including:

the high number of different areas of Sheffield, which are all within easy access of each other by foot

the knowledge that residents/visitors/business owners have of the city, and the willingness to share it

the high proportion of events that take place in the city

the high proportion of venues and spaces provided and used, regularly the growing number of independent businesses and the support they that have

the support and revival of past industries through architecture, interiors, product language and graphics such as typography (community of disciplines).



What makes a community?

A sense of belonging
A sense of safety
Access to goods and services
Building and maintaining relationships between residents
A sense of wellbeing
Respect towards neighbours and the surroundings of the area
Open-minded adults, and a place where children can be raised with open-mindedness
A sense of value
An ability to adapt and overcome any change - from each individual and as a group as a whole

This revival and shared knowledge fits well with the timing of refurbishment of Park Hill.

What happened to Park Hill then?
Why?

What do other people think happened to it? Why?

Quick ideas in response to the word *community* - could its importance be reflected in an everyday object such as a mug?

Each part of the mug - the base, walls, vessel and handle - has been separated into its own part, and the user must assemble it before they can use it. The same could be said for a community: each person must work together for it to be able to function as whole.



Interviews

Following the Typographic Tour of Sheffield, it was decided that local residents and business owners around would be interviewed (with permission) to gain a greater insight about the city and Park Hill. General questions were formed (below) based on the insights taken from the Typographic Tour.

How has Sheffield changed?

What do you do in your spare time?

How do you feel about Park Hill?

Do you feel that Sheffield has a sense of community?

General answers include:

Sheffield has the ability to recognise its potential.

[Sheffield] gives it [Park Hill] the chance to live beyond what most cities would allow.

Park Hill gives a modern breath to the city.

Sheffield has a good identity.

[Sheffield] it has a strong sense of community.

The regeneration of Park Hill is very forward-thinking and brave.

It [Park Hill] could go one way or another.

Key insights

- » Sheffield is made up of many cultures and subcultures spread across many areas that seem to blend together, making and holding a strong sense of community.
- » There seems to be an underlying concern that the regeneration of Park Hill may not work, and that it will dilapidate once again - residents seem to be weary that they will be let down again. Nonetheless, there is strong hope for it.
- » Work, rest and play are not as seen as separate things to local residents - all three are seen as key aspects of life that function together at the same time.
- » The system of 'streets in the sky', where the architecture and facilities were designed to encourage community was not enough to stop the downfall of Park Hill. The issue was much deeper than that - it lied in the mindset and attitude of residents following social and political changes which played a part in the way they reacted.

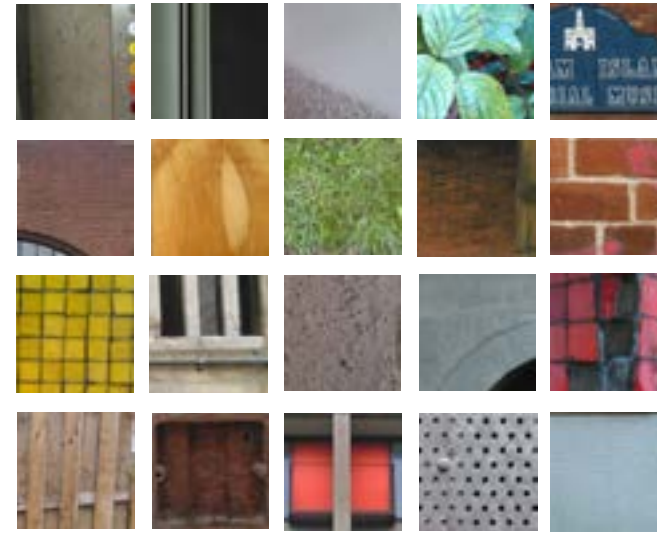
Colours



A clean palette inspired by colours found throughout Sheffield, such as brick, concrete and prevalent ceramic tiling. Warmer and/or calmer shades have been chosen to soften the more harsh inspirations.



Materials



1. Stainless steel - inspired by David Mellor cutlery, and the fact that it is a crucial part of Sheffield's history and industry. It could also be used as a way of 'reflection' when working on self improvement.



1.

2. Recycled PET felt - chosen to soften and contrast the other materials and also representing Sheffield's forward thinking attitudes to being green. It could be reminiscent of the Peaks and crafts culture. An opportunity to add colour.



2.

3. 3D printed resin parts (see white connectors) - this method of manufacture represents Sheffield's industrial history, as well as the current industry which produces more with specialist materials.



3.

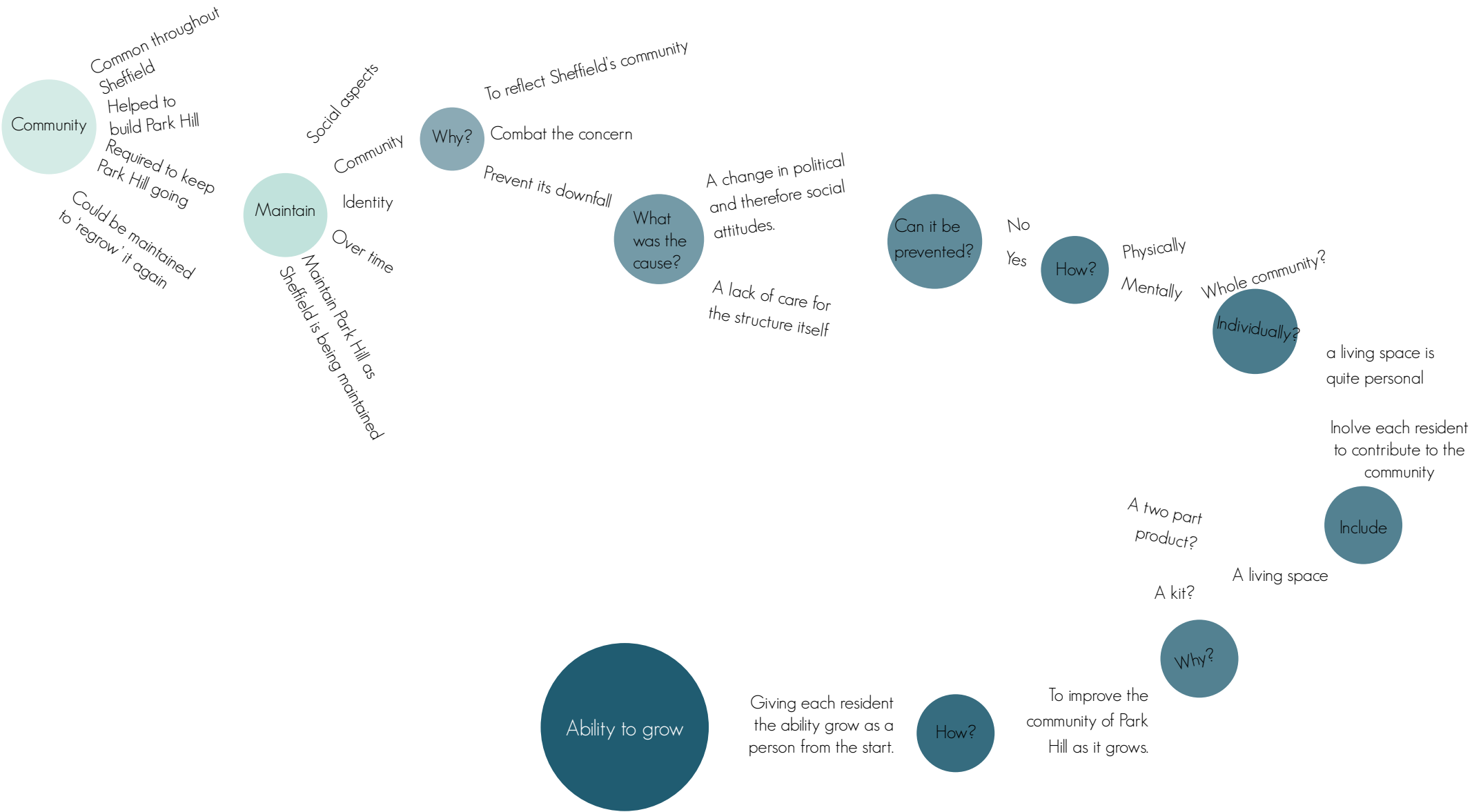
4. Reclaimed wood - a way of adding a natural element to the brutalist establishment, and also promoting considerations towards the environment. It gives each apartment greater individuality and personality, too.



