



**SLOW DESIGN REVISITING SLOW
FOR WELL-BEING LIFE**



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FOR WELL-BEING LIFE**

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Abstract

Nowadays, people have started to disconnect from their daily lives little by little through the effect of 'Fast'. When moving fast becomes the default in this world, 'Slow' becomes even more important to people's lives in terms of supporting living. The faster things become, the more we need to slow down our lives. People have started to be more concerned about their living and finding ways to reconnect them to the world. That is how slow movement enters the discussion.

In this thesis, the author intended to design objects to help people engage and reconnect to their daily activities. The process of design involves learning about slow design from many researches and case studies in order to create objects that can help people to slow down. Following this, the author found the meaning of slow and found a way that can affect people by applying this process in their lives. A slow grinder was designed based on understanding from research, and sketching was initiated for several versions of ideas, including 3D. At the end of the result from the entire process, the final prototype was created by focusing on details such as choosing materials, designing, processing, and finishing the small details.

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บทคัดย่อ

ทุกวันนี้ผู้คนเริ่มที่จะตัดขาดจากชีวิตประจำวันทำละนิดจากผลกระทบของ ‘ความเร็ว’ เมื่อความเร็วกลายเป็นความพื้นฐานของโลกใบนี้ ‘ความช้า’ จึงมีความสำคัญต่อชีวิตผู้คนและสนับสนุนการใช้ชีวิต เมื่อสิ่งทีเร็วมีมากยิ่งขึ้น เราก็คงต้องการความช้าเข้ามาในชีวิต ผู้คนจึงเริ่มที่จะให้ความสนใจกับการดำรงชีวิตและหาทางที่จะเชื่อมต่อกับพวกเขาเข้ากับตัวพวกเขาและโลกใบนี้อีกครั้ง ซึ่งนี่คือจุดที่การเคลื่อนไหวแบบช้าเข้ามามีส่วนร่วม

ในเล่มวิทยานิพนธ์เล่มนี้ ผู้เขียนมีความตั้งใจที่จะออกแบบสิ่งของที่จะช่วยให้ผู้คนสนใจและเชื่อมต่อกับกิจกรรมต่าง ๆ ในชีวิตประจำวันของพวกเขาอีกครั้ง ผู้เขียนได้เรียนรู้เกี่ยวกับการออกแบบอย่างช้าผ่านงานค้นคว้าและตัวอย่างมากมายเพื่อที่จะสามารถสร้างชิ้นงานที่จะทำให้ผู้คนช้าลง จากนั้นผู้เขียนได้พบความหมายของความช้า และพบทางที่จะสามารถส่งผลของความช้าไปสู่ผู้คนผ่านกระบวนการต่าง ๆ ในชีวิต ที่บดอย่างช้าถูกออกแบบจากความเข้าใจจากการค้นคว้าและเริ่มต้นที่จะร่างภาพไอเดียออกมามากมาย และผ่านการสร้างโมเดลจำลองสามมิติ ผลสุดท้ายจากกระบวนการทั้งหมด ชิ้นงานที่เสร็จสิ้นถูกสร้างออกมาผ่านความเอาใจใส่ในรายละเอียด ตั้งแต่การเลือกวัสดุ การออกแบบ กระบวนการสร้าง และการเก็บรายละเอียดต่าง ๆ

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Chapter 1

Introduction

1.1 Background

Today, a world is moving faster. Because time is the essence of every human being that is limited. Humans develop everything in their life to be better and faster to save their time. The idea of 'Slow' goes against the trend of today's society. People are massively disconnected from their selves. Their interactions with digital devices have increased by the day. So, we have the conceptual birth of a new design paradigm where the role of design is to balance society, cultural, and individual needs with the well-being of the environment. Slow design can send slow culture through objects.



Figure 1.1 People disconnecting from their life

Source : Taylor, 2015

What is slow design. According to (Bierut, 2006), slow design is used for the evolution our nearly unchanging daily life. When we talk about slow, we are not only talking about speed but also thoughtfulness, deliberation, and tender loving care. Slow design isn't a new movement but has been around for centuries. The current generations seem to have discarded it for fast trends. Slow design can be defined by six principles

developed by (Carolyn & Alastair, 2008) that are reveal, expand, reflect, engage, participate, and evolve. These are not exactly rules for slow design but rather than guide for slow design. The principles depend on what way designer need to explore. It can have more or fewer principles. The activities that we use slow design are called ‘Slow movement’ such as slow food, slow fashion, slow living, slow gardening, slow traveling, slow photography, etc. The slow design creates objects people engage more in each daily activity. Meanwhile, it needs to gain some benefit back by spending more time, such as experience, knowledge, and feeling. In many daily activities, we are already overlooking on some details of them, and sometime it makes us lose the essence of life. These raising questions, what we are doing too fast? do we focus enough on what we are doing? These are the areas where slow design will make them more sustainable.



