

Laundry Day

Social aspects of doing your laundry

A project by Pär Sånglöf, 2008

MASTER THESIS from Lund University,

Industrial Design /LTH. Department of Design Sciences

LAUNDRY DAY

PÄR SÅNGLÖF

MASTER THESIS from Lund University, Industrial Design / LTH

Department of Design Sciences

SUPERVISOR, Olof Kolte, Lecturer, Designer

EXAMINER, Claus-Christian Eckhardt, Professor

ISRN: LUT-DVIDE/EX--10/50129--SE

2010



LUNDS UNIVERSITET

Lunds Tekniska Högskola

www.lth.se

Acknowledgements

*I would like to thank the following people
for their contributions to this project.*

Olof Kolte	Supervisor
Charlotte	Caretaker at Vildanden, Lund
Lynn Lindegren	General Fixer
Claus-Christian Eckhardt	Examiner

my thesis

Abstract

The shared laundry room (the "tvättstuga") is a good example of a service system, where we don't necessarily have to own a product to benefit from it. If we can share, we can also reduce our consumption & impact on the environment.

In today's society (in Sweden) the "tvättstuga" is a service taken for granted when living in an apartment building. It's a necessity in many cases - people rarely bring their white goods to rental flats. While (possibly) offering a great service, this shared environment is also the most common source of conflict between neighbors. The reasons for fighting can be everything from lint left in the dryer & slippery detergents spilled on the floor

Alienation, anonymity and loneliness in the larger cities are problems which seems to grow bigger in the post modern world. By improving the living environments in the cities, to increase our understanding of our surrounding & our neighbors, steps are taken towards a more sustainable future.

I want to alter the existing "tvättstuga", to re-design & structure an open and accessible environment where people can meet, while at the same time reducing energy- and resource consumption.

When designing the new machines and booking system, and given suggestion to possible energy solutions, one of the criterias has been that the final concept should be possible to implement today, with ready available technologies.

I have also worked with the aim to simplify the interaction between user & machine. Doing your laundry should be simple.

The project is based on the belief that we can't depend solely on future technical innovation to solve our problems. I want to show that change is possible today.

The final result is a new kind of "tvättstuga", influenced by other cultures, laundromats and laundrocafés. I have chosen the positive aspects which set them apart, and tried to avoid the problems which already exist.

In this new laundry room, you have the possibility to plan ahead, but also to use it as a drop-in service for unforeseen needs. An improved booking system, locking mechanisms focusing on the individual machines instead of the environment will hopefully reduce conflicts and mistakes. If you can't get the machine to start, it's just not yours to take (or broken)..

My renderings of the concept will hopefully contribute to make the idea tangible, to show that even established systems can be changed and improved - without having to reinvent the wheel.

table of Contents

Method	7
Background	9
1 Research	
1.1 The loneliest country?	12
1.2 Loneliness or freedom?	15
1.3 The environment we live in	19
Anonymity and conflicts	21
Problem definition	25
1.4 Evolution of laundry in Sweden	
Pictures from the past	26
The story	28
1.5 My own neighborhood	
Introduction	31
Overview of area	32
1.6 Shared vs. Individual ownership	
A possible scenario, the consequence	33
What's the difference?	35
1.7 Laundromat services - a comparison	37
Laundromat	38
LaundroCafé	39
Tvättstugan	40
Summary	41
2 Ambitions & Project plan	
2.1 Demarcations	44
2.2 The Brief	45
3 The Laundry Room	
3.1 Starting point & ideas	
The open environment	49
Compressing, Centralizing	51
Influences, Inspiration	52
Cohesion & Unity	53
3.2 General concepts for layout	
People in center	54
Machines in center	55
3.3 Additional services & possibilities	56
Setting up a energy System	59
Health / Allergy considerations	60
Ergonomics	61
3.4 A bit of theory (according to Kevin Lynch)	62
3.5 Criterias for my environment	63

3.6 Creating the layout of the environment	64
Main areas	65
Entrances	66
Overview & transparency	67
Ledges & walls	68
How to divide?	69
Flow & spatiality	72
Focus points & barriers	73
Low maintenance	74
Machines in center	75
3.7 Planning for the booking system	79
Open space / locked machines	80
Machines by number	81
Standard & special groups	82
Colour coding	84

4 The booking system

4.1 Criterias for the interface	86
4.2 Basic layout - sketching it up	87
4.3 Final design, interface & infosign	91
4.4 Make a booking, a walkthrough	93

5 The machines

5.1 Selecting a professional range	102
5.2 Reasons to stick with the box?	102
5.3 Front-, top-loaded or something else?	105
5.4 Ideation, sketches & development	106
5.5 Form follows function?	108
5.6 The story - escaping the box	109
5.7 Interfaces of the machines	115
Laundry is not rocket science..	116
Two main directions	118
My proposal for the interface	120
5.8 Logotypes & colour	121
5.9 Final design of the machines	
Choosing specifications	123
The speed washer	124
The heavy washer	128
The fluff dryer	130
The speed cyclone	132
The cold mangler	134
The hot closet	136
The lineup	139

6 Final design of the environment

6.1 Renderings	140
6.2 Discussion	148

my thesis

Method

Personal Experiences

I started by looking at my own situation, living a single life, in a single household. I didn't know my neighbors even after 3 years, and the shared environments we had were very few. These experiences were a starting point to my research on social & environmental improvements that could be made.

Newspapers & Articles

In the daily news I read about loneliness, alienation and violence in the suburbs. They confirmed my own experiences and I kept researching, studying theories about individualism, self-sufficiency and the ideals & norms that might create a culture where we easily end up as lonely individuals. I used interviews I found with architects and city planners to come up with ideas for improved social environments. I also did research to understand the history and evolution of laundry, to put things in a perspective.

Field research on laundry solutions

When I had decided that I wanted to work with the common areas we share, the laundry room, I travelled to Copenhagen & Gothenburg to study both laundrettes, laundry-café and shared laundry rooms. I used a camera to document these environments and to highlight positive & negative aspects.

I have had discussions with the janitor in my neighborhood to figure out how many machines & apartments that exist. I used this information when I decided the scale of my new proposal.

I also found out during these discussions that they had allergy proofed apartments, but couldn't offer allergy-proofed laundry rooms since they were shared.

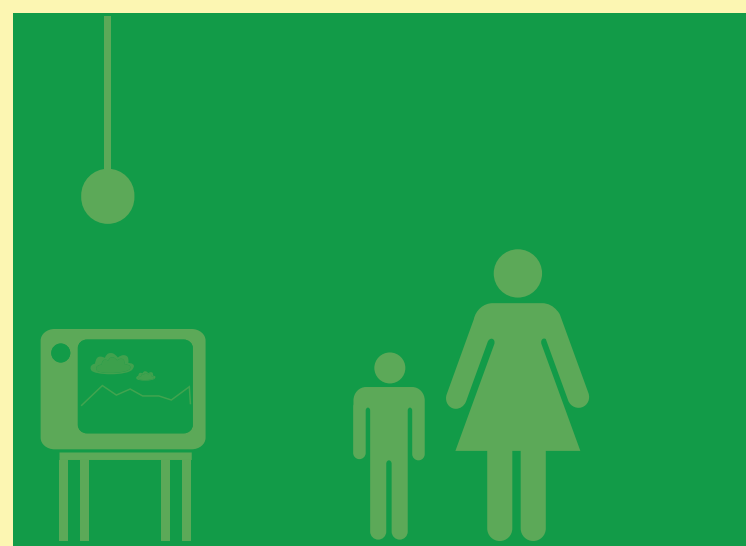
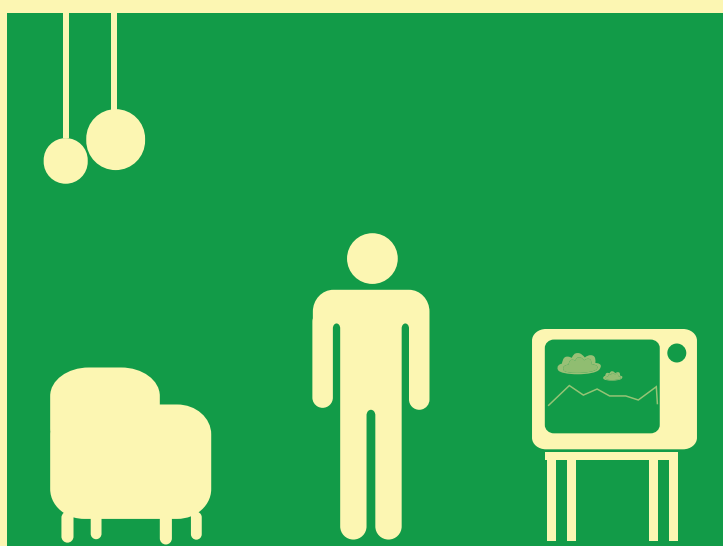
Research on technology

I have studied machines & equipment ranging from heat exchangers, solar heating solutions, washing machines, dryers and made a list of equipment that I need in my laundry room concept. I have then used the specifications to design new machinery.

Sustainable solutions

As a guideline all through the process I've tried to work with the three aspects of sustainability.





where to start..

Background

When I started working on my thesis, I really didn't know where to start. Trying to identify a problem I started looking at my own life, the environment around me, and my personal experiences of different cultures around the world.

During my time as a student I had done internships and been working as a consultant in Italy, Denmark and Germany. I had been travelling Asia and been living in a collective in Norway during a break from my studies.

In Italy, home was not much more than a bed. I worked 10 hours a day, and after work my colleagues and other friends usually ended up at a café or a restaurant. Staying outdoors socializing until late in the evening before going back to bed was more of a rule than exception.

Coming back to Sweden, I realized how much more we cocoon ourselves in our apartments, rushing back home from work to find a comfortable position in front of the TV. Even with good friends around, we just didn't socialize that much. Going straight back home after work, instead of meeting up with friends, waiting for the weekend to kick off.

Being a single, spending much time on my own, I started thinking about my neighbours which I knew very little about. Doing a bit of research, I found statistics and articles showing that Sweden possibly was the "loneliest" country in the world. Living in a single household was more common than I had ever thought..

1 background Research



sweden compared to the world

1.1 The loneliest country?



The statistics of single households might indicate that Sweden is the loneliest country in the World. Since 1945, the single households comprised 6 percent of the adult population. Today every 3rd adult, 29 percent, live alone. The number of single households are still on the rise.

Every second household in Sweden, 46% is a single household. And with "single" household, single mothers or fathers don't count. The total amount of households in Sweden are 4,4 million (year 2006).

When comparing these statistics to the rest of the world, the number is very high. In the whole world 203 million adults live by themselves.