4.

The theme

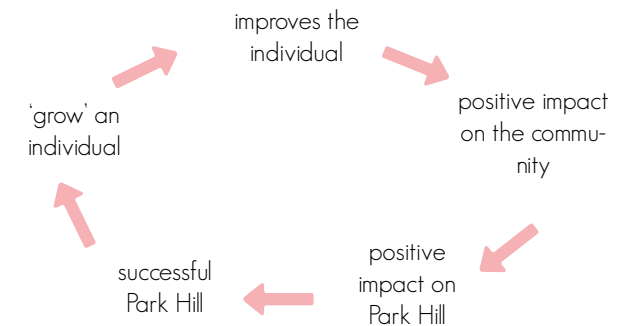
How the proposal evolved during group discussions:



Theme: ability to grow

Proposal

To create (objects for) a living space (or a feature of it) that gives each individual the ability to grow as a person.



To have a positive attitude, and therefore impact, towards their environment, an individual would work, rest and play - live - in a way that is good for them and others around them. They would generally be happier and function well for their wellbeing to be in a positive state.

The key to giving each person the ability to grow is the state of their wellbeing. The more positive their state of wellbeing, the better they are able to grow as a person.

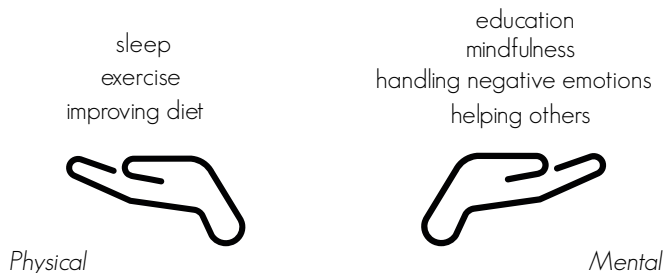
The right ingredients to produce the best recipe, the correct tools to create a model, or the perfect conditions for a plant to grow.

Wellbeing

According to the NHS (2015), wellbeing is essentially when a person feels good and functions well. It is a way of living that is good for the person and the people around them. They have a positive mental state of mind.

Over the last 50 years, Britain has become richer - but wellbeing has not improved (NHS, 2015). This suggests that things that people will often think will improve their lives, e.g. possessions or having more money to spend, alone are not enough to have a lasting improvement on their lives.

However, there are several steps a person can take to improve their state of mind:



contentment
engagement with the world
enjoyment
confidence

Mindset, attitude, mental wellbeing

It was decided that playing on the mental aspects that contribute towards wellbeing would have an overall greater and more beneficial effect than the physical aspects alone - improving wellbeing through mental aspects would indirectly have an effect on the physical aspects involved, how they are carried out and the attitudes towards those..

It was then decided that the most effective way of giving each person the ability to grow could be the practice of mindfulness - a sense of awareness of the present moment. Making each individual more mindful of themselves through their awareness of the present moment would improve their wellbeing through the way they treat themselves and others, and their surroundings.

Formal methods of practicing mindfulness include meditation, tai chi and yoga.

Think of work, rest and play as the 3 core aspects of life. Creating a living space that gives a person the ability grow (mentally), improves their mental state. Improving their mental state has a positive effect on the 3 core aspects. This improves them as the individual, which benefits the community and therefore Park Hill.



Further research &
design development

Meditation

According to The Buddhist Centre (2015) meditation is a means of transforming the mind. It is way of being able to take responsibility for a person's state of mind and to change them for the better. The practice offers a means to cultivate more positive ways of being.

Many approaches have been developed over the millennia, but the focus of them all has been to cultivate a positive state of mind - making it a possible method or idea that could be applied to the residents of the Park Hill community.

Furthermore, according to the British Psychological Society (2015), a study carried out by a team of researchers from Northeastern University and Harvard University, found that not only does meditation improve a person's own physical and psychological wellbeing, but it can make a person more compassionate towards others - a key contributing factor to the growth and wellbeing of any community.



Mindfulness

A sense of being aware of the present moment

This could be applied to products where their usual method/order of functionality is challenged, to make the user stop and think about the action they are carrying out in the present moment - especially the most mundane or straightforward.

E.g. something that only works when the action(s) to make it work...

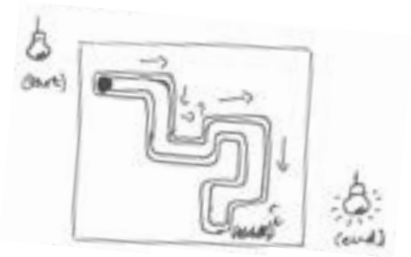
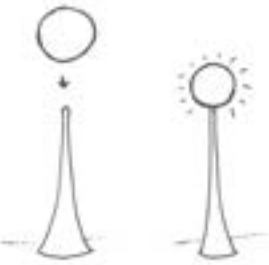
involve making a part by hand

must be carried out with precision

involve a part that has to be replaced regularly

involve a form of assembly beforehand

must be adhered to in a specific sequence



A closer look at the brain



■ Frontal lobe Concentration Planning Problem solving Motor control Speech Smell	■ Parietal lobe Touch and pressure Taste Body awareness	■ Occipital lobe Vision
■ Temporal lobe Hearing Facial recognition	■ Cerebellum Coordination	■ Brain stem

... when meditating

According to Lazar (2015), in a study, people who regularly meditated for an eight-week period gained grey matter in specific parts of the brain. One area, the prefrontal cortex (found within the frontal lobe), which is associated with decision making and working memory, in the 50-year old subjects was found to have as much matter as that of a 25-year old, suggesting that meditation can slow down ageing in that area of the brain.

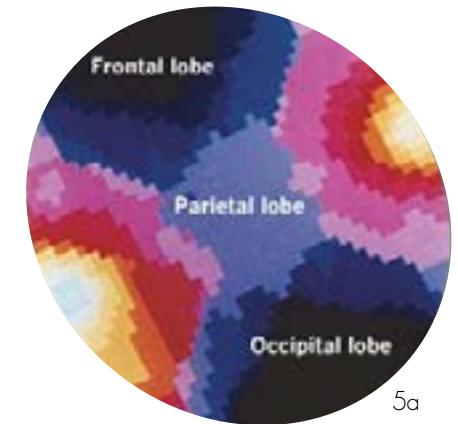
It was also found that the hippocampus, associated with learning and memory and emotion regulation, had increased in matter over the same period of time.

The junction between the parietal lobe and temporal lobe, which is responsible for empathy and compassion and perspective taking did the same, too.

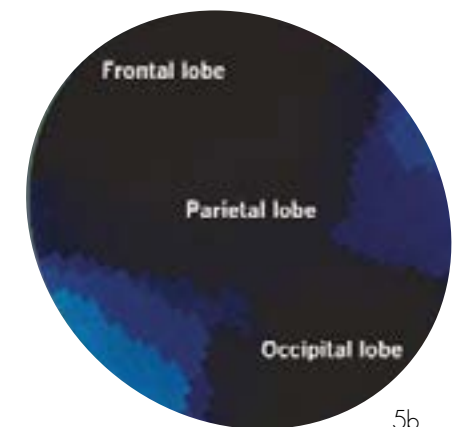
The amygdala, associated with the fight or flight stress signals decreased in grey matter. Further tests confirmed that this resulted in a change in people's reaction to their environment.

This suggests that the act of meditating or encouraging people/residents to become more mindful could help to secure the future of Park Hill, and not to let negative events occurring around them to affect them in such a way that their home is a story of downfall again.

Before meditation



After meditation



MRI scans: decreased brain activity post-meditation, allowing information collected from the senses to create a deeper perception of what is happening around the user in their environment.

Meditation - an experience

To better understand the practice of meditation.

The session was run by the university pastor, Ian, in the Multifaith centre at Sheffield Hallam University.

It runs every Wednesday, 1-1.30pm.

It is a quiet room with soft chairs around a low table, and a smaller side table next to that one. Ian was sat next to it.