Figure 1.2 Fast Social

Source : Sahoo, 2012

In this thesis, after I fully understand the meaning of Slow design, I intend to design objects based on the direction of the key that I have learned in my research.

1.2 Objective

1.2.1 Design a collection of objects that help us fully engage in everyday activities and reconnect with ourselves.

1.2.2 Design an object that can slow people down in their activities.

1.3 Scope of the study

1.3.1 Study slow movement and find how to reconnect people back to their lives.

1.3.2 Find the information about slow design and the case study from designers.

1.3.3 Learn about how to use the benefit of slow design in people, objects, and structures from many case studies.

1.3.4 Analyzing and designing slow design to final prototype.

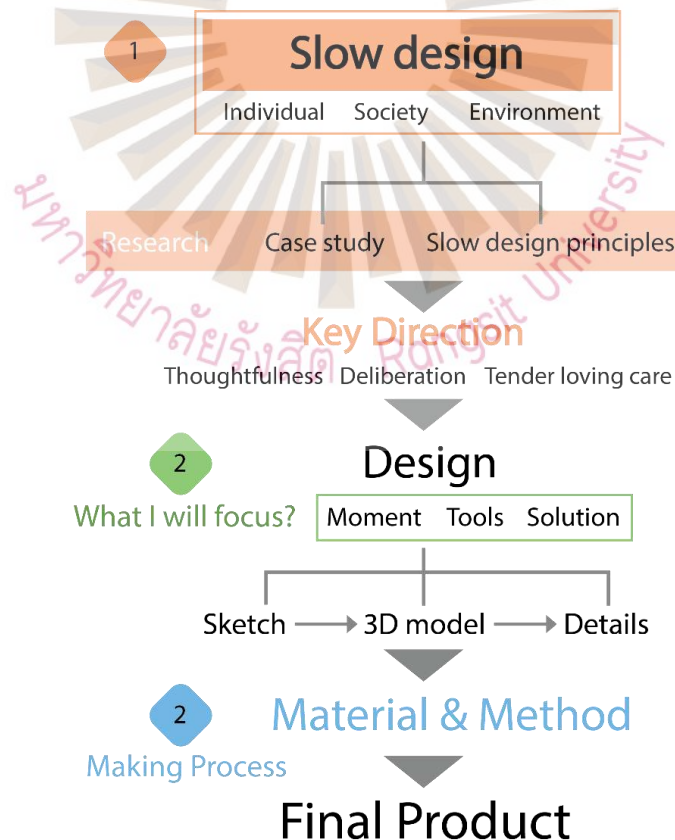


Figure 1.3 Framework

Chapter 2

Literature Review

2.1 Concept of slow

2.1.1 Slow identity

“A Slow approach to identity begins with awareness of self, context, and connections to others: from the intimate scale of mind and body, to experienced environments and interpersonal relationships. It creates a bridge between people’s inner and outer dimensions, helping to bring them into fuller resonance with the world around them.”, (Carolyn & Ana, 2014). by thoughtfulness and deliberation and not overlooking detail of their life. Slow is not only about time or speed but also about process, action, and feeling.

As technology has accelerated, so has the speed of life. Conversations, information, and news travel faster than ever before. People are expected to be connected 24 hours a day, seven days a week. "Hustle culture" has people working to the point of burnout. But the faster things become, the more we want to slow them down—and that's where slow living comes in (deBara, 2019).

2.1.2 Slow design principles

The principles are the result of researches and conversations with design thinkers and also take inspiration from the slow movement and the debate on sustainability. These design principles are not absolute rules, but rather a guide for slow designing and allow designer to re-interpret them and arrive at their own concept. Carolyn and Alastair (2008) are explained slow design principles into 6 principles:

1) Reveal

Slow design reveals experiences in everyday life that are often missed or forgotten, including the materials and processes that can be easily overlooked in an artifact's existence or creation.



Figure 2.1 Surprising under the teapot

Source : Grosse, 2013, p.32

Example:

The teacup as shown in Figure 2.1 that people will find different patterns under each tea set while picking up the cup. This method will make people have more intention on the details that they rarely focus.

2) Expand

The slow design considers artifacts and environments actual and potential “expressions” beyond their perceived functionalities, physical attributes, and lifespans.



Figure 2.2 Reclaimed Wall

Source : The Reclaimed Flooring Company, 2019

Example:

The wood walls will make people pay more attention to its texture and make them think about the source of that material. This form of interaction takes place in human beings, objects, and spaces.