This is 12 percent of all the households in the World. There is an uncertainty in the comparison between countries, but the statistics which are available clearly shows that Sweden and Denmark has the most single households in Europe - and in the World.

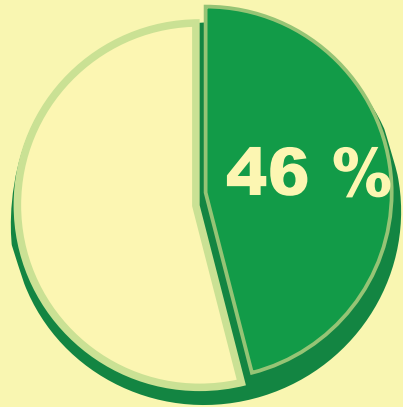
The connection between high living standards and many single households is strong. The lowest amount of single households in Europe is in Cyprus, then Spain and Portugal.

In North America this number is 26 percent. Asia has about 7 percent, and the lowest numbers, around 3 percent, is in Africa and the Middle East.

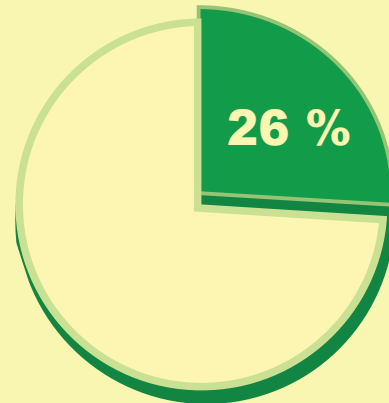
Source: SCB, Euromonitor International, Eurostat

Statistics on single households (people who live by themselves)

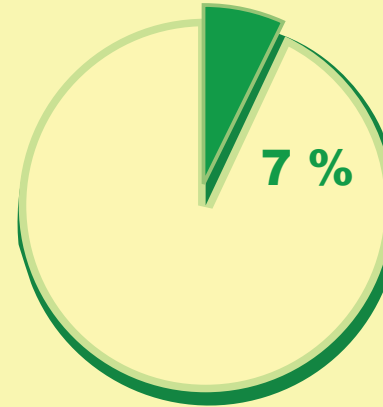
source: SCB, Euromonitor International, Eurostat



Sweden



North America

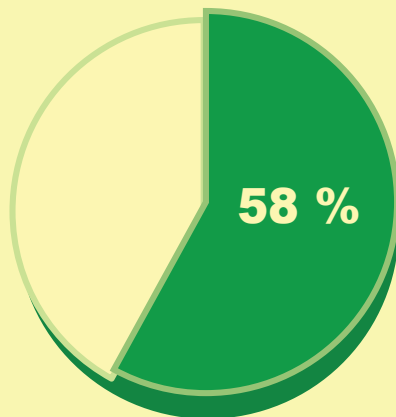


Asia

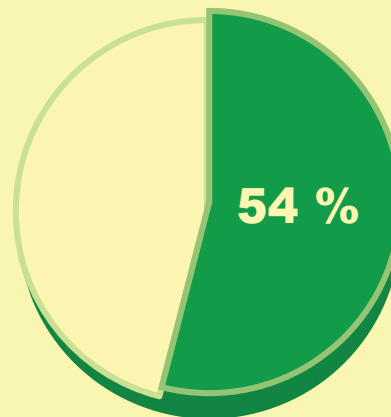


**Africa &
The Middle East**

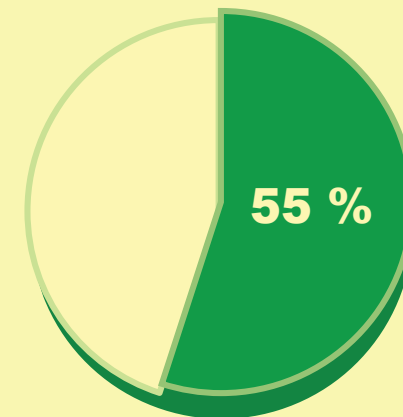
we have the highest percentage in the world.



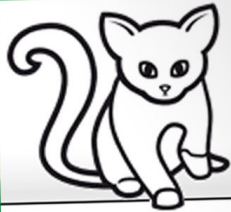
Stockholm



Gothenburg



Malmoe



LUNDAGÅRD.SE

SVERIGES ÄLDSTA STUDENTTIDNING - PÅ NÄTET SEDAN 1995

NYHETER | REPORTAGE | KULTUR

- Arbetsliv
- Bildspel
- Bloggare
- Bostad
- Debatt
- Forskning
- Frågan
- Hallå där...
- Helsingborg
- Internationellt
- Kår
- Krönika
- Ledare
- LTH
- Morrhoppan
- Nationer
- Näringsliv
- Nöje
- Novisch
- Obligatoriet
- Porträttet
- Q
- Tips
- Utbytesstudenter
- Webbteve



Syndrom

Läs kulturbloggen

UNGA KÄNNER SEJ ENSAMMA

Du kom från www.google.se och sökte efter *unga känner sej ensamma*. Inlägg kanske är av intresse:

- Att göra en Elling...
- Om brott och deras orsaker
- Det ensamma studentlivet
- De vill stärka unga tjejjers självkänsla
- Presidentvalet engagerar amerikanska studenter

Det ensamma studentlivet

13 maj 2009 13:27 6 [Tipsa en kompis](#)

Den arketypiska bilden av studentlivet påminner om amerikanska high school-filmer – en hysteriskt social och vänskapstät tillvaro där ingen någonsin känner sig ensam. Men verkligheten ser annorlunda ut. Studenterna Julia och Jakob är allt annat än unika om att ibland känna sig ensamma.

– Tanken på att ingen märker om jag går upp ur sängen eller inte gör mig paralyserad. Och när man går ut så ser man bara lyckliga människor i stora gäng, berättar Julia, 22. Vi sitter vid ett bord på Arimans solbelysta uteservering bredvid två killar som skrattar högt.

Hit kan du vända dig till kuratorerna på Lund kan man prata sig med vilken helst. Telefonnumret är 43 77 och bestäm via www.lu.se.

Till Studentprästen om man behöver. De finns på Kåren. Tel. direkt: 046-35 87 00

Röda korsets Jourhavande telefonnummer

Rapport

sverige världen i fokus svininfluensan

Senaste nytt: 09

Sverige: Nyheter



Unga känner sig mest ensamma

Publicerad 2 februari 2009 - 13:00
Uppdaterad 2 februari 2009 - 13:51

Att många gamla känner sig ensamma är känt men nu visar forskning att unga lider mest av ensamhet. Unga i gruppen 20-30 år upplever sig mer ensamma än de som gått i pension.

Forskningen presenteras inom kort vid Sociologiska institutionen i Uppsala, skriver UNT.

Bakom studien står sociologiprofessorn Lars Tornstam. Arbetet började för drygt 20 år sedan. När hans rapport om ensamhet publicerades 1988 var den resultatet av en frågeenkät som skickats ut till 3.000 personer i åldern 15-79 år.

Poppis i USA



Agnes är

Den svenska artister upp på Billboardlista

→ Den mest populära

Senaste nytt

- 09:38 → Pakistans
- 07:59 → Minister: P
- 07:55 → 90-åring a
- 07:44 → Jan Guillou
- 06:11 → En död vid
- 05:52 → Man mörd



Stockholm

Got

1.2 social aspects Loneliness

Many young people experience loneliness

"People who are between 20-30 years old feel lonely in a higher degree than older people, new research shows.

– Young people often explains the reason for this with personal characteristics, professor Lars Tornstam says.

In the younger age group 60 percent feel lonely often or sometimes, compared to 49% in the age group between 80-90 years.

– A lot of people are surprised that the older age group have a lower percentage than the younger crowd, Lars Tornstam says, professor at the Sociological institution in Uppsala.

Source: TT
<http://www.aftonbladet.se/nyheter/article4314254.ab>



really?

Reflection

Feeling alone once in a while is something most of us can relate to, but this kind of study might fail to show how differently this loneliness might be perceived when asking the single individual.

There is a positive aspect of loneliness, if you seek it actively because it makes you feel better. At least according to Lars Tornstam, professor at the Sociological institution in Uppsala.

I found more articles and blogs commenting on the statistics that I've been referring to so far. I will present these on the next pages.

social aspects

1.2 Loneliness or freedom?

“Living alone is a sign of freedom”

22 year old Amanda likes to live on her own. She can choose to socialize when she feels like.

For almost a year she lived together in a collective in Gothenburg together with four friends from the University. They rented a house with an apple garden, and in the household they shared everything.

- The collective was a pretty nice idea from the start, we really wanted everything to be democratic. I really like the people I lived with, but everything became such a hassle. Some people had less money and wanted to eat potatoes all the time. We argued about cleaning, and even about what kind of tooth paste we should buy. I had enough, Amanda says.

She moved back to Stockholm. Here she had her family and most of her friends. In the autumn she started to study so she could work at a recreation centre. By sheer luck she found a student apartment pretty far outside the city. The apartment was just a little room with a cook top and a bathroom. From the window she has a view over a stretch of woodland with swaying pine trees.

- I'm a very social person who enjoys to be where the action is, sometimes I just forget to relax. This is why it became so important for me to have my own place. This is my oasis. I can just cocoon - It's really nice!

At home Amanda often relaxes by writing or listening to music.

Why do you think single households are increasing?

- We get more and more individualized. We think much more about ourselves, “my way, my goals and my dreams”. I think that really influences young people and makes them want to live by themselves for a while.

I think it's great to feel that you have your life in your own hands, but it can also be difficult, Amanda says. The many choices you have to do regarding your future demands a lot of responsibility.

It's a bit trendy to be single also, Amanda thinks.

- It's a sign of freedom and independence to be able to run a riot and date as many people as you want. Especially important I think it's for women to feel that we can do what we want. We don't have to stick to anyone we don't like.

Amanda has chosen to live by herself at the moment, and she doesn't really long to move together with someone. But, she has a love, as she says.

- I need to live alone to get to know myself, even if it can be anxiety-ridden sometimes. Later on I would like to have a family. I don't want to wait for too long to get babies, maybe 5 years.

What's the worst with living alone?

- It's when I feel like doing something, and all my couple-friends are sitting home in a “cozy evening home-hell”. Then I feel very lonely.

What do you do then?

- Then I have to find something to distract myself. Maybe I read a book, or watch whatever is on the television. Or I might go home to my mother, I can relax there and just socialize. I often get nice home made food. That's nice.”