The first side table had on it the Bible, and a laminated card with the word 'MARATHANA' printed on it.

The second had a small music player.

There were three other participants; ten people in the room altogether.

Ian introduced the itinerary of the session to the group: a five minute recording was to be played, where a priest would ease the participant into their 'levels of

consciousness', followed by gentle background music.

Twenty minutes of meditation would follow.

A two minute recording would then be played again, to ease the user back into the 'real world' once again.

He also demonstrated how to place the hands (one hand on each lap, both facing up towards the ceiling or down onto the lap), and then informed the group to sit comfortably in the soft chairs and to close eyes. Whilst meditating, he advised to use the four-syllable word 'marathana' as a guide to help with the constant inhaling and exhaling that is required (*mara-inhale* - *thana-exhale*)

He also explained briefly the purpose of meditation - to give people the chance to actually stop for a few minutes regularly, to clear the mind, to re-focus minds and to understand that the daily pressures of deadlines and errands need

not to be worried about, that they are trivial. A few minutes of doing, thinking of absolutely nothing can have a great effect on each person in their own individual way.

It need not be related to any religion; it is very popular in the use of improvement of mental wellbeing. Anyone from any background is welcome to the session, and to the practice of meditation as a whole.

A sense of peacefulness and silence immediately fell upon the room as Ian notified us of the beginning of the session. The first recording was played. The narrator guided the participants into the levels of consciousness

first level -
second level -
third level?

Music then followed the narrator for approximately two minutes.

Once the music ended, the room fell to

silence once again.

Only the occasional deep breath could be heard from what seemed like a great distance.

As a novice, there were obvious confusions running through the mind - saying to stop thinking about things, and then realising that that was still thinking.

Nevertheless, further into the session, images formed in the mind. Colours (presumably caused by the fluorescent tube lighting) swam in front of the eyes, providing to be a distraction and an aid to the process. Images flitted across occasionally, possibly from deep within the imagination.

The sense of time was lost.

The second voice recording was then played by Ian, which startled some. It guided the participant to awakeness again, in their own time.

The three other participants left.

Synaesthesia

A visual (created in Photoshop) from the meditation experience.

Research of different parts of the brain informed a subconscious curiosity as to why colours could be seen in darkness when eyes are closed.

Although the reason behind colours visible in the dark is a recognised scientific one, it was realised that the curiosity was triggered by the underlying and assumed perception of darkness.

The possibility of seeing colours in complete darkness is somewhat contradictory, as if the sense of sight is getting confused.

In fact - what could happen if any or all of the senses 'got confused'?

This thought was a reminder to a condition called synaesthesia, where a person experiences a joining of the senses. (UK Synaesthesia Association, 2012). One type of sense (e.g. hearing) produces sensations in another type of sense, as well as its own - for example, a person could see what they hear, or smell what they see.

The principal of synaesthesia could be applied to a product in such a way that the perception of it is challenged. This could heighten the individual's awareness of what they are doing when they use the product, making them more aware of their actions and thus being aware of the present moment.

Design direction:

in order to provoke
mindfulness, create
an object that
challenges perceptions
of its functionality,
through the mixing
or heightening of the
senses

Who

In this case, the product outcome is not determined by the user. The outcome of the user will be determined by the product. Therefore, a specific user will not be targeted.

What

The outcome will act as a subtle tool, where it benefits the behaviour of the user more so than their practical requirements.

Where

Since it is to be designed for a living space, it would be ideal that the product works best in this space, although it need be restricted to that area - it will only be more beneficial if it functions in other spaces, too.

When

The product will be used when it is required, as with any other product. However, its purpose should remain clear and effective every time it is used.

The object

Ultimately, the object would be something that makes each individual more mindful, instead of something that represents mindfulness, if it is going to be in a living space where each individual works, rests and plays.

If the direction is to provoke mindfulness, then the assumption that has been made is that every individual is not mindful enough already, or that each and any individual's mindfulness can be improved.

There would little reason, therefore, to create a representation of mindfulness. To generate mindfulness, there has to be a lack of it somewhere first.

When is an individual least or less mindful?
In terms of interacting with products, it is when a task is carried out with the least thought. In this case, these tasks would be ones carried out in a living space.

fig. 1 **Tasks around a living space, and their perceived senses**

Key

- Sound
- Sight
- Touch
- Smell
- Taste



As there is a wide range of activities that can be carried out in a living space, with varying numbers of senses involved in each one, it was decided that setting a time frame could refine the number of options available.

A typical day could be split into:
morning
afternoon
evening
night

Which part of the day could be most effective in generating mindfulness?
According to Fowler and the NHS (both 2015), starting the day with mindful routines and tasks can help an individual be more mindful about their actions throughout the day, as well as helping them feel better and more focussed.

This could mean that the most effective objects that provoke mindfulness could be ones common in a morning routine.

A typical morning routine could consist of the following processes:

- wake up
- turn alarm clock off
- get out of bed
- open curtains
- shower/wash face
- get dressed
- brush hair
- prepare breakfast
- eat breakfast
- wash dishes

brush teeth
pack bag
put shoes on
leave the house
start car/walk
(where or when a morning routine ends is subjective).

This would mean that typical objects could include:

- clock
- hanger
- curtain rail
- packaging - bottles
- hairbrush/comb
- packaging - boxes, cartons, packets
- utensils
- pots, pans
- dishware
- scrubbing brush
- dish rack
- toothbrush
- keys

door handles
switches (lights, appliances)

The multitude of processes in the morning give a broad set of products that are constantly used without thought.

The way these products are used, or their perception, could be challenged in such a way that they make the user aware of what they are actually doing at that moment in time - being aware of the present moment.

Possibilities

A kit

Each individual could have a 'morning routine kit' where the products they are likely to use in the morning are supplied as a kit.

This could make them aware of each process that they carry out. The case could also be designed such that removing and replacing each item is step to consider carefully.

The choice of materials would be important, as the way an object behaves, especially ones with few or no mechanisms could easily be altered to allow a different method of use to what could be a straightforward product to understand and use.

The kit could include items associated with the processes with the most perceived senses, as seen in fig.1 - as more senses allow the user to engage with the product more. Existing senses could be heightened, or the behaviour of one sense could trigger another (unexpected) one - similar to what is found in synaesthesia.

Too personal - each person has their own routine

Too pragmatic - the user would soon become accustomed to it like any other product

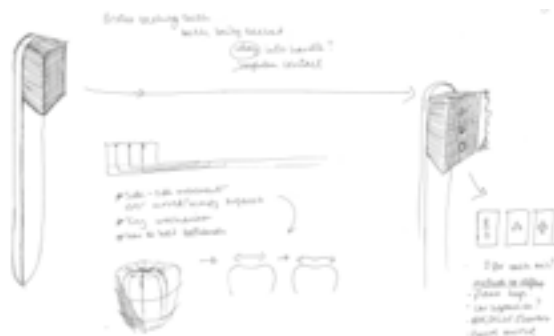
Too disjointed - the possible items don't fit together, therefore making it difficult for anything to remain coherent.



Fixtures

It could be argued that processes that don't involve as many senses, such as switching appliances on/off could allow for an opportunity where an extra sense could be 'added', such as a switch that produces a sound when pressed, or a button that feels different at every use, through temperature or texture, for example.

Other possibilities could include door handles that require turning a different way every time - unknown to the user which way it could be, or a light switch that stops in a different position after every pull:



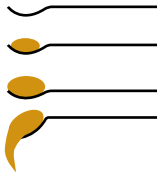
Breakfast

Besides brushing teeth, the most sense varied process/activity could be eating food, in this case breakfast, as suggested by fig. 1. It is the only process (or one of a very few) where the sense of taste and smell both occur and can be worked with in a straightforward manner - trying to apply one or both of these senses to something like a light switch would be excessive and impractical.

Furthermore, it is considered the most important meal of the day (NHS, 2015), and one that is most likely to be eaten at home, at least on weekdays (lunch could be eaten at work, and supper has feasibility for eating out). This, combined with how being mindful in the morning is most effective, suggests to be a powerful enough opportunity of provoking and influencing mindfulness, with room for subtlety and coherency.