3) Reflect

Slow Design artifacts/environments/experiences induce contemplation and reflective consumption.



Figure 2.3 Egg timer

Source : Flying Tiger Copenhagen, 2015

Example

An egg timer is used to tell the user when the time they set is coming. At that moment, the egg timer is talking back to the user.

4) Engage

Slow Design processes are open-source and collaborative, relying on sharing, cooperation, and transparency of information so that designs may continue to evolve into the future.



Figure 2.4 Color lab

Source : The Reclaimed Flooring Company, 2019

Example:

Let people become parts of the design by making a color experimental for using in their products. This method makes people discovering something new and understanding what they are doing.

5) Participate

Slow Design encourages users to become active participants in the design process, embracing ideas of conviviality and exchange to foster social accountability and enhance communities.



Figure 2.5 Tea bag

Source : Hibiki, 2022

Example:

The user will participate in the tea process. They will decide the concentration of tea and putting in and out of the tea bag by themselves and become parts of the design.

6) Evolve

Slow Design recognizes that richer experiences can emerge from the dynamic maturation of artifacts, environments, and systems over time. Looking beyond the needs and circumstances of the present day, slow designs are (behavioral) change agents.



Figure 2.6 Coffee watch

Source : Berlin, 2022

Example

Using coffee ground that already is used to make another object. This method is increasing value and meaning into the design.

2.2 Case study

2.2.1 Reading machine

The reading machine is created by Connor Muething. (Bjornard, 2015) It can control the rate and way at which they see and read the text. The product can create meaningfully and make connections between disparate paragraphs is possible due to the novel form. It creates a text in which the viewer decides where to start or end. Text on the paper is written in indifference size. The bigger text makes people read fast, and the smaller text makes them read slower. This intentional involvement creates greater reward, and by investing time, the design becomes richer, and the experience becomes more complete.



Figure 2.7 Connor Muething reading machine

Source : Bjornard, 2015

In this case study, we can see that designer is very concerned about details and trying to give the user a new viewpoint of reading. The user also becomes one of the designing parts by choosing where they need to start reading. The size of text is depending on emphasis of the content; smaller text is used for the details that need to slow and need more attention to read. The product shows how the designer understands the connection between object and user and uses them to design this reading machine.

2.2.2 Cirkelbroen bridge

This bridge is designed by (Eliasson, 2015). Instead of a direct connection between two points, the bridge aims to slow people down by creating a meeting place with a different city perspective. The Cirkelbroen bridge celebrates pedestrians, and it reflects daily life and intimacy. Copenhagen's harbor was once a center of maritime activity, and Cirkelbroen is a testimony to that history.



Figure 2.8 Cirkelbroen bridge

Source : Eliasson, 2015

This slow design bridge shows us about using more space and more time to have more benefits. In slow design, we talk about how good that slow is, but we need to concern that making people spend more time on those activities or objects should get some benefit back as this concept to the bridge.

2.2.3 Sasa clock

The Sasa Clock™, which was designed by Thorunn Arnadottir, encourages us to relax and let time flow. As the carousel rotates, a bead slips down the cord every 5 minutes. The last bead to have dropped indicates the time. The concept is to let people control time rather than it controlling them. We also need to slow down and sometimes relax when we need to rest. Sometimes to roughly know the time is better than exactly knowing the time and we need to liberate ourselves from the clock completely. In these cases, simply remove the beads from the carousel and wear them as a necklace (Estes, 2010).



Figure 2.9 Sasa Clock

Source : Estes, 2010

This idea shows about that way that we can using and control the time that suit with our period of life. When we are in hurry time such as working, booking seat at the airport, and others, we focus at the time in minute level or sometime even in second. When we are in relaxing time such as watching movie, listening to music, playing game, and others. We will use time roughly than normal. In the other word, we can manage how we use time in our daily life. So, this is the concept that we will engage more about time our life.

2.2.4 Shadow Play Clock

The shadow play clock is a concept from design studio breadedEscalope. (Howarth, 2015) When you approach the clock and touch the middle of its face, it projects two shadows mimicking clock hands. The shadows point out the current time while a small LED blips around the edge to show the seconds.



Figure 2.10 Shadow clock

Source : Howarth, 2015

This is good slow design case study that show about slow process, participation between user and object and how to using as decoration product. The example of concept like this can be saw in our today life; we need to charge our phone at least 1

time per day. That means, we have interaction with phone every day. As this shadow play clock, that we need to interact with clock to know the time. By doing this, this clock will not be overlooked in the user daily life.