*Interview with Amanda, 22 years old.
Source: Emma Lofors, DN.se*

“16000 lonely students”

“In the last edition of the magazine Studentliv (Student life) there is an article about lonely students. According to SCB, 5 percent, or 16 000 of the students in Sweden, have no close friend.

Strangely enough there is rarely anyone who writes or debates this fact. On the contrary it seems like everyone have a lot of friends when the topic is discussed.

However. I can relate to this article since I’m one of the students who have no friends. It’s not as simple as joining a club, there has to be clubs or societies with activities that I can enjoy and take part in.

Neither do I need a psychologist just because I feel lonely (which is often the answer then I mention the problem here at Student.se).

I will be all alone the day I finish my studies. I don’t have a single friend anywhere in Sweden, not to visit, or even call. Well, there’s not much to do about it now. I finish my studies in a couple of months, and it’s a most dismal situation.

Probably there is no one who would admit to such a thing, but I hope that my addition to this topic will show someone else that they are not as lonely as they think.

16 000 lonely students in Sweden, the year 2007.”

*Sarah1 / Västervik
Source: www.student.se*





Loneliness..

Reflection

Loneliness might be seen a freedom when it's a matter of choice. The questions is what you can do about it when you feel that it's forced upon you?

The culture and norms of a society can make loneliness into something shameful. We are supposed to be social beings - but also independent and self-sufficient, we shouldn't be a burden to others. If finding a way out of loneliness seems difficult, could the environment we live in be part of the problem?



1.3 Social aspects

The environment we live in

The landscape of strangers

Modern cities are filled with strangers, huge crowds of people one passes on the street but does not know. An environment very different from that of a village.

This continuous exposure to unknown persons, of diverse and often unfamiliar backgrounds and habits, has been cited by many urban theorists as one of the most salient characteristics of city life (Canetti 1984; Milgram 1977; Sennett 1974; Simmel 1971; Wirth 1938).

The immense population of the city means that urban social ties are relatively weak. Many of one's daily encounters with others, such as making a purchase at a register, sitting beside someone on a bus, are faceted and limited (Wirth 1938; Milgram 1977).

Surrounded by strangers, the inhabitant of the city is much more anonymous than the small town dweller. This can be liberating - one has more social freedom in the city - but also alienating.

Anonymity also diminishes social constraints on behavior: people may be ruder (or worse) among strangers whom they are unlikely to see again than they would be if in the company of acquaintances (Milgram 1977).

Yet alienation need not be the inevitable result of immense population. Many urban theorists cite internal structures, such as close-knit neighborhoods, as constructs that provide an intermediate environment between the complete anonymity of the city at large and the deep relationships of close friends and family. (Jacobs 1992; Milgram 1977).

We need more “swell” places

*Interview with Gerd Cruse-Sondén, safety architect.
Working for a Safe, more Humane Gothenburg*

- I do understand those who are afraid to walk home from the bus because it's so dark and desolated. Of course we shouldn't repeat earlier mistakes when planning new residential areas, we have to make sure it's evenly populated, well lit and with a better overview.

But at the same time, the physical environment and the social life is so intimately linked, she says.

- You can't just view a house as a construction. You have to consider how people live and where they can meet.

Interactions between people has been a theme all through Gerd's professional life. In the mid 70ies she was a young left wing radical/architect with a fresh degree from Chalmers. She had a strong will to change and improve the world, and started working with old houses. But even more so with it's tenants.

- It's the people in the physical environment who are the most intriguing, that's where the it all connects, where it starts to be about the actual life we live, she says.

Even if unsafe environments like dark alleys, deserted tunnels or overgrown gardens have to be improved to increase the safety and well being, Gerd issues a warning when it comes to putting too much trust in technical solutions.

- There is no way to create a completely risk free society. I don't believe that the trend of installing better locks, alarms and putting up fences will actually increase our safety. What we need is more open environments where we can meet each other. Simply put, more “swell” places, where people, no matter their origin and background, can feel welcome.

*Source: Translation from Hem & Hyra 2008,
Author: Eva Thorpenberg Paulsson*

the environment..

Reflection

As stated in the articles, we need more open and accessible environments where people can meet.

When living in a city, in an apartment, often the only space you share with your neighbors are the staircase and the laundry room, if available..

The staircase is not much more than a means of transport, and the laundry room is often a locked and inaccessible space hidden away in the basement, something which makes some tenants feel uneasy about doing their laundry.

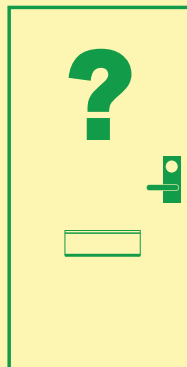
The anonymity and the lack of shared and accessible environments makes it more difficult for us to relate to our neighbors. This can create other problems..

Anonymity in the shared spaces
Neighbours?

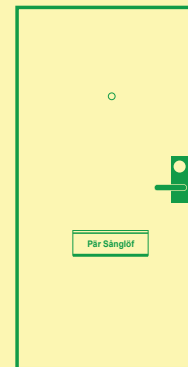


*After 3 years I still
don't know my neighbours..*

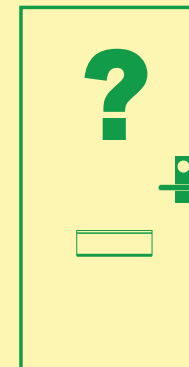
Neighbour #1



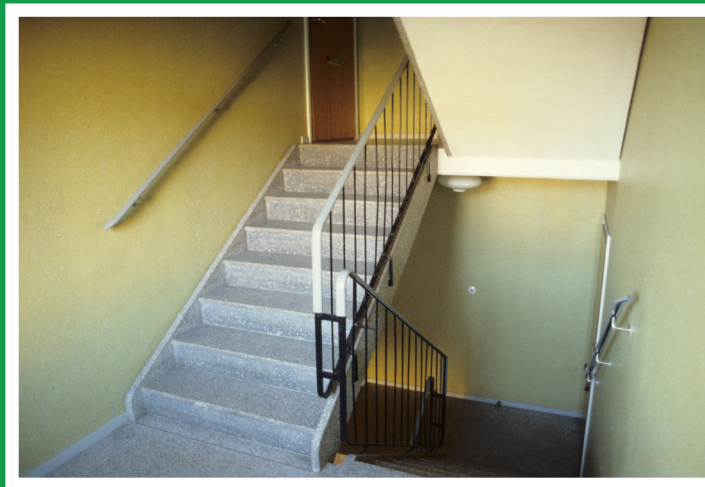
My apartment



Neighbour #2

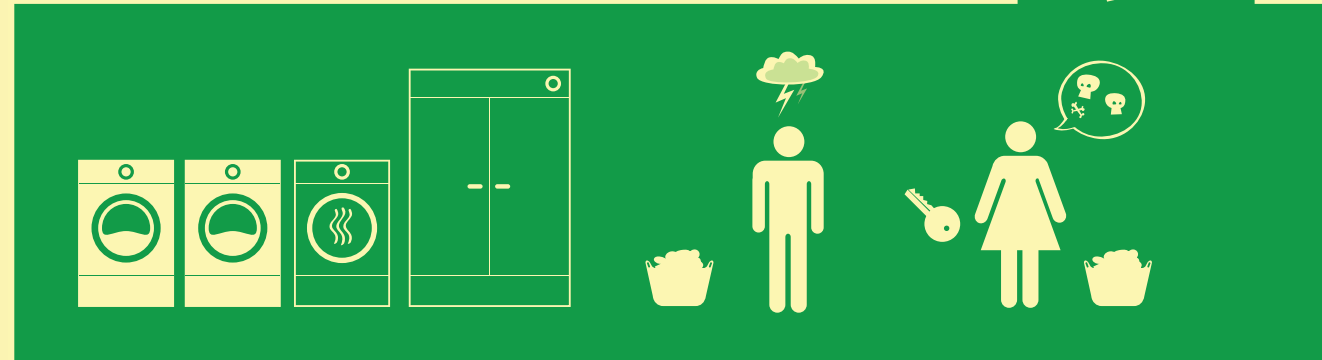


What about the environment?



Where would we meet?

shared spaces Conflicts



The Laundry room

Conflicts in the laundry room is the main source of conflict between neighbours. Lint in the dryer, messy detergents on the floor or stolen laundry bookings might be some of the reasons for fighting.

To avoid theft and conflicts regarding bookings, many landlords have installed systems with pin codes, magnetic keys and other high tech solutions. At the same time they have minimized the chance of neighbours to meet at all. The social aspects of doing laundry is almost completely gone.

“Closing down shared laundry rooms will stop violence” Source: Ingrid Arinell, metro

The municipality of Lund & their landlord, LKF, has another drastic way of dealing with the problem - closing down the shared laundry rooms all together.

“There has been complaints regarding the cleaning and the booking system hasn’t worked, says Gunilla Flygare, LKF.

Flygare has a list of issues which all are connected to the shared laundry room. The laundry rooms are getting fewer as LKF are installing washing- & drying machines in all apartments.

So far, almost half of LKF’s apartments have their own machines. Maybe a bit luxurious, but not without issues.

- Large families have a hard time drying all their laundry. Some apartments can only fit smaller machines, and that makes it difficult to wash rugs and blankets, says Gunilla Flygare.

She points out that it’s not only conflicts between neighbours that are the reason for shutting down the laundry rooms. It’s also about raising the standard.

LKF will now investigate the future of the shared laundry rooms. In some places they will remain, and there might be a reason to recreate them in a few places.”

Mamma och dotter gripna efter tvättstugebråk

2008-08-18 23:30
En kvinna och misshandlat efter Bergsgatan. H

Enligt polisen va de ska, enligt ar blöda.

De två kvinnorr

Tipsa en v

OS - Bordte

Senaste nytt 2

10:16 Utrikes Ry Georgienresolutio

10:15 Festivalm papperskorgen"

10:15 Sport Jörg

AFTONBLADET

blocket.se Bilar Bostad Möbler Tjänster Ny Nä drömvikten! ViktKlubb.se Singel & öve MÖTESPLA

Onsdag 08-08-20

Startsidan

Nyheter

- Senaste nytt
- Forum
- Världen direkt
- Ryssland
- USA-valet
- FRA-lagen
- Kolumnister
- Tipsa oss
- Kontakta oss

PLUS

- Plus nyheter
- Sök Plus-artiklar

Nyheter

Höjesliv

Sportbladet

OS 2008

Sportbladet Spel

Klick!

Sofis Mode

USA-valet

Kvinna

Snack

Plus

TV

Beställ nyhetsflash – direkt till di

Bli först att få veta de stora nyheterna - för b

Publicerad: 2003-07-07

51 misshandlade i tvättstugan – bara Stockholm

– bråk om tvätt-tider vanligaste orsake

Det är viktigt att hålla på tvättiderna. Just bråk om tvättiden är den vanligaste orsak människor blir misshandlade i tvättstugan.