What items are involved during breakfast?

hot/cold food and drink
utensils
pots, pans etc.
tableware
cutlery
packaging
appliances such as kettles, toasters, cafetieres.



This lead to ideas such as the following: packaging that requires a methodological approach to opening, such as cereal boxes that must be unstitched, or individually wrapped corn flakes

tableware that requires more than one step to be able to function/use it, such as a dual lid jar, or dishes that react to food put in them



when you get something in a box, it's like a 'what' - it's 'what' when you get something in a box?



Styling

Current design languages



Sheffield:
strong
cultural



Park Hill:
brutalist
contemporary



Urban Splash:
minimal
modern

Possible influence



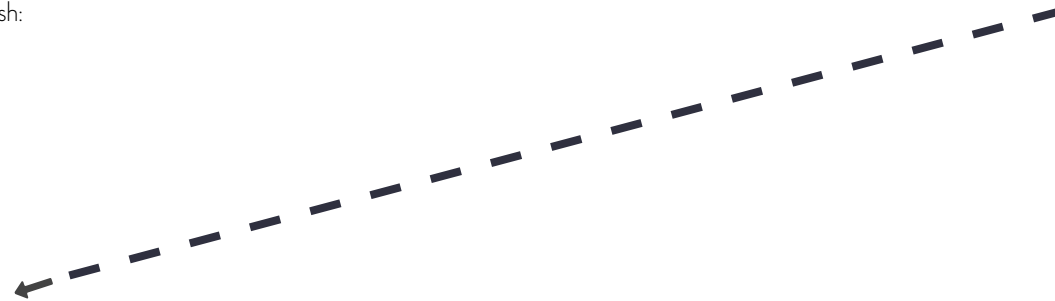
Meditation



Buddhism



Where is it most
practiced?



According to Decoist (2013):

Japan



6

simple, minimalist, closest to
nature

China



7

zen - opulent, expensive,
grand, regal reds, lavish
golds, jade, purple

India



8

colourful, celebration of
life, indian motifs, cultural
(decoist, 2013)

5 Japanese design principles:

Wabi-Sabi

Iki

Ma

Kanketsu - true simplicity achieved through a complex process

Mono-no-aware



Minimalism



An earthenware cup.
It has a **neat**, cylindrical form, with a stepped base. This prompts the user to place the cup in a firm, friendly manner - the speckled texture, neutral colour and stepped base which acts like a foot, gives it **subtle character**.

A glass jug.
A combination of a sturdy base, a spout reminiscent of flowing water and **lack** of handle gives the impression the user is pouring water out of their hands. The narrow spout and act of holding the whole jug gives them control, and allows them to pour carefully.



An earthenware vase.
The **proportionately** tall form has a wide top, giving it a sense of strength and solidity. The high gloss finish contrasts the dark colour, creating a strong reflection and shadow at the same time.

An earthenware bowl.
The small foot of this bowl contrasted with its overall large footprint increases the fragility of the **material**. The exterior satin finish softens the sharp curvature.



A cast iron trivet.
The solidity of the material is reflected in traditional, bold pattern. This is a good example where **aesthetics meet functionality** - the pattern is what items can be placed on. It also demonstrates that pattern can still be used in a minimal way, yet still hold culture and character.

A copper teapot with a Japanese maple wood handle.
It has gradual curvature combined with flat faces where needed the most. The handle is a simple sphere - **no intricate details**. What is to be handled by the user is what 'sticks out'. This minimal form allows the focus to be paid towards the material and function.

Perception

(Oxford University Press, 2015): *The ability to see, hear or become aware of something through the senses*

The way in which something is regarded, understood, or interpreted

It can be said by Gatzky (2014), that the perception of a product is determined by a product's sensory properties. For a product, this requires perception stimuli - form, colour, material and surfaces. When these stimuli are processed, users respond by 'exhibiting behavioural reactions in the form of experiences, actions and evaluations'. Furthermore, 60-80% of all environmental stimuli are visually perceived - meaning that visual perception is the most important user-product interaction.

In other words, the most effective sense that could be applied or heightened is the sense of sight. This could be applied in many ways, such as movement, colour, form and aesthetics.

It could also be said that senses can be used as tools. They help to engage the user with the product, and vice versa. The more balanced, augmented, or de-augmented they are, the greater the height of the experience.



Form meets function



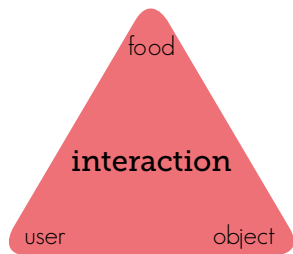
A 'skeletal' set of items, the form being influenced by Japanese minimalism.

What could this include at breakfast?
Cutlery, cups, bowls mugs, plates, saucers, egg cups - a range of items commonly used at breakfast.

What must be questioned, is what is the user actually doing when they are using the product? Each process has its moment before, during and after. The 'during' part is what matters the most, in this case. The way the object interacts with the user as they interact with it, is what causes thought for the present moment.



Dishware



It was realised that interaction was dependent on three things - in this case, the type of food, the user, and object.

For example, a cup could:
Have a rounded base, so the user is required to push small feet downwards everytime they want to place the cup in a flat surface. They would then move upwards with the weight of the cup when it is lifted

have a (shallow) conical base, so that it never sits flat, and is always rolling slightly

A plate could:
move with the action of cutting food with a knife and fork either by rotation or a spring mechanism

have a textured pattern so that an audible sound is made with every scrape of a knife

(the form or pattern could be influenced by traditional Japanese architecture or patternwork)

A bowl could:
have an inner bowl that can rotate, moving with the user as they scoop their spoon around the bowl
work as a cross between how a cup and plate would work, as it can be used to hold both solid and liquid foods

The focus on a cup, bowl plate and mug lead to the decision that objects no longer need to be defined to a specific time of day to drive mindfulness - they can be used for any meal, it's just that they may be more likely to use them for breakfast. This could be seen as an advantage, as it means that the objects will be used more often throughout the day, therefore provoking mindfulness regularly - like a reminder.

This leads to the question of whether the object should really be a set of objects, and if it so, should each work differently, similarly, or exactly the same?



Understand mindfulness

What is happening right now?

I am sat on a chair
The chair is on the ground
I am writing this sentence
I am holding this pen
I am thinking
I am breathing
My legs are crossed
I am looking at this sheet of paper
I am blinking
I am listening to music
I am thinking about what is happening
right now
I am aging as I speak
I am observing

Others are
thinking
working
typing
breathing
sat down
blinking
walking past

This chair is on the ground
The lights are switched on
The doors are being opened/closed
There are items sitting on the desk
The desk is on the ground
The air is still
The air is cold
A computer is on
Posters are hanging from the walls
A carrier bag is hanging off a shelf
There are boxes stacked and balanced
on top of each other
The water in my drink bottle is
gradually warming up
A coffee spill is drying up
A ladder is resting against a wall
My book is open
My laptop is on

This room is resting atop of several
floors
This building is standing in a street
It's getting darker and colder outside
Time is passing by

A 'self-exercise' to help understand and appreciate what going on at the very present moment. What can be drawn from this is that there is plenty going on around us, no more matter how still or quiet the area may be. It helped to realise how many things we take for granted - how we interact with our surroundings, and how our surroundings interact with us. This 'sense of everything' is key to what the design outcome will communicate.

Retain mindfulness

How can an object retain its value of provoking mindfulness?

1. Its method of use cannot be bypassed - no shortcuts!
2. Its method use shouldn't be something that can be learned - once it's learnt, it becomes something that the user gets used to like any other object therefore losing its ability to be provocative after the first few attempts of use.
3. Its process of use should not be a literal challenge, this would result in annoyance or frustration, disrupting a process that could be mindful.

Therefore it could be

simple
subtle
practical
unpredictable

The provoking of mindfulness should occur during the very moment of its use.

Simplicity

Incoherency

As food and drink can exist as solids, fluids, etc, they are each treated differently and accordingly. The texture of the food and the dish chosen for that food vary, resulting in many different ways of eating it. It can further be varied by the chosen utensil.

This means that trying to apply a similar principle to three very different things, i.e. bowl, cup and plate does not work, and any subtle hints in the design that could be used in the design to provoke mindfulness would be lost - due to the form of the dish, or the type of food.