2.2.5 Hiracle dipping dish

The set of beautiful dipping dishes with the design of sakura or cherry blossoms are created by Age Design (Young, 2013) The design takes common dishes to dress them up by turning the sauce into a beautiful flower formation. The size of the flower shape is depended on the amount of sauce that is added by people. The design grab attention of the user by the process and increases ambiance of eating food.



Figure 2.11 Hiracle Sauce Plate Set

Source : Young, 2013

The design makes people have more focus on their daily activities with some common objects that people overlooked. Normally, dipping dishes are used for putting sauce and dipping some food. People mostly don't focus much on this process and only enjoy the taste of food. But this design can make them have attention to adding and dipping sauce by giving them some impression. The sakura shape can also tell the user

where is the design comes from. It gives the user about engagement and discovering concepts at the same time.



Figure 2.12 Adding sauce on sakura dish
Source : Young, 2013

2.2.6 Lava lamp

Lava lamps are the product that both children and adults can get enjoyment from looking at them (Corter, 2021). It promotes a sense of calm and concentration by watching the wax float from the bottom to the top and then back down again. And also the soft light that makes people into a good mood. The movement of nature and light are also used for reducing stress from the people, such as lava lamps (Figure 2.13), fragrance flow of frankincense (Figure 2.14), jelly fish tank by the bath (Figure 2.15), and other products with either random or replete movement.



Figure 2.13 Lava lamp
Source : Koelemeijer, 2017



Figure 2.14 Frankincense
Source : Giaonhan247, 2022



Figure 2.15 Jelly fish tank in bathroom
Source : Tripadvisor, 2017

Chapter 3

Materials and Methods

3.1 Design concepts

Slow is the opposite word of fast, technology, and digital. It isn't a complicated word, but it's something that is common and simple. The word slow in this thesis will be in the concept of simple, detailed, precise, and concentrated. The concepts aim to make people engage in the detail and process of objects and activities. Slow design is the best way to put slow into people's life.

3.2 Design process

3.2.1 Sketch design

I start by trying to interpret the word slow. If we talk about 'slow', the first thing that relate to this word is 'time'. Then, I think about what object can represent a time for slow design. In this case, I choose a clock. The clock is an object that we use to measure hypothetical things such as time. From the inspiration of the case study Sasa's clock, I am trying to use the time to set our life schedule. But we need to use time in the right way. This concept inspires me to design a new slow design clock.

From my research, time is in every daily activity and also a good word to represent the word slow. In many parts of the world, time is not parsed into seconds or even minutes. In some places, people perceive time as speeding up when activities speed up and slowing down when it's time to rest (Estes, 2010). The concept starts with roughly knowing the time. Sometimes, it's better than exactly knowing the time. This design focuses on slowing people down and reducing stress in their daily lives.

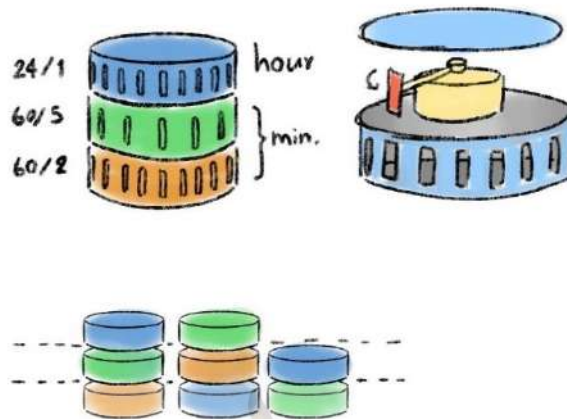


Figure 3.1 Slow layer clock sketch

The first idea as shown in Figure 3.1, the clock will separate into many layers. Each layer will have a different scale of time. Users will decide how to use them, putting the layer they need to know on the top and putting away the layer they don't need to know. People will read the time by counting the system. The mark will move around pass the channels and let people read time by counting scales to know the position of that channel. The channels are telling time roughly, such as the minimum scale of a minute layer is 5 minutes. Through this concept, I try to develop this idea to make people disconnect from their phones. It became 2 more ideas.

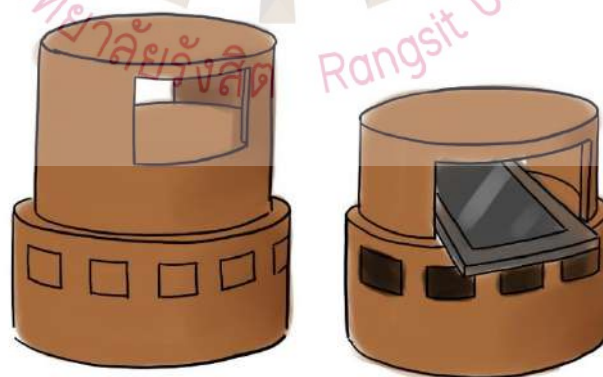


Figure 3.2 Cut off from mobile phone idea sketch

The first developed idea is using phones to become part of the clock by putting them on the channel. The clock cannot be read without a phone. By putting the phone into the channel, the cover will prevent people from their phones.