51 personer blev misshandlade i tvättstugor i Stockholms län förra året.

Hur många som blivit misshandlade i tvättstugor runt om i Sverige är oklart, men en sak som är säker är att i tvättstugan är det upplagt för bråk.

– Tvättstugan är en klar anledning till grannosämja, säger Åsa Mohlin på Familjebostäder i Göteborg.

Tvättmedel, ludd och tidstjuvar

Problemen som kan uppstå i

Har du varit n eller annat våld exempel bråkat tvättiden? Mejlareporter och b

annons

metro INTERNATIONAL

Sverige – onsdag 20 augusti

Ilyheter Nöje OS Metro Teknik Mode Metrojobb.se Mat & Hälsa Resor Club Metro Metrobloggen Annonser

Metro PDF

Läs Metro PDF

club metro MEDLEMS-ERBJUDANDEN!

TÄVLING BLI METROS OS-REPORTER!

metro



HUR MYCKET ÄR DIN BIL VÄRD?
Säljer du din bil för billigt?

Stockholm Göteborg Malmö Ekonomi Kolumner

Publicerad 2008-08-20 01:28 Skriv ut Skicka

Stängda tvättstugor ska stoppa våldsvåg

Konflikter i tvättstugan är den största orsaken till att vi bråkar med grannarna. Det kommunala fastighetsbolaget i Lund, LKF, tar till en drastisk metod – tvättstugorna avskaffas.

– Det har funnits missnöje med städning och bokningssystemet har inte fungerat, säger Gunilla Flygare, marknadschef på LKF.

Flygare räknar upp en rad problem som alla har sin källa i det gemensamma tvättutrymmet.

Och tvättstugorna blir nu allt färre. LKF installerar i stället tvätt- och torkmaskiner i lägenheterna.

Hittills har närmare hälften av bostadsbolagets lägenheter fått egna maskiner. Lyxigare kanske, men inte problemfritt.

– För stora familjer är det svårt att torka all tvätt. Vissa lägenheter har

PÅ ANDRA SAJTER

- Mamma och dotter gripna efter tvättstugebråk (skd.se)
- Mor och dotter greps för tvättstugemisshandel (sydsv)

Powered by Aitellu

Metro Internet

Levereras av eniro

metrobloggen.se

Skapa egen blogg

Läs andra bloggar

Sport



Hallå där ...

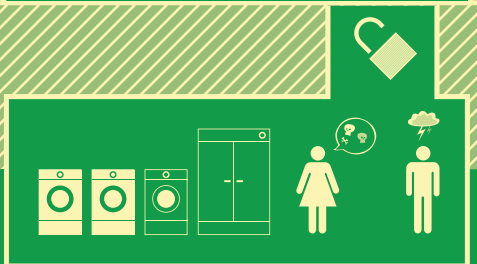
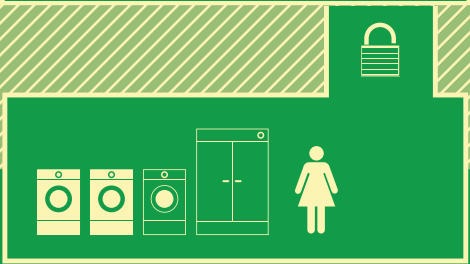
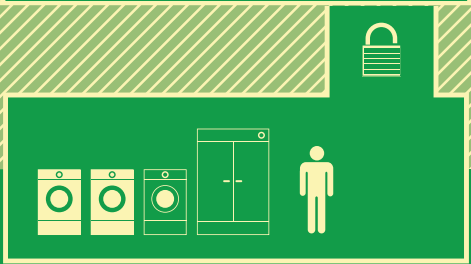
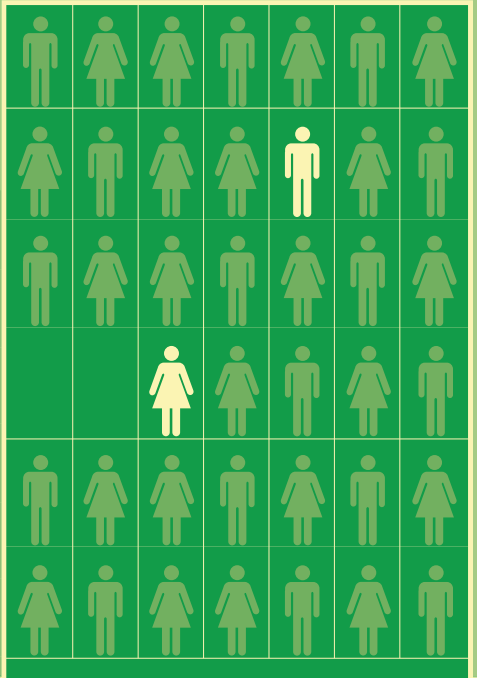
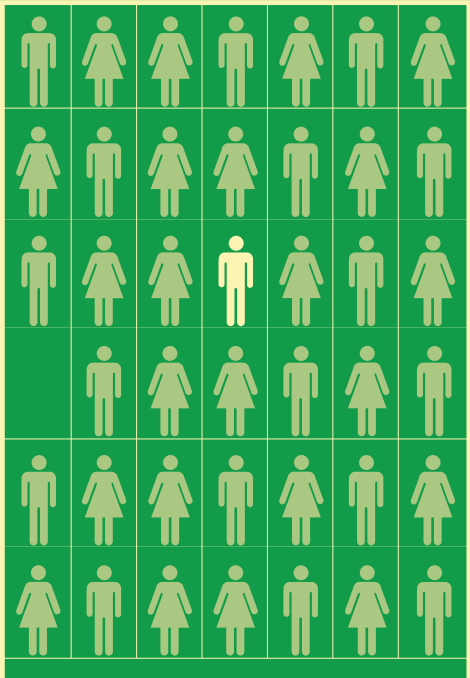
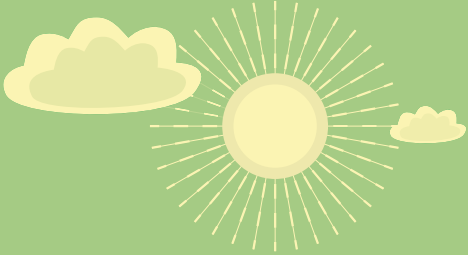
► ... Jessica Almenäs, som på plats såg sin pojkvän leda det norska ryttarlandslaget till brons.



the environment..

Reflection

The laundry day. A day of irritation and conflict between neighbours. LKF decides to close down their laundry rooms as a "solution".



findings so far

Problem definition

Living alone seems to be a trend in Sweden. Maybe because it's seen as a freedom, a sign of independence & norm. You live by your own rules, don't have to care about others.

However, a lot of people feel lonely.

The city environment has been referred to as the "landscape of strangers".

Increased sense of anonymity compared to villages.

It's seems difficult to relate to our neighbours & surrounding, alienation is probable.

Living in apartment blocks, we usually have very few shared spaces.

The tvättstuga is one of them. Often a source of conflict, instead of something positive.



I want to work with the "tvättstuga" as a shared environment.

I keep researching to get a perspective.

a brief historic recap

1.4 Evolution

Not so long ago..



my grandmothers generation



boiling, scrubbing, twisting...



..a social chore..



Urbanization



the new approach (1956)

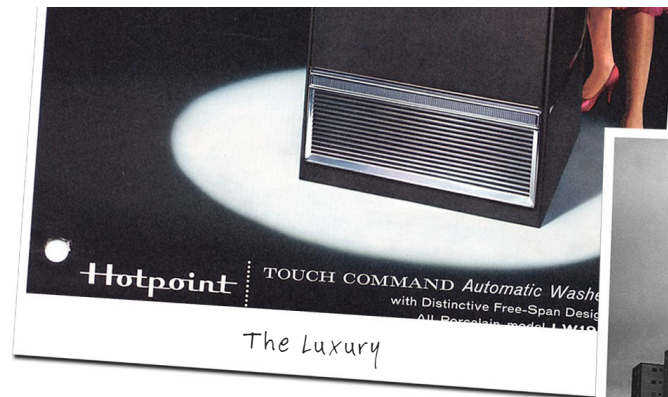
Committee of Collective Households concludes that a systematic approach is needed.



but some things don't change..



"The housewives dream"



The Luxury



The "Million program" 1965-1975



The "Tvättstuga" Standard



Today a service taken for granted..



..and a source of conflict between neighbours..

the evolution of..

Laundry in Sweden

"People didn't really wash that often until the 19th century. It was heavy to carry the water, not always accessible and sometimes freezing cold. At the end of the 19th century hygiene was somewhat improved in Sweden.

People usually did their laundry (a "storbyk") twice a year. The laundry took about 2-3 working days, and 50-80 sheets were taken care of at once.

The laundry were soaked the first day, on day two put in large tanks with bate and then boiling water where poured over it. Day three the laundry were rubbed against the washing board (an invention that arrived in the 1870ies) before washing it in the lake. Wooden paddles were used to get the bate out..."

Ulla H / Inga G, f. Barrögård,
<http://oknanashulta.spaces.live.com/blog/cns!198C9572FEC02D7F!721.entry>

Well.. the story keeps on going, but to summarize, doing the laundry was very hard work, and usually a woman's job. Even with the urbanization it took some time for things to change and improve.

In 1956 the committee for Collective Housing pointed out that the household laundry still was the heaviest burden. 70 percent of all laundry in Sweden were still washed by hand, in most cases by the women.

It was decided that this inefficiency and waste of human resources couldn't be accepted, that a more systematic approach was needed. As a part of the "Million program" (1965-1975), an initiative to solve the acute housing shortage in Sweden, the shared laundry room became part of a new building standard. The Tvättstuga was born.

The tvättstuga was considered a luxury. The washing machines made daily life considerably easier. As time went by the luxury transformed into a something which was taken for granted, and today, 50 years after its introduction, it's often considered a nuisance, and a source of conflict when you have to share it with your neighbours.

Source:

http://www.vartgoteborg.se/prod/sk/vargotnu.nsf/1/tema_trygghet,tvatten_har_varit_bade_slitgora_och_gemenskap

but this is the general story..

What is it like in my own neighbourhood?



Vildanden, Lund



Vildanden, Lund..

1.5 My own neighbourhood

When I started my thesis, I was reflecting about how strange it was that I didn't really know any of my neighbours. I never had any problems with them, not even in the shared laundry room.