Furthermore, trying to apply a similar theme would mean using some mechanical means to one item, such as a plate, but then not to another, such as a cup, resulting in an overall weak message.



Cups

The focus, therefore, could be applied to just one item. In this case, a cup, or a drinking vessel, could be of choice, because:

It serves only one purpose - to hold a drinking fluid, allowing its form to be simple and focussed.

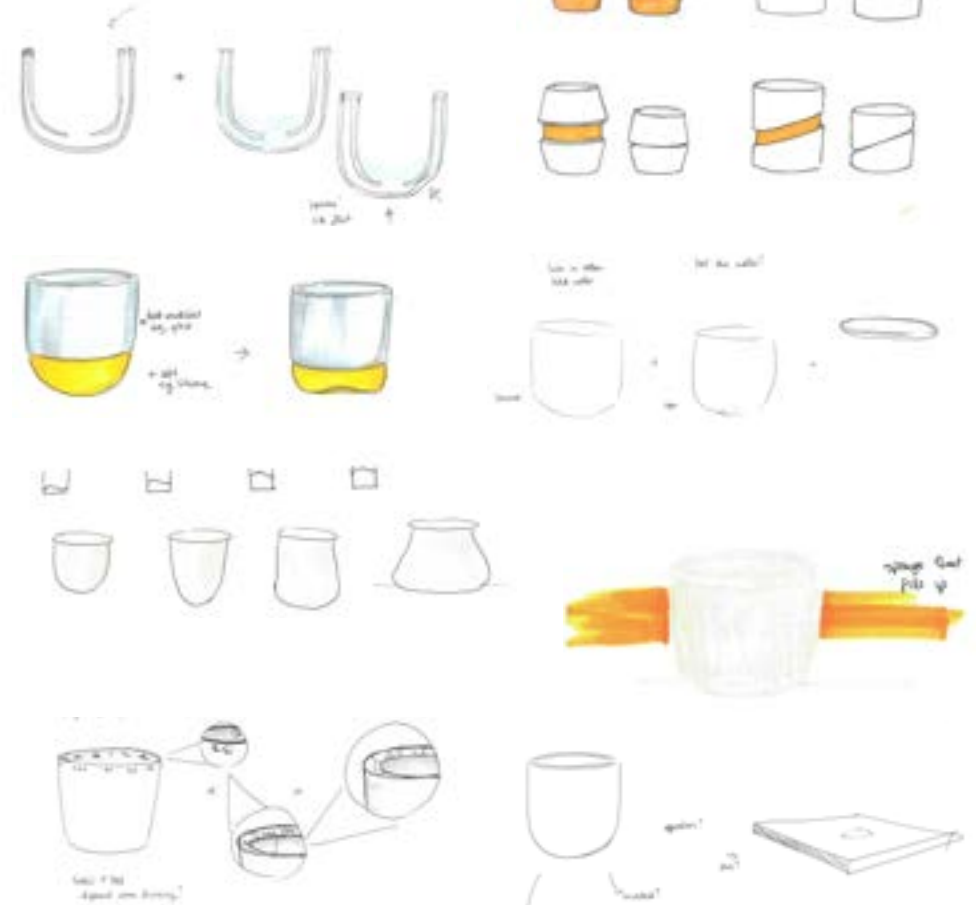
Usually, only liquids are held by it - so the different processes for solid foods do not need to be accounted for.

The only point of contact is between the cup and the user's mouth - drinking straws and other items are optional but unnecessary.



The drinking process: a general scenario

Hold the cup
Lift the cup
Place it on a flat surface
(Continue to hold here, or release)
Fill the cup
Hold the cup
Lift cup to the mouth
Drink
Move the cup down, place it on a flat surface again
Release the cup



Considerations

What will the key principle be across the outcome?
What size?
What materials?
Who will use it?
What will it be used for?
Could there be more than one?

The cup

Principle

This cup stems from the perception of a cup remaining still as you pour a moving substance (liquid) into it, either by holding it, or placing it on a flat surface.

Initially, it was thought that the cup would have an angled base which would cause the cup to 'fall over' with the weight of the water pushing it past its tipping point. When translated into a 3D form a conical base was created. The idea is that the liquid being poured causes the cup to move as it hits the bottom. Theoretically, the conical base should mean that the force of the water hitting the bottom should cause it to momentarily roll around, gently.

Assumptions

As it is a moving object, it would be advisable that the cup should not be used for hot drinks - only cold - as there is a risk of spillage.

It would be made of a water resistant, durable material that also represents Sheffield or Park Hill in a subtle way.

Form

Working from the bottom up, the cup tapers outwards conically approximately one third of the way, and then tapers inwards much more gradually for the next two thirds. The inwards taper would theoretically stop the cup from tipping over completely, and would prevent water from pouring out.

Size

It would be ideal if its overall volume could hold approximately 250ml - an average volume for a drink. The more simple and subtle the product, the more provocative the principle can be. Therefore making it as similar as possible to existing cups would be effective.

User

As outlined from the start, the user could essentially be anyone. The aim is to be able to create an object where as many residents can be 'provoked' as possible - in sense, a more thoughtful user is to be created instead.

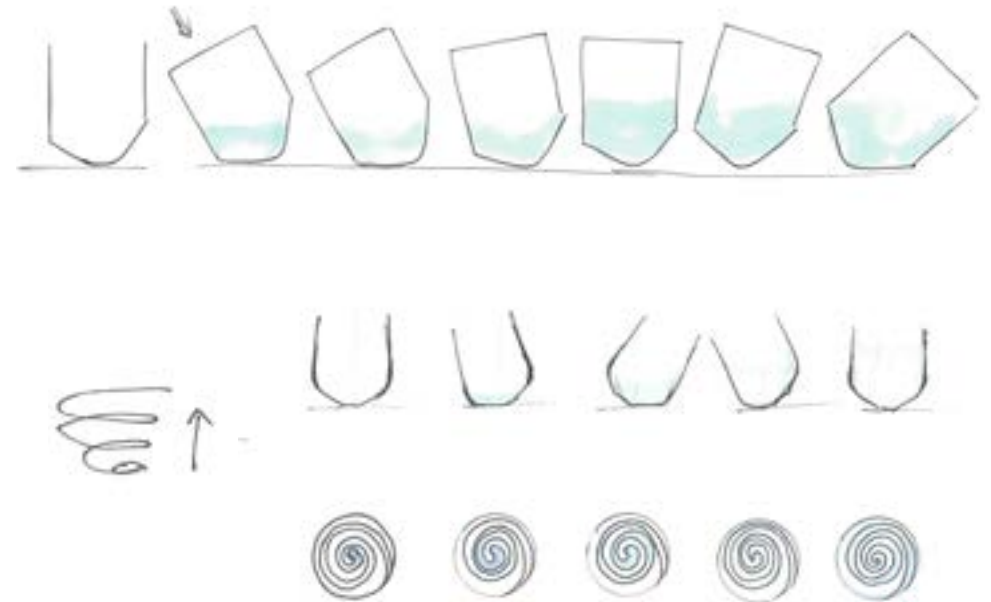
Advantages

Deciding on a cup has meant that there is room for the appearance and functionality to be simple.

The straightforward functionality could further result in a minimal form, as outlined in the styling.

Disadvantages

It could be impractical for the user to have to pour in from an angle, or the rolling action may be disruptive if it's too sudden - these will be clarified during testing.



Form models



Features

Rounded conical base

Low stability - requires interaction to stop it from rolling

Cylindrical internal cup, flat base

Form

A short cup, where the diameter of the cup is roughly equal to the distance between the top of the cup and the beginning of the rounded cone. This proportion makes the cup appear quite stubby, giving it some character.

Its diameter is slightly larger than that of a regular drinking glass, making it easier to hold for some, and harder for others. However, the conical shape that follows under the vessel part of the cup gives room to hold it from underneath, allowing the user to cradle it.

The flat internal base could be an area that could be experimented with more - it is unclear if tapered internal surface would make a large difference to the overall movement of the cup.

Pros

The cup rolls effectively - it is unpredictable as it no-one can know what direction it will fall in when it's placed, but reassuring as it will only go around in a circle.