Figure 3.3 Big structure clock sketch

The second developed idea is playing on a large scale. Using a large scale and making a clock as a structure will grab people's attention by its size and make people walk around them. And also, size can represent the type of time; hours can represent in big scales, medium for minutes, and small for a second.

After I research more about slow design, I have new viewpoint of slow that is deeper go into human daily activities. In the relaxing zone, there are many activities that can be applied slow to them. I research about activities that people do in their free time for relaxing. Finally, I found an activity that I am interested in and inspire me that is coffee making process. The concept starts back to how to slow down people. I aim to affect slow into people more than objects. I design to use the music box concept in this idea. By using sound, the speed of the grinding could be controlled. If the user rolls the handle too fast, it would give an annoying sound. In the other word, if the user rolls the handle slow or in the right speed, it would give nice music.



Figure 3.4 Mechanical inspired

I use the music box mechanism to support this idea. When we turn the handle, the pins on the drum will play music from the comb. I think this mechanism can be combined with coffee grinder by a similar mechanism, as we can see in Figure 3.4. This kind of sound can also make people have a good mood.

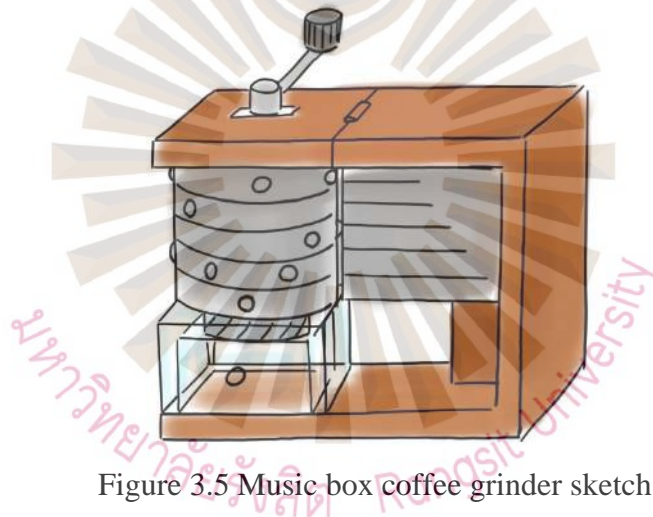


Figure 3.5 Music box coffee grinder sketch

Form the second idea, I found that the mechanism of the concept is too complicated for concept of slow that I want. Then, I tried to redesign it by deleting some details and expanding the important details to be more suit with concept of slow design. From the idea of grinder, I'm paying attention more in the process of grinding and others slow food movement. Grinding is the process that can be found in many kinds of slow food movements such as the green tea making process, grinding sesame, making coffee ground, and others. People grind different ingredients and different types of grinders. This is the process which we can engage and focus on our actions. So, I choose the grinder and started to understand deeper more about the process of grinding.