We had no reason to fight over lint in the dryer - cleaning were outsourced - and the only sign of my neighbors in the laundry room were possibly some forgotten damp clothes in the washing machine once in a while.

It didn't even happen that anyone by mistake had taken a neighbours booking. It just couldn't happen, as a result of the new electronic booking system that was installed.

While it efficiently reduced any friction between tenants, which could possibly create irritation, it also reduced the possibility of random encounters (positive or negative) in the laundry room to zero percent. Seeing another neighbour when walking down to the laundry room would have been a "mistake" by the system, simply put.

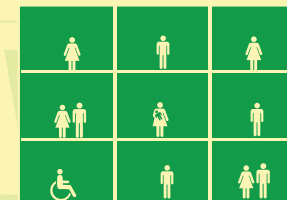
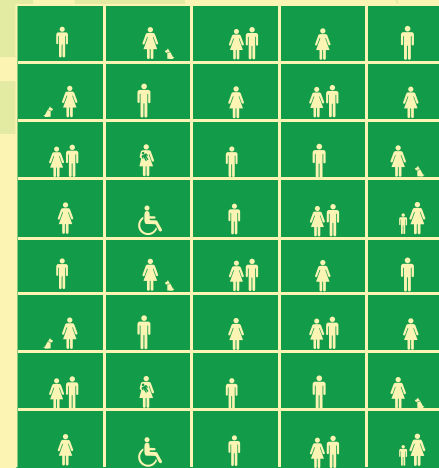
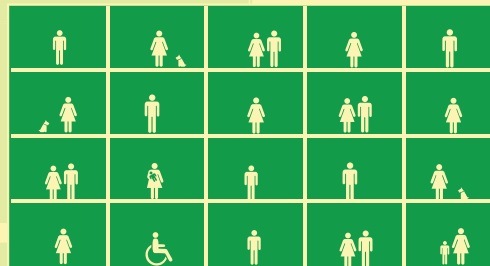
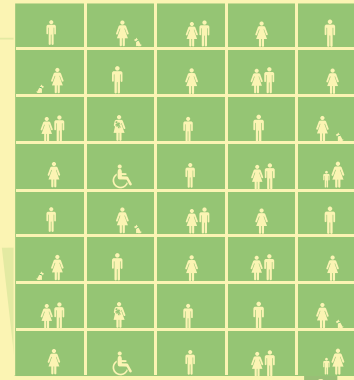
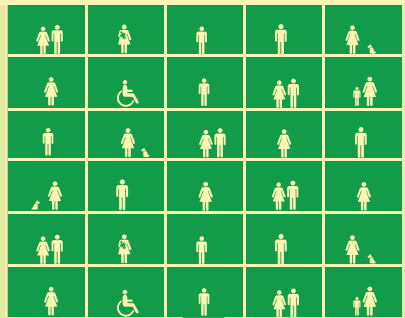
Reducing errors by taking away the human factor, that is, taking away the humans, must be the least favorable option if you try to improve the social environment.

I needed to find a better way of organizing the laundry room - without excluding people.

Overview

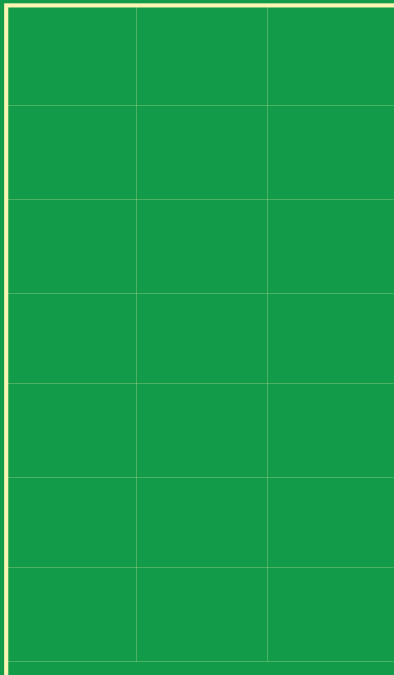
My own neighbourhood

1066 apartments
43 machines



1.6 Possible scenario

1066 apartments



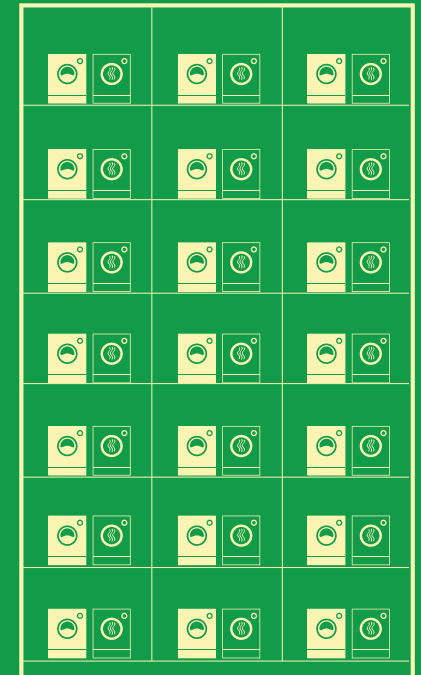
The LKF (Lunds Municipal Landlord) tries to solve the problem with conflicts in the shared laundry room by closing them down. (referring to the article in the research).

The consequence is as dramatic as the "solution", and amounts to a staggering increase in resource usage. To show the real consequence, I've calculated what the impact would be at a residential area as Vildanden.

Instead of sharing 43 machines, a total of 2132 machines would be needed. (1066 apartments, 1 washer + 1 dryer in each).

An increase by a factor of 50.

1066 apartments



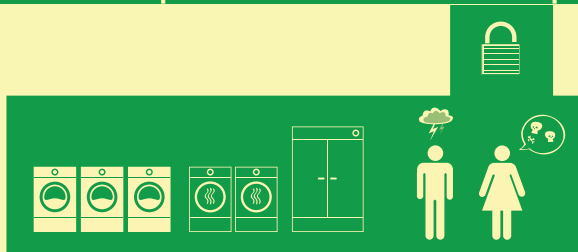
Shared

2 washer, 1 dryer
1 drying cabinet
per booking



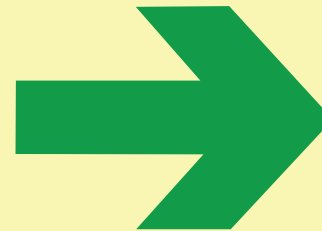
Individual ownership

1 washer + 1 dryer
in each apartment



43

professional
machines
+ drying cabinets



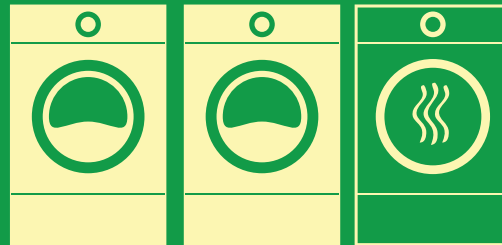
2132

consumer
machines
no drying cabinets

Professional

Shared service

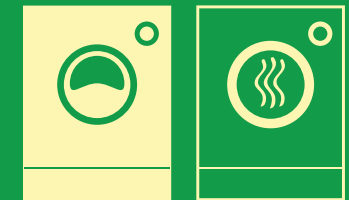
2 washing machine
1 fluff dryer
1 drying cabinet



Consumer

Private ownership

1 washing machine
1 fluff dryer
1 drying cabinet



* average under "normal" conditions

consumer : 1 hour / day
professional: 10 hour / day

<http://www.alltombostad.se>
bovården, vildanden, lund

15 years

Lifespan*
for washing machine

7 years

20 000 sek

Price
for washing machine

5000 sek

? hours

Service
for washing machine

? days / weeks

according to service contract

(if warranty is still valid)

What's the difference?

Ownership vs. Service

Shifting the incentives

There are many aspects to consider when comparing a shared (leased) service with the individual ownership.

The average lifespan of a consumer washing machine is 7 years (then you throw it away), while the lifespan of a professional machine can be 15 years or more depending on service and repairs.

A company providing consumer products have no interest in making products that last forever - it's all a matter of engineering the costs of a product vs it's longevity.

However, when a service instead of a product is offered, the manufacturers incentives shift.

The company is now guaranteeing a functionality and durability over time. Making a product that needs as little maintenance as possible, and with a stock of spare parts to repair it when it breaks down is then in the interest of the producer.

Service deals usually include a guarantee of function, and instead of weeks, it's usually a matter of days or even hours until the machine is operational.

At the end of life for a machine that is part of a service system, the manufacturer has the responsibility to take it back. At the end of the line, making things that can be reused / recycled becomes more important for the manufacturer.

Professional vs. Consumer. Efficiency?

In the book "Product-service Systems: Panacea or Myth" (by Oksana Mont, IIEEE, Lund University) there are discussions and research showing that there can be huge improvements on resource consumption in regards to how we deal with our laundry.

"Laundry /washing Resource consumption per washing cycle - if washing is per-formed in washing centres where washing machines are shared - can be up to factor 40 (Stahel, 1991)

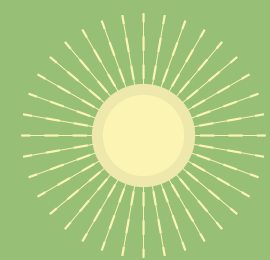
Resource productivity of launderette in comparison to households washing is factor 1.9 (Hirschl, Konrad et al., 2003)

However, higher factor improvements, up to factor 10-16, could be reached due to efficiencies of scale and through reusing /recycling of water and detergent (van den Hoed, 1997). This data confirms the need for systems approaches that allow high levels of improvement."

As shown in the research there are many reasons to keep working on improving the shared laundry rooms. We have to deal with the problems instead of ignoring them.

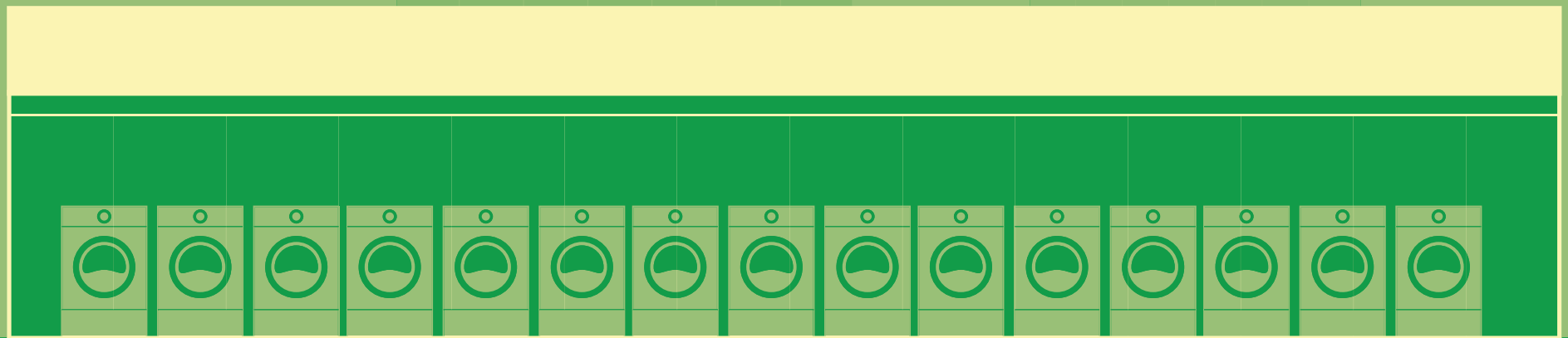
The potential of the service system as a part of the sustainable society is promising, and should be considered whenever possible. Larger laundry rooms could make energy efficiency even higher, and recycling of heat & water should be implemented.