Cons

The conical bottom is too steep. Even if it had a small flat surface to sit on, the pouring of a liquid causes it to suddenly fall, causing spillage.

Flattened spherical base

High stability - requires interaction for even the smallest tipping movement

Conical internal cup, rounded base

A slightly taller cup, where the diameter of the cup is less than the height of the cup. This proportion makes it appear 'stronger', or more sturdy. The more gradual curvature of the bottom and transition into the sides is more reminiscent of Japanese minimalism, where the form is soft, but still has a sense of purpose.

Although a very similar diameter to no. 1, the taper is much more gradual. There is less room to hold it, but the flatter base would require less support anyway.

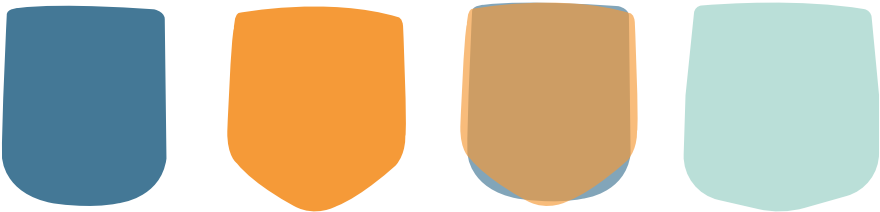
The rounded internal base causes some minor movement when water is poured in, suggesting that future models should have a similar form to allow more movement during pouring.

The cup remains upright, unassisted.

The cup does not move very much when liquid is poured. The movement needs to be stronger for the to be an effect on the user - it must react more.

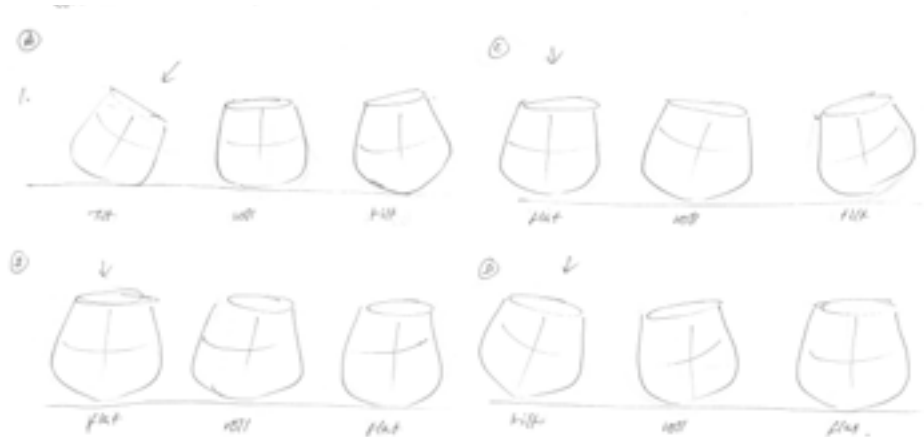
Balance

A combination of the two from models would be ideal, where there is a balance between the conical and spherical form, the strength of the movement when a liquid is poured in, and the size/diameter for ease of grip.



Determining the start/stop points would help to decide how balanced the cup should be.

Having the cup starting in a the tilted position could imply a different message to it starting upright, and the same for the end point, too - for example, (A) would suggest that the only action the cup can carry out is rolling, whereas (C) suggests that pouring a liquid causes a fall and then also a rolling movement. In other words, keeping the same form but choosing different positions can greatly affect the message that the cup is trying to provoke from the user.



Providing a pouring tool such as a jug or carafe with the cup could also help to guide the user to use the cup in the correct way - they could be designed so that one cannot function without the other, although this could complicate the simplicity of the cup and undermine its message by drawing attention to more than one object.



Testing



Aims and objectives

To find out how the rotating action of the cup can be induced when a fluid is poured, by varying the proportions in size, form, weight and its positioning.

To understand how a fluid can affect the behaviour of a seemingly inanimate object

To obtain user feedback, the pros and cons, and any possible improvements and solutions.

Testing the effects of pouring

No weight: as the water hit the bottom, the small point of balance caused the cup to fall over.

Filled base (with/without ball bearings): this stopped the cup from tipping over when pushed, due to centre of gravity, however the large weight meant that the cup was stable enough to not move at all during pouring.

Half-filled base: once again this stopped the cup from tipping over even strongly pushed. There was a slight movement during pouring.

Double wall base with moving weights: this caused a similar effect as above, but made the pouring more interesting for the user as the weighting was hidden, yet moving, and therefore more unpredictable.

Distributing the weight at different points around the cup: a slight wobble occurred at the first stage of pouring, but no movement at all after it was approx. a third full. The positioning of the weight affected the direction of the initial movement very slightly.

'Fan' shaped weights: an attempt to to use the water as a tool to push the cup around - this worked up to approx. half the height of

the fans, after which the water levelled out and acted as weight again, making the cup stable.

Small cup shaped weight in the bottom: different shapes and sizes caused the initial pour of the water to be splashed inside the cup, making causing the cup to wobble slightly differently for every pour. The shape also worked as the weight, combining form and function.

Conclusion

It was realised that the water followed the weight, so that any attempt to make the cup move roll in a circle through the use of the weighting and positioning was ineffective -if anything, the water helped the cup to remain more stable.

For the rolling to really work, a channel inside/around the cup or small pockets of different depths would be required, however this would be impractical and overly complex for a cup. The overall visual effect may be subtle, but the practicalities wouldn't be - how could a fluid be poured from one point if it's simultaneously rolling around? How could it be washed? In what way is a spiralled channel inside a drinking in any way simple?

Any movement in the cup was a general 'wobble' where the direction was quite unpredictable - a manner that made users feel at unease when pouring the water - would it fall over and spill? Or would it stay still?

It was decided that if the unpredictable direction of movement was what caused 'mindful pouring', then that could be used to an advantage instead. If fluid mediums always follow weight, then that could be used to an advantage, too. Could both be combined to work with each other? How?

Unpredictability

Translating unpredictable movement into a cup

It seemed that the best way to create unpredictable movement would be conceal the weighting, such that the user cannot tell just by looking at the cup, what direction it will fall when pouring the initial amount of water.

The fact that it should remain a simple, subtle object suggested that the cup should be a single form to the user's eye, at the very least.



1.

Altering the wall or base thickness of a segment of the cup was an option, although the user may be able to tell by looking at the wall thickness at the top.

2.

This led to a form where the exterior appears uniform in curvature, but internally is not, resulting in a slanted internal base. However, this could mean that the user can simply look inside the cup and roughly judge which way it will tip, again undermining its unpredictable nature.

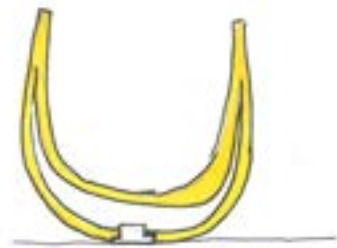
So, the wall thickness needs to vary, but must remain concealed.



3. Solution

A double walled cup, with varying wall thickness internally, but appears to be uniform externally. The user may possibly be able to tell where is heavier by holding the cup, but the rounded nature of the cup should interest the user into placing a spherical based cup on a surface and watching what would happen as they fill it.

Manufacturing/technicalities



Obviously for the weighting to remain concealed, the material should be opaque. If the cup is to appear as a subtle object, then its appearance should be similar to a 'regular cup'. Generally ceramics are used in drinkware, but as glass cups are usually transparent, it was decided that porcelain would be used instead.

The traditional method for batch/mass manufacturing porcelain is slip casting, so will be used for this cup, too. As the cup is double-walled and hollow, a sink hole would be required in the base, meaning that a plug would be required to fill it.

Weighting

From testing, it was noted that the weight in the base would need to be heavier than the total weight of the rest of cup to stop it from tipping over completely during pouring. This would also be the heaviest part of the cup. The thick part of the wall would ideally equate to one third of the weight of the base - heavy enough to cause the cup to start to wobble, but also light enough for the base weight to bring it back again.