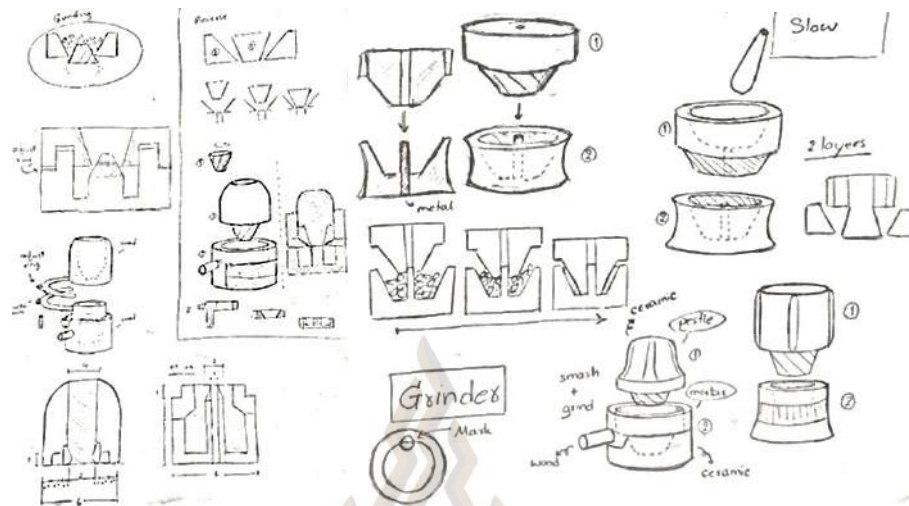


Figure 3.6 Sketches of slow grinder concept

In Figure 3.6, it shows about my concept sketches. I start to design these ideas by an understanding process of the coffee grinder and use them as the base concept of the slow grinder design. I try to design by focusing on the main concept of a slow ideas and manual process of grinder. For slow process, commonly designer will put labor saving part into the product to make people use it more comfortable and faster, but I design to cut that part and use just round or cylinder shape for handle part to slow people down in process. After that, I bring the main parts of grinder and redesign them into the key of designing that make grinder more engageable from user; rings that adjust the levels of grinding instead of small adjusting screw under the coffee grinder, combine many methods from other objects such as coffee grinder and mortar, putting handle on the grinder base to let user hold the grinder base more stable, and expand some parts to make people more understanding of the products.

3.2.2 3D Model

I separate the grinder design into 2 parts that are using moment and not using moment. By putting the word slow into grinding, I designed to make the grinder have a slow process when used to let people engage in their actions. Moreover, when we are not using it, I design it to have a nice and interesting shape that it's can be used as a

decoration which can get some attention from the people who see it. These are the concepts that I use to design my slow grinder.

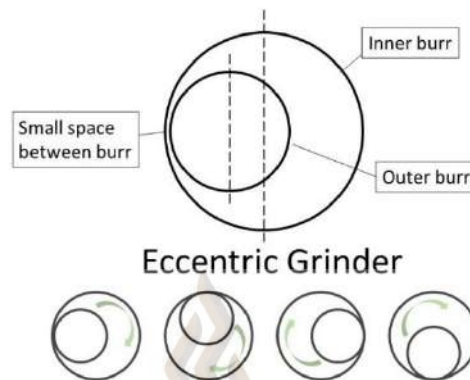


Figure 3.7 Eccentric system

I design the grinder mechanism by getting some inspiration from coffee grinder and mortar and studying their details. Finally, I combine their mechanism and add the idea of an eccentric as shown in Figure 3.7 to become my own mechanism. They are two circles which different diameter. The bigger circle shape has burr inside and smaller circular has burr outside. Between two burrs, the size of grab will depend on types of ingredient and finely level that is needed. When grinding, the small circular will be moving around inside the big circular and crush ingredient.



Figure 3.8 Outer shape sketches

For being a decoration, the outer shape should be beautiful, precise, and interesting to grab the attention from the people. I design many different outer shapes as shown in Figure 3.8 by getting inspiration from many sources. The shape will help people possible to think of something other than only a grinder. So, I design by using shape from other objects and free form shape. Finally, I choose one of the list which I think it is the best shape to represent slow design in this thesis.



Figure 3.9 3D model of base

I develop the shape by adding some more details; the size of the hole and base, shape of the pan hole, and fillet on the edge that I need. I also making 3D model from these details and prepare for making real prototype.



Figure 3.10 3D model of handle

Figure 3.10 is the 3D model of handle with eccentric burr part at the bottom. The circle base of the handle has the same size of the hole on the base in Figure 3.9.



Figure 3.11 3D model of pan

The shape of the pan should perfectly fit in the hole on the base. In side the pan, it has cylinder wall which has inner burr fitting inside.

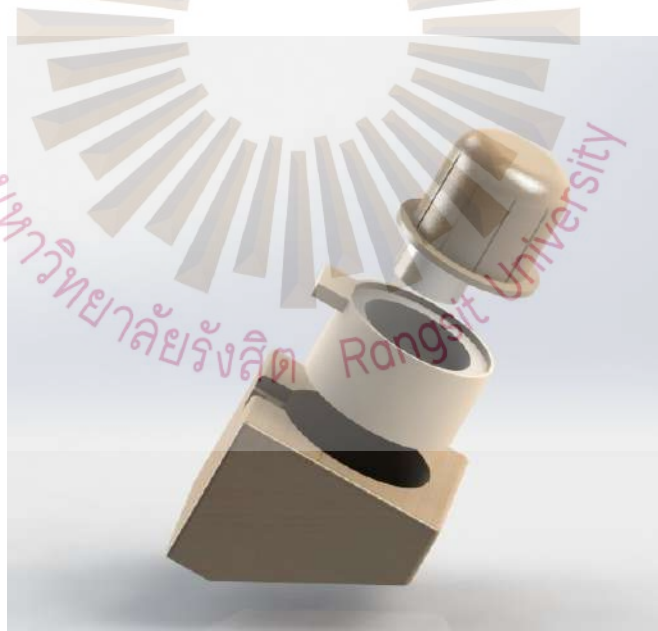


Figure 3.12 3D model of all components

All of the parts are on the same axial except the eccentric burr under the handle.