There are several variations of the laundry room as a service system. Laundromats, LaundroCafes and the Swedish variant "Tvättstugan". I continued to research to specify what differentiates them.



The Lost Sock

Laundromat



1.7 a comparison Laundromat services

The Laundromat vs The LaundroCafé vs The Tvättstuga

There are several variations of the Laundromat-service system.

Laundromats can be found in almost every part of the world - except in Sweden. We have our own solution, the "Tvättstuga".

What do they have in common, and what set them apart?

I've done some research on typical laundromat layouts, compared each service solution, and compiled a list of features, summarizing the positive & negative aspects of each.

By picking the positive, and leaving out the negative, I use the result as a guideline and inspiration when creating the brief for the whole project.

comparison of features

The Laundromat

- + Long opening hours
- + Lots of machines
- + XLarge machines
- No booking system
- Not always in your neighborhood



The laundromat



XL washing machines



Coin operated / No booking system



Shared environment



Long opening hours (but unmanned)

comparison of features

The LaundroCafé

- + Always manned
- + Social environment
- No booking system
- More of a cafe than a laundry. Few machines.



Laundromat / Cafe



Manned as long as it's open



Extra service



Social environment



Play a game

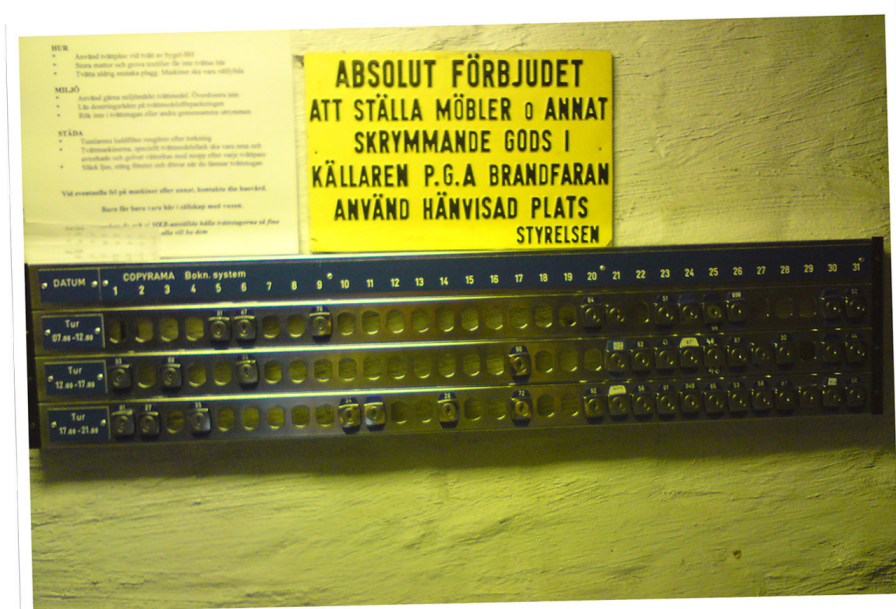


...and do your laundry

comparison of features

"Tvättstugan"

- + Possible to plan ahead
- + In house / neighborhood
- Source of conflict
- Unaccessible most of the time.



Booking system



Close to home



Locked laundry room

comparison of features

Summary



The Laundromat

- + Long opening hours
- + Lots of machines
- + Xlarge machines
- No booking system
- Not always in your neighborhood



The Laundromat cafe

- + manned *at daytime*
- + Social environment
- No booking system
- More of a cafe than a laundry. Few machines.



The "Tvättstuga"

- + Possible to plan ahead
- + In house / neighborhood
- Source of conflict
- Unaccessible most of the time.

2 demarcations & The Brief

➤ *BACKGROUND*
RESEARCH

➤ *FORMULATING*
MY BRIEF

2.1 ambition & project plan Demarcations

When doing the research and deciding how to continue with my project, I felt that the problems we face - social alienation, loneliness and anonymity in the city, wasteful resource management and a lack of sustainable solutions - is more about ideology than technology. Technological improvements are not the solution to everything. The concept should be able to implement today, and not rely on future technological advances.

Because of this, when developing the environment, the machinery and booking system, I've used technology which is already widespread and well known.

I have not tried to invent new machines, instead the goal have been to improve, re-design & re-structure what is available.

2.2 ambition & project plan The Brief

I want to create an environment close to home, a “3rd place” in the neighbourhood, where you can hang out, grab a coffee, and do your laundry.

It should be a chance to meet your neighbours in a neutral environment. With organization and accessibility, the laundry concept is about reducing the conflicts, the anonymity & alienation of the suburbs.

The project will include:

1. Planning & creation of an laundry room + energy system
2. Layout of booking system / overview
3. Redesigning the machines

3 planning & layout The Laundry Room

➤ *BACKGROUND*
RESEARCH

➤ *FORMULATING*
MY BRIEF

➤ *PLANNING & LAYOUT*
LAUNDRY ROOM

➤ *INFORMATION*
BOOKING

➤ *CREATING THE*
MACHINES

➤ *SPACE & MACHINE*
FINAL RESULTS

starting point & ideas

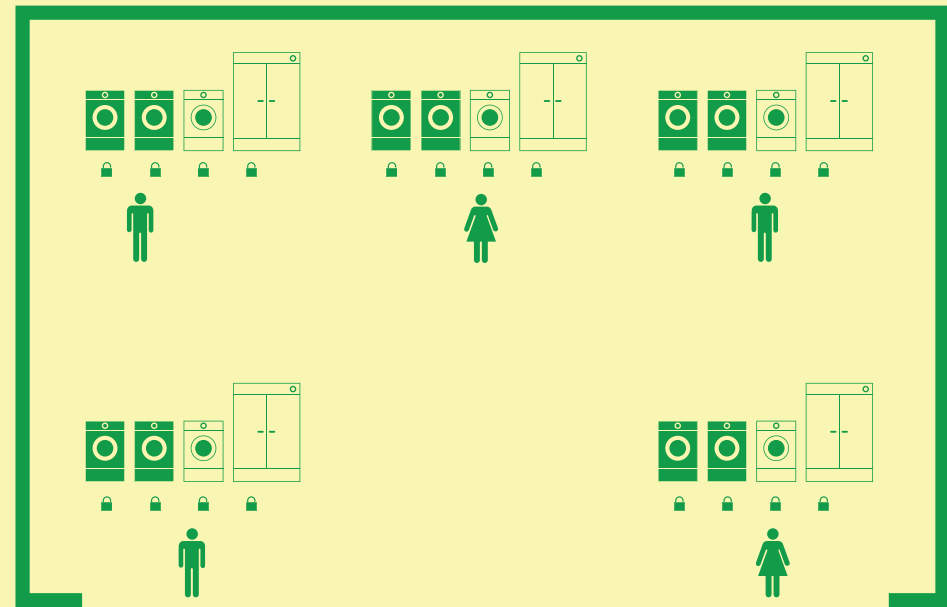
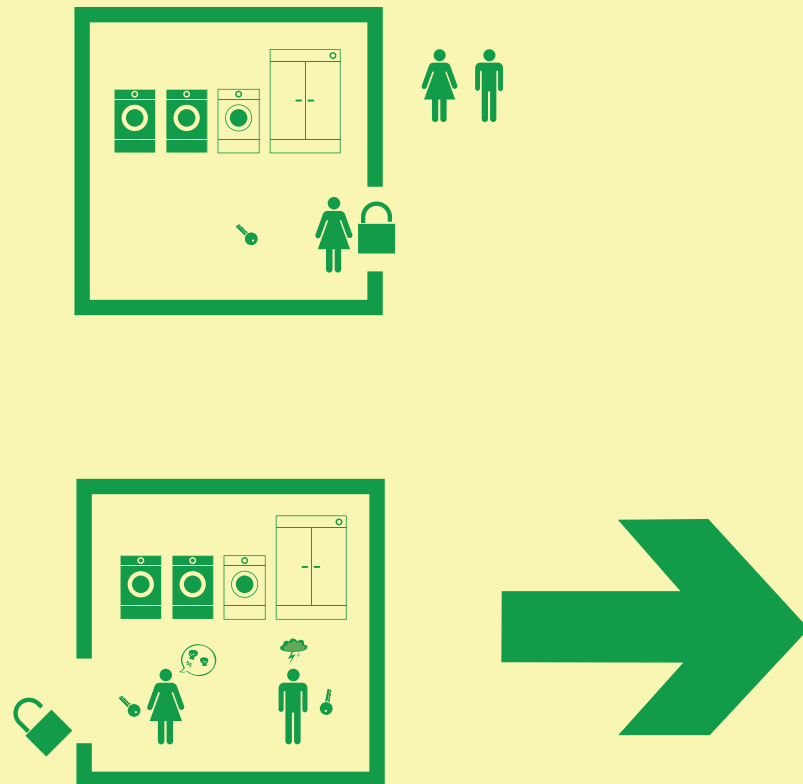
3.1 Open environment