Unfortunately, it is difficult to cast porcelain any thicker than roughly 4-6mm, which

is what the thick part of the wall would be. Therefore another material would be required for the base. Coincidentally, the sink hole would need to be filled, so why not use the heavier material there? A small stainless steel plug could be machined, acting as a subtle reference to the Sheffield's history of industry and also complying with the original materials palette. It would be fixed in place using a *silicone* based adhesive to prevent any shock on the porcelain, as it would be the only point of contact with the flat surfaces it will be sat on. This would also have the practical bonus of it being water resistant, making the whole product washable.

Material

It could be argued that an opaque plastic such as could be used

Although ceramics are not a material obtained from the initial materials palette, it is still relevant to Park Hill and Sheffield. The initial typography tour demonstrated many detailed tiled areas, as well as plaques and artworks used to represent Sheffield.

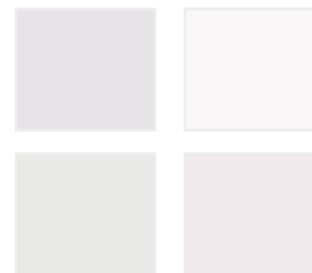
Colour/finish

The simple design so far lends itself to the fact that the cup should remain a neutral colour. From the initial colour palette in this case, the most appropriate colour would be white.

Hints of colour from the palette could be used in the following controlled, minimal ways:



The harsh white could be changed to something more subtle to reflect the character of the cup - various shades of off-white are shown below:



A matte finish would also be most appropriate for the exterior of the cup, to create a soft, minimal look and give facility to a rounded shape. A gloss glaze could be most appropriate for the interior, to reflect the pouring of the water as much as possible and to contrast the matte finish in a subtle way. It could also be used for if small amounts of colour are applied.

Recap

'in order to provoke mindfulness, create an object that challenges perceptions of its functionality, through the mixing or heightening of the senses'

So far, the object that has been created is a cup. It challenges perceptions of its functionality through the way it moves as a user pours a liquid into it, highlighting the process they are carrying out. Out of the five senses, however, only one has been used to challenge the perception of a cup, fully - sight (rightly so, 60-80% of the perception of an object is drawn from visual cues).

It is plausible that touch has been utilised, as the movement of the cup forces the user to hold it in place. When watching users interact with similar models of the cup, it was also noted that its gentle curvature and domed base invites the user to roll the cup around on the surface it is sat on, using the flat top as a place to put their fingers or palms - a momentary appreciation for the fact that the curved object can remain upright on a flat surface.

Taste and smell could still remain with the liquid that is being drunk and can therefore be considered as accounted

for - after all, that was the initial reason for choosing to work with dishware. Therefore, the only sense left that could be worked with is sound. Since the main principle of the cup is to highlight the pouring of a fluid, a sound could be produced at the same time.

Could the cup produce a sound? How?

The 'tap' test: tapping on existing cups and mugs highlighted how much the pitch could vary, by the material thickness, density and size of the vessel, the texture of the cup, the amount of fluid, and the density of the fluid. This idea can also be applied to the sound of a fluid being poured into the cup.

The 'roll' test: different cylindrical items were rolled against different surfaces, such as a rolling pin against various worktops - each produced a different sound, and felt different too, which could be an opportunity to apply to the cup. It also highlighted how fine the texture can be for there still to be a difference in the pitch (see 1. on the next page).

Producing sound

The primary method to do this would be to utilise the bottom of the cup as the area where a sound could be produced - the curvature, as observed from testing, made users feel inclined to roll the cup around on its edge.

There are two main ways this could be done:

1. Using texture at the bottom of the cup to produce a sound against the surface it is sat on. A variety of sounds could be produced by using different patterns on a number of cups.
2. Creating a set of different surfaces, such as coasters, which each have a different texture, but work so that they complement the cup, somehow making the user feel inclined to use them every time they use the cup.

Other methods could include:

3. Making the surface of the cup very smooth (and scratch resistant) so that it picks up noise from any surface it is sat on. An additional adaption could be made where the form of the cup is also able to amplify the sound slightly.

4. Placing (different) materials of varying weights or amounts, again broadening the spectrum by having a set of cups.

It was decided that the first option was the most applicable - it is the most subtle and disrupts the form the least. Placing materials inside the cup would make it too much like existing percussion instruments.

1.



3.



Sound through touch/sight

Deciding on the kind of texture would mean deciding on a pattern to apply to the base. This decision could help to determine how many cups could make a supposed set.

Sound could be interpreted through the sense of:
touch

such as the fine pattern found in records:



or as vibrations, such as this speaker by Jackson McDonnell (2015) called The Ripple - this concept for the hearing impaired allows them to feel music through organised synchronisation of the pins, using an oscilloscope:



or simply, two or different textured materials scraping against each other.

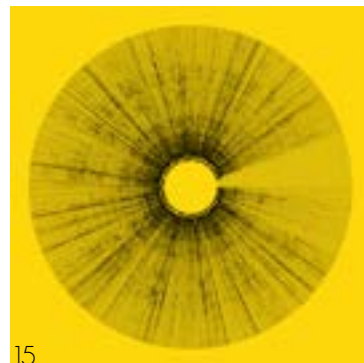
(The most straightforward method could be to have cups of contrasting materials, such as Japanese cedar, stainless steel, ceramic, and glass - utilising the nature of their texture and densities. However this would not be subtle at all - users would quickly learn what sound each one would make just acknowledging the appearance of each cup).

sight

such as music notation, or



sound waves, appearing like patterns - such as the work by computational designer Kyuha Shim (2015) who analysed sound waves in a song and displayed it as a pattern, in the shape of a CD:



Pattern

Looking at sound patterns lead to revisiting traditional patterns, such as Japanese patterns (see cast iron trivet) and Buddhist mandalas (see textured plates).

Rhythm patterns in art

Although rhythm is generally associated with music (sound) a link was found where it is applied visually, too. According to SOPHIA Learning (2015), when analysing visual art in design terms, three things can be searched for: repetition, pattern and rhythm.

Repetition is one 'shape' that is repeated.

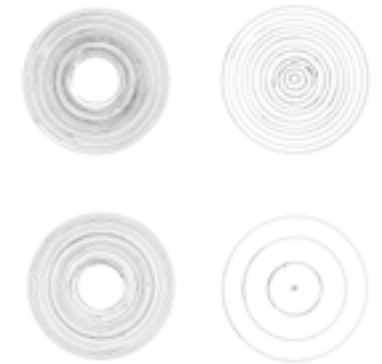
Pattern is a combination of shapes repeated in a recurring and regular arrangement.

Rhythm is a combination shapes repeated, but with variations.

An example was given using a Buddhist mandala, effectively closing the 'research circle':

For example:

Repetition is present throughout, with the use of repeated figures, most evident in the centre. Pattern is found in areas where repeated figures differing in size are arranged in a fixed order. Rhythm can be seen in the black border, where figures differ in size, are repeated, but have variations in their grouping and order.



Would contour lines instead of dots prevent the cup from 'jamming'?



Plaster of Paris textured moulds - the spotted dome (far right) created the most 'textural' sound.



Rhythm

It was further found that there are four main types of rhythm: regular, alternating, flowing, and progressive.

This seemed a very adequate answer to the prior question of how many cups there could be - four.

The four types were visualised in their simplest form, as shown below:

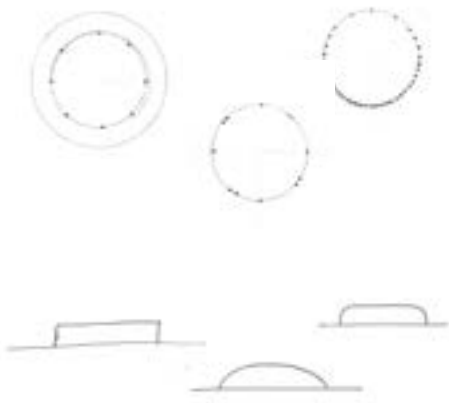
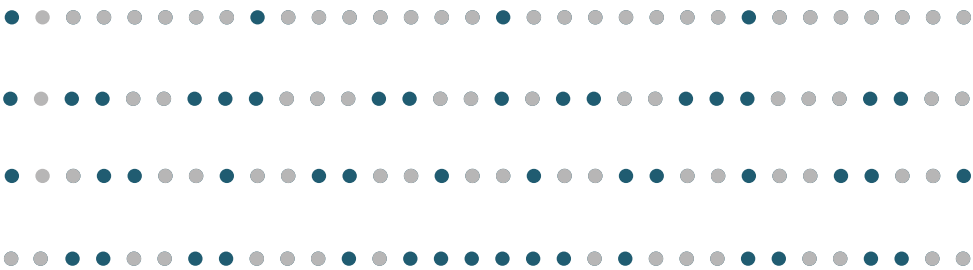


It was realised that when applied physically to each cup, the diameter of the dot made less difference to the sound of the rhythm, than if the distance was varied accordingly instead.