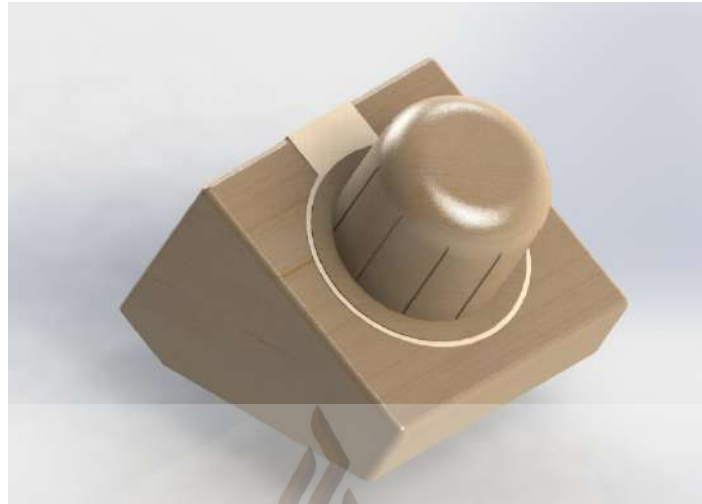


Figure 3.13 3D model of assembled

This is the overview of the assembled parts that will be shown when using as a decoration.



Chapter 4

Results and Discussion

4.1 Principals of design

Slow design focus on the simple concept of both shape and mechanic to let people easy to absorb details on the product. The grinder should be used as a tool and decoration to have the most benefit from itself. Every detail on the product should be clean, simple, interesting, and precise, which supports the concept of slow. Moreover, the material used in this product should represent natural.

4.2 Design components

This grinder has 3 main parts that are base, pan, and handle. These parts can be unassembled to keep and clean.

4.2.1 Base

At the bottom of the base as shown in Figure 4.1, I cut a slope to make girder lean forward a bit. The advantage of this slope is,

- 1) To makes user feel more practical when using with their hands,
- 2) To be more designing and interesting than normal square box,
- 3) When adding the ingredient, the slope will help to let them flow into the same side and make burr grind more effectively.



Figure 4.1 Base part

4.2.2 Pan

The ingredient will contain in the pan and circle inner burr. This grinder is designed for an individual use by designed this part to have a small space. For example, if the user wants to make a cup of tea, they can make tea powder that enough for one cup each time. The groove of the burr of two parts (pan and handle) will tilt on the opposite side as the common design of a coffee grinder. The pan is able to be removed for cooking or boiling the ingredients. In this part, I bought the pan instead of making them because I found that this pan is very perfect size to fit with my design and it is already created for cooking that we can use for heating spike of ingredient after grinding.



Figure 4.2 Pan part

4.2.3 Handle

For the handle, user need to put their hand on the top and slowly rotate it for grinding. At the bottom, it has small circle part of burr as shown in Figure 4.2. The position of eccentric circular depends on size of grab between burrs. The large fillet on the top is made to feel comfortable for the hand.



Figure 4.3 Handle part



Figure 4.4 Burr part under handle

4.3 Detail and structure

In this product, I decide to use 2 types of material. The outer parts will be made from wood. I choose long small planks to cut and glue it together as a square box, and the burr parts will be made from ceramic. Because slow is the opposite of fast, technology, and digital, wood and ceramic are the good choices in this case as a natural material, as shown in Figures 4.5 and 4.6.



Figure 4.5 Wood detail

This is the detail of plywood that is used to make this product. It has different detail on each side. By crossing the wood, the pattern would show in different view on each side too.



Figure 4.6 Ceramic detail

The detail of the ceramic is the same on both pan part and handle. And also, the process of making burr and sand paper finishing are the same.

4.4 Usage



Figure 4.7 Usage infographic

This is an infographic that shows components, how to use them, and features. The component also shows how to combine all parts. On how to use, use short words that are added, grind, and get on the feature show what users can do after using the grinder.

This also can be explained the way to use this product that shown in Figures 4.8, 4.9, 4.10, 4.11, and 4.12.



Figure 4.8 Step 1 - Prepare the base

Setting the base by turn the pan hole side to facing with user. The hole of the handle of the pan should be on the top.



Figure 1.9 Step 2 - Setting up pan

Putting the pan in the hole on fit side. After that put burr into the pan and make sure you put it in perfectly.



Figure 2 Step 3 - Put the ingredients in

Adding the ingredient inside the pan. It will slide in to the bottom by the slope. Use your fingers spreads ingredient and makes sure that you have enough space for putting eccentric burr part.



Figure 4.11 Step 4 - Rotating the handle

Putting the handle part on the top of the pan by keeping the eccentric burr on the top and is in the space that is prepared from the step 3. When everything is setting up already, you can start to rotate the handle for grinding.