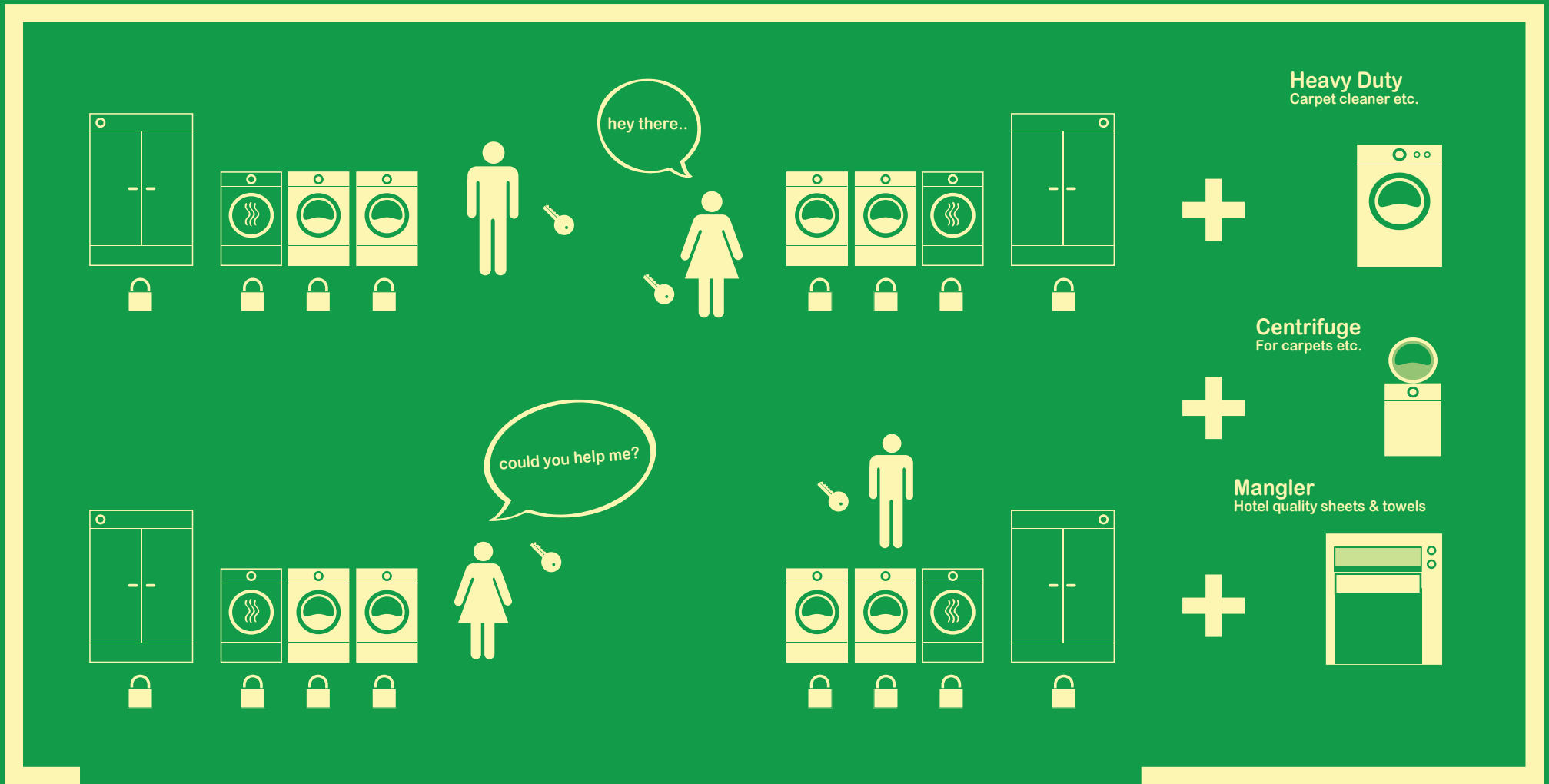
A key part of what makes a successful public social space is the presence of others. I want to create a larger environment where neighbours can meet. I don't believe that neighbours will automatically become best friends just because they use the same laundry room.

I do however believe that increased recognition of your neighbours, over time will lead to increased interaction. After you have seen your neighbour a couple of times, a nod, after a couple of months, or a year, an exchange of words.

By locking the machines to the booking system, instead of the door to the laundry room, conflicts could be minimized without excluding people.

If you can't use the machine, it's just not yours. Another effect of this solution is that you might be more likely to remove the lint - someone is probably watching you..





There is a positive synergy effect when combining smaller laundry rooms into a larger one.

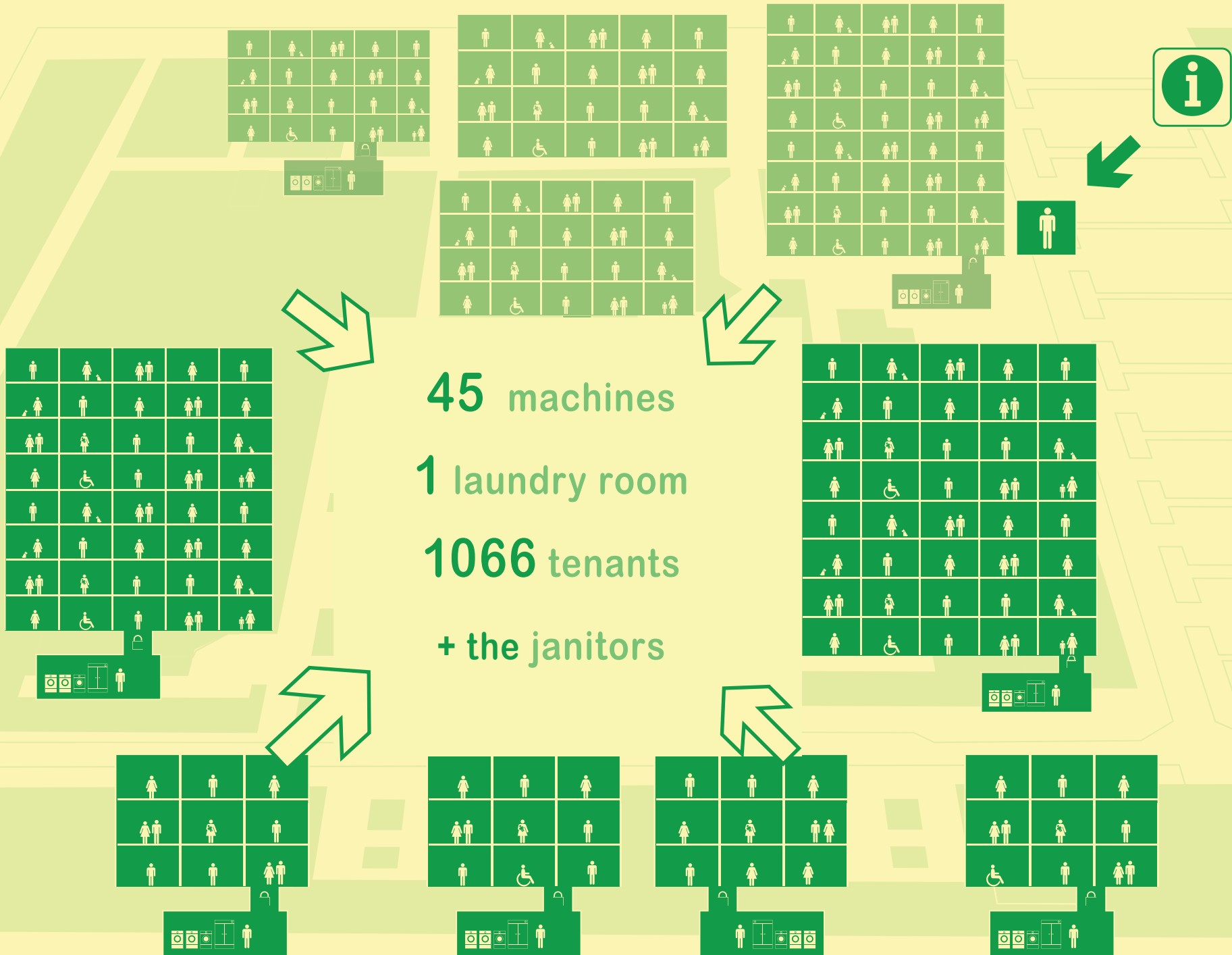
Fitting out many small laundry rooms with a carpet cleaning machine might be too expensive. In a larger shared environment however, additional investments might be affordable, and highly appreciated by the tenants.

2 washing machine
1 tumble dryer
1 dr in cabine



Larger scale bonus

1 heavy duty washer
1 centrifuge
1 mangler



the service hub

Compressing, Centralizing

By combining the smaller laundry rooms into a centralized larger version, not only can more specialized equipment be offered, also a few allergy-proofed machines could be installed. These machines would use special detergent which would be automatically dispensed.

When creating this new environment, a new office for the caretaker could be setup in conjunction with / or in the laundry facility. This way the facility would act as a service hub, a place where you go to ask for help with other issues, not just to do the laundry.

Instead of outsourcing cleaning, additional service personnel could be hired to take care of the laundry room. It's both faster and easier to clean one single large space, than several smaller ones, spread out all across the neighbourhood.

influences, inspirational

Layout of environment

The laundry room could have any shape. A square, a rectangle - it shouldn't affect the functionality of the concept. Since I had the freedom to work with any layout, and because the building could be freestanding, I used other sources of inspiration.

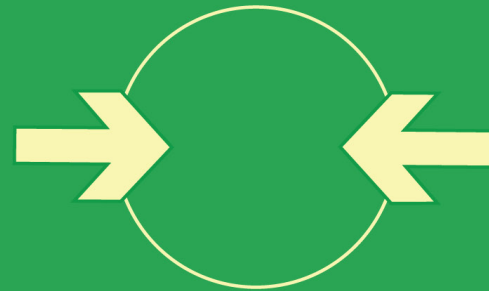
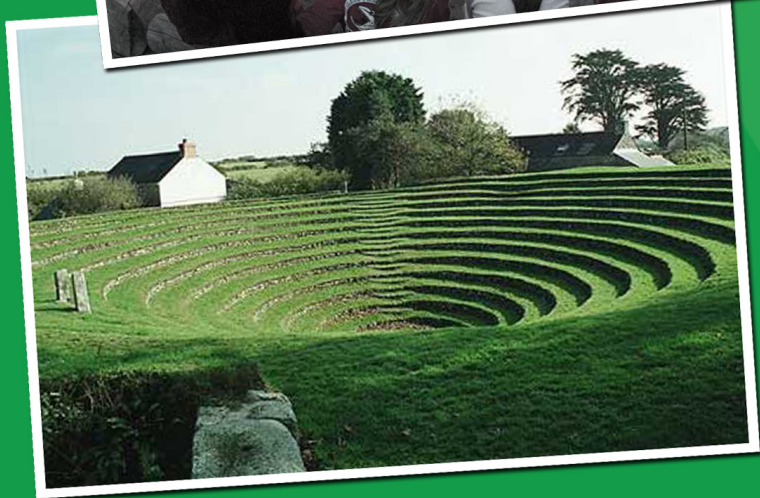
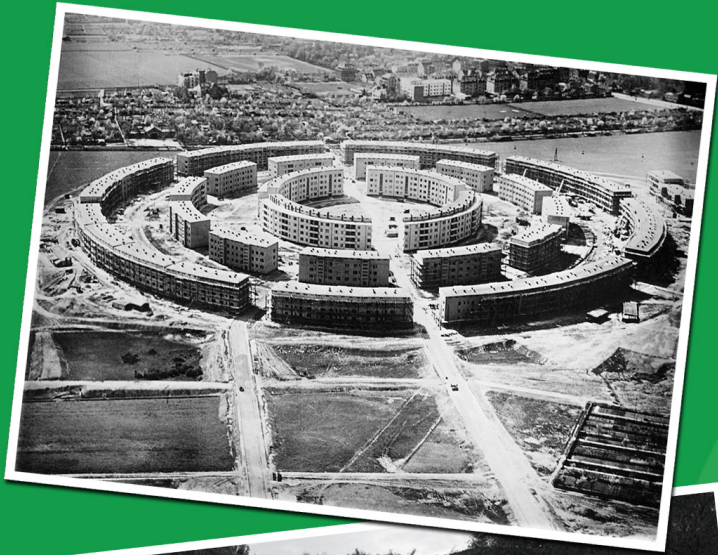
When I started to think about the shared environment, the laundry room, I felt that it could become the center of gravity in the neighbourhood. The circle can often be found when we have something to gather around, a soft shape, accessible and inviting no matter the angle.