Varying the depth of the dots would not work either, as only deeper ones would make contact with the surface. Similarly, neither would dents work, as the surface area and distance between them was too small, and protruding dots would be in the way once again.

It was decided that the dots would be arranged on the cups in multiples of eight, to resemble music notation.



Circular dots were chosen over any other shape, including lines or small symbols, as they are the most simple shape that can make the most contact with the surface that it's being rolled on. The circle is a continuous form that does not contrast with the form of the cup if it were to be felt by the user, and also produces a gentler shadow, allowing it to be as subtle as possible. Ideally the thickness would be no more than 0.5mm, and following the curvature of the cup to prevent powdering or jamming. The dots can be moulded into the slip cast.



Final
design





A drinking cup that provokes mindfulness in the user, by challenging perceptions of its functionality through heightening of the senses.

By provoking mindfulness, the mental wellbeing of each individual can be improved, thus giving them the ability to grow.

By allowing each person to 'grow' in a positive way, the success of Park Hill can be regained and maintained, as their positive mentality will reflect on the community.



Mindfulness, or awareness of the present moment, has been translated into a cup by focussing on a specific part of drinking process - pouring a liquid into the vessel - and aiming to communicate that back to the user.

The initial contact of the liquid hitting the vessel causes the cup to tip slightly in an unpredictable direction on its curved base - causing the user to be very aware of what they are doing and how their actions affect their surroundings.

Pouring with care would result in a smaller, friendlier, movement. Pouring without care could result in spillage and mess!



Don't worry! The cup won't really fall over. It has a stainless steel base that's heavy enough to stop it from toppling.

It has a secret hidden deep within its walls, - literally. To make it move during pouring, a segment of the interior wall is thicker - but that won't harm its gradually curved, matte porcelain exterior.

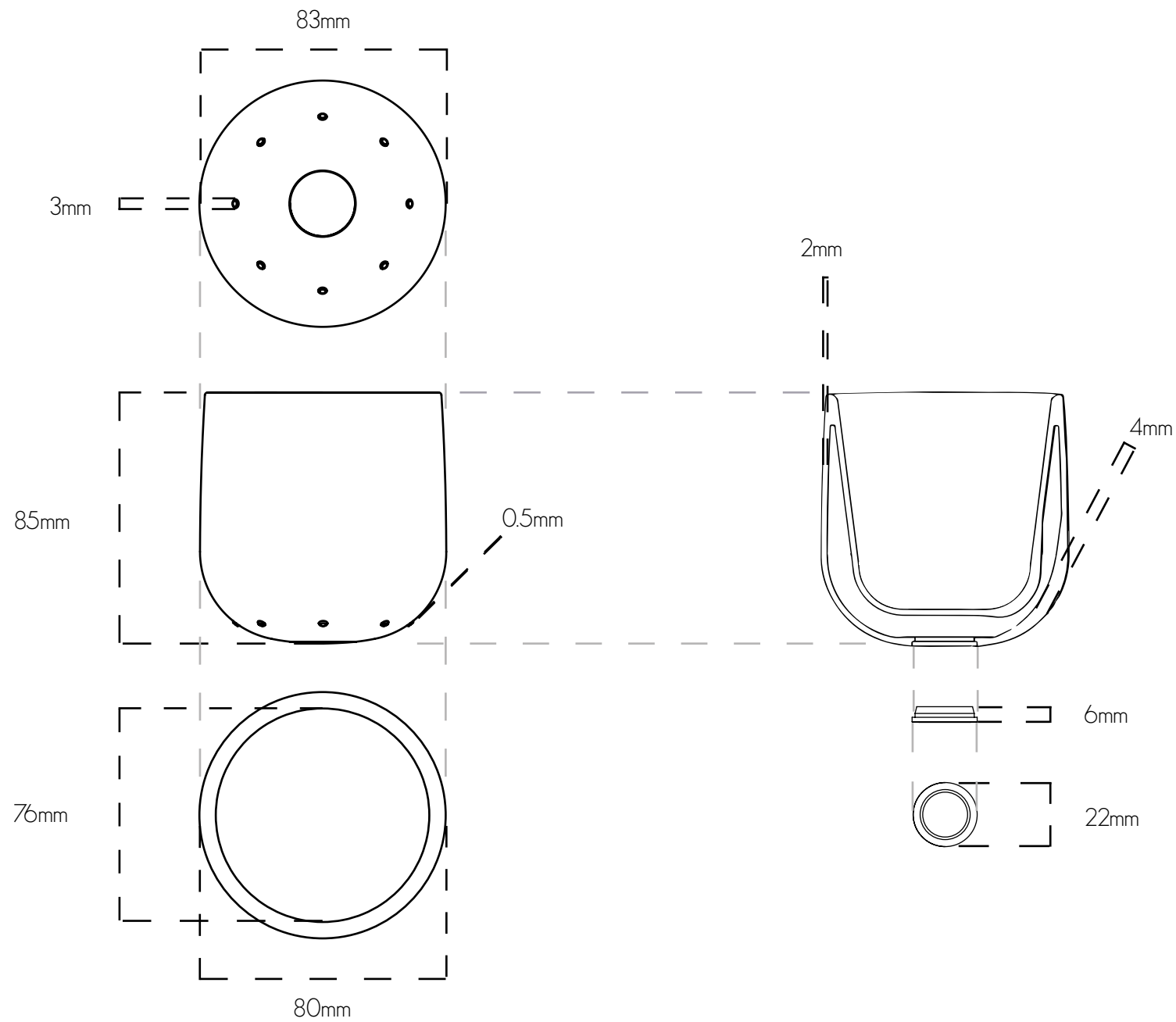


Roll each round bottomed cllup around on the surface they're sat on - hear and feel a rhythm. Watch the drink turn inside. Roll them on different surfaces for a different effect. See and hear if there is difference as the drink is being poured, too.

There are four different types of rhythm, hence four cups; regular, alternating, progressive and flowing. Combine them to make new patterns.

Think about the process.

Dimensions



Evaluation

Multi-disciplinary group-lead research tasks and discussions lead to the decision of the what the proposal should be - ability to grow - in response to the overall theme of Work, Rest & Play.

The chosen theme was satisfactory such that it was broad enough to explore a wide range of themes for each person in the group, across disciplines.

The chosen route of looking at scientific reasoning behind meditation lead to interesting influences and inspiration. It also provided a strong backbone for the reasoning throughout the project (the use of senses and how they affect perception).

The project provided an opportunity to actually experience meditation and mindful thinking first hand, therefore benefitting the project in the most direct way possible. It also encouraged deeper thinking into processes that normally be ignored - this pattern of thinking could be beneficial to future projects, broadening the mind.

The design outcome of cups was no surprise, but informative, as it was realised that even the most simplest of products could have great meaning and reasoning as to how they came about to be.

The form, function and aesthetics of the cups seems to be quite successful, when referring to the design direction and specifications - the cups are a simple, minimal form and upon watching users with test rigs, (the testing helped a lot throughout) there was an increased mindfulness during the process.

An improvement that could be made is the dots that produce different rhythms at the bottom of the cup - time restrictions meant that the form of the dots could not be adjusted much more, and the the patterns used weren't explored enough.

Challenges in this project were broad and varied, including liaising with peers from different disciplines, making critical decisions within a short space of time, and learning/understanding large amounts of new information in a short space of time.

Overall, the process and outcome of this project has given great insights into Sheffield, how to work with unfamiliar disciplines and areas, how to tackle problems by looking from as many angles as possible, and how to translate thought-provoking ideas into a physical object.

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