Figure 4.12 Step 5 - Got the spike of ingredients

Finally, you will get spike of the ingredient. Taking out the handle and burr, you can bring the pan with spike to cooking or boiling.

4.5 Final prototype



Figure 4.13 Overall final product

For making a final prototype, I started making the base by putting planks cross on each layer and gluing them. It will create an interesting pattern of wood on the side of the product. The advantage of doing this is the product will stronger by crossing grain and it's proof that designer pay attention to detail in material handling. I did this on both base and handle before cut and lathe them. After that, I sand all edges to make fillets look more precise. On the handle, the fillet will be larger than the other edge to make it comfortable for the hand. I also finish the edge inside the hole in the base to fit putting the pan inside. About burr, I create burr by using the pattern on other objects push in the ceramic on both sides. Then, I measure space of the grab between them.

All of these details of the product represent about slow that I have learn during thesis process and what I understand such as material, pattern, fillet, using method, and shape.

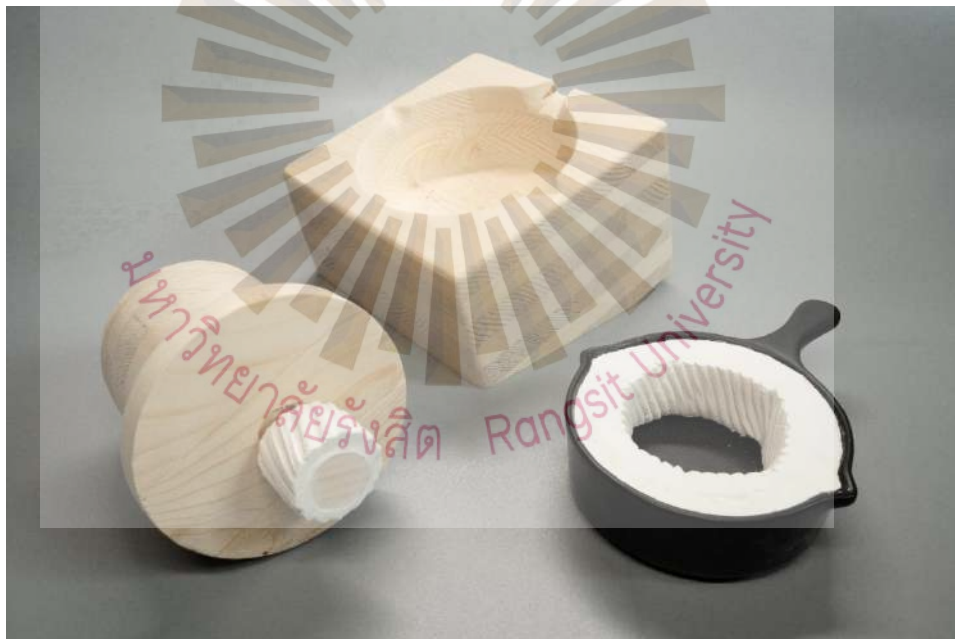


Figure 4.14 All parts of slow grinding

Chapter 5

Conclusion and Recommendations

5.1 Conclusion

The first time, I understood that slow is just about spending more time on each activity. So, I tried to design a slow clock to represent the concept. But after I go deeper into the slow design, I found that slow design isn't only about time. It's a process that affects slow to people from both inside and outside by details, process, knowledge, and meaning. The benefit of a slow concept will happen when people start to engage in the details and understand what they are doing. By doing that, they will go deeper into the slow world and get back the essence of their life.

At the end of the entire process, I found the importance of slow movement. People use slow to reduce their stress in daily life and make it become part of our life. Slow design is a very useful method for thinking and making slow objects. We can adapt the slow design process to any activities that let us have a prudent thinking process and better behavior. That's become my concept of slow grinding in this thesis. I create grinding that affects slow people in both using processes and being a decoration.

Finally, I found that the word "slow" isn't only shown at moment when people use the object, but be used in every step since designing and thinking process, understanding human behavior, as well as process of choosing material, and finishing in every details. In other word, slow design is the thinking process that affect slow on designer and user by create slow character for both of them.

5.2 Recommendations

To develop this thesis, I need to use better making methods such as mold making and more precise ceramic making to make burr more effective and improve them with more design. Because in this thesis, I make burr with myself and some tools. So, the grab between them is still not precise enough for real use. And also, research more about other materials to develop the product and create a survey to collect usage data to improve it. And also, I need to understand more about mechanism of burr and make many experiments of different style of burrs to find the best process of grinding that will use in my product. Finally, I should research and make experiment of wood working technic that can bring out beauty pattern of wood with most effectively way.



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