I also would like to use this quote:

"The earth is round, all the heavenly bodies are round; they all move on round or elliptical orbits. This same image of circular globe-shaped mini worlds orbiting around each other follows us right down to the microcosmos.

We are even aroused by round forms in species propagation related eroticism. Why should I join the straying mass who want to make everything angular? I am going to pursue Galileo Galilei's philosophy: my world is also round."

- Luigi Colani.



influences, inspirational
Cohesion & Unity

general concept of layout

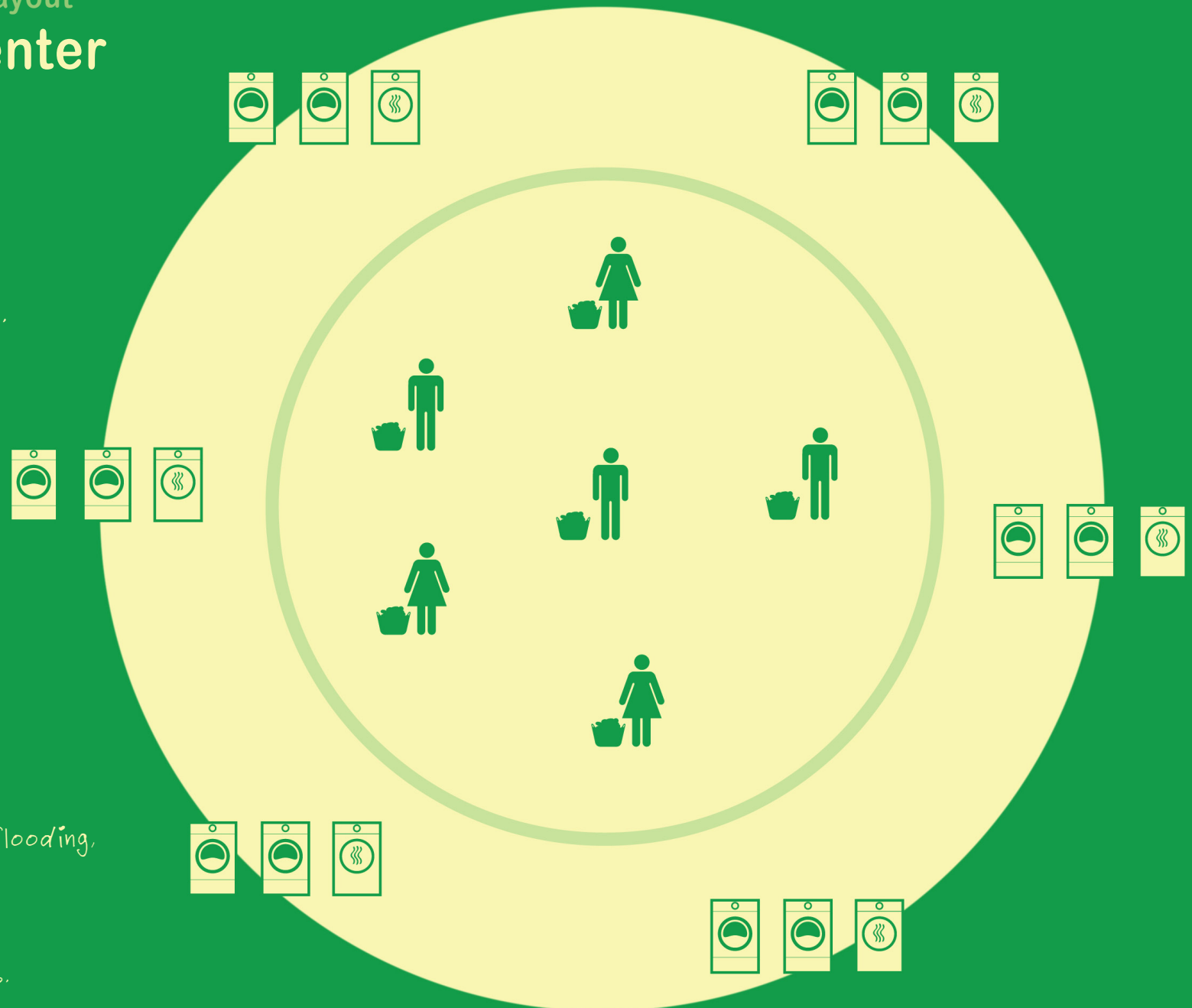
People in center

1st Idea

Felt like a natural way to approach it.

But..

- 1. the machines would obstruct view from the outside (45 of them).*
- 2. Difficulty creating a "wet area" safe from flooding, with low maintenance.*
- 3. Didn't want to create a corridor of machines.*



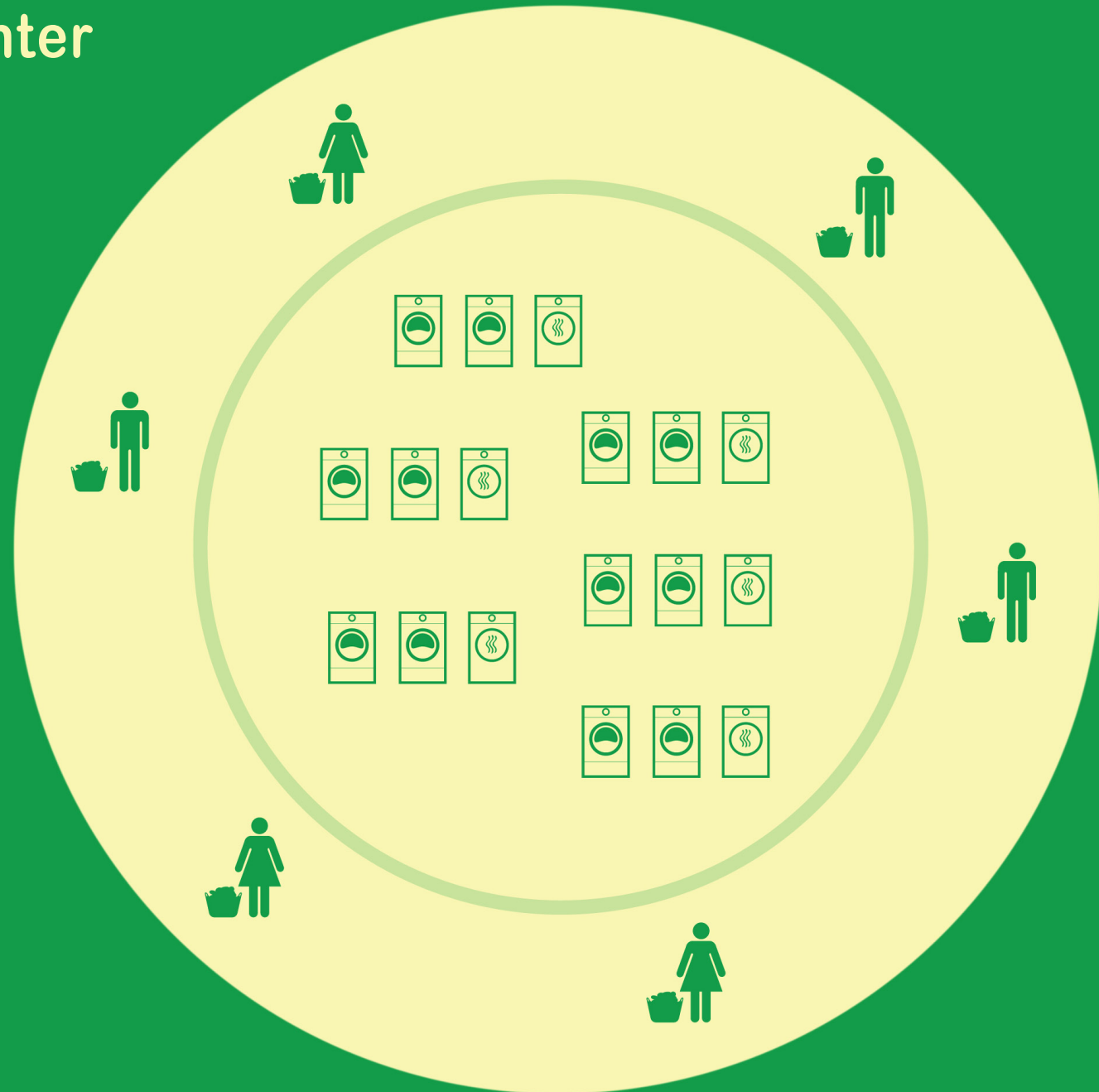
general concept of layout

Machines in center

so... here's the

2nd Idea

1. The outer wall have large glass windows People will be visible from the outside. And the lounge area bright.
2. The center is the "waterhole", easy plumbing, easy to clean, flooding safe.
3. I will make sure not to block the view across the room, and use flowing lines when possible to make the eyes wander freely.



3.3 possibilities.. Additional services

The laundry room should not just offer the possibility to take care of your laundry. The caretaker will also have the office here during working hours, so assisted booking can be offered if necessary.

A lounge area should be available, and coffee / vending machines could be installed. The laundry room should be a place where you can hang out. No need to rush back and forth between the apartment and laundry room.

It could serve as a 3rd place, a place outside home, if you feel like leaving the apartment for a while. You could do some studies, check your e-mail on your laptop or play some cards with a neighbour - either before, after or while doing your laundry.



Assisted Booking

The Janitors will have their office here..
answer questions, help out..



Lounge area

..and offer cheap coffee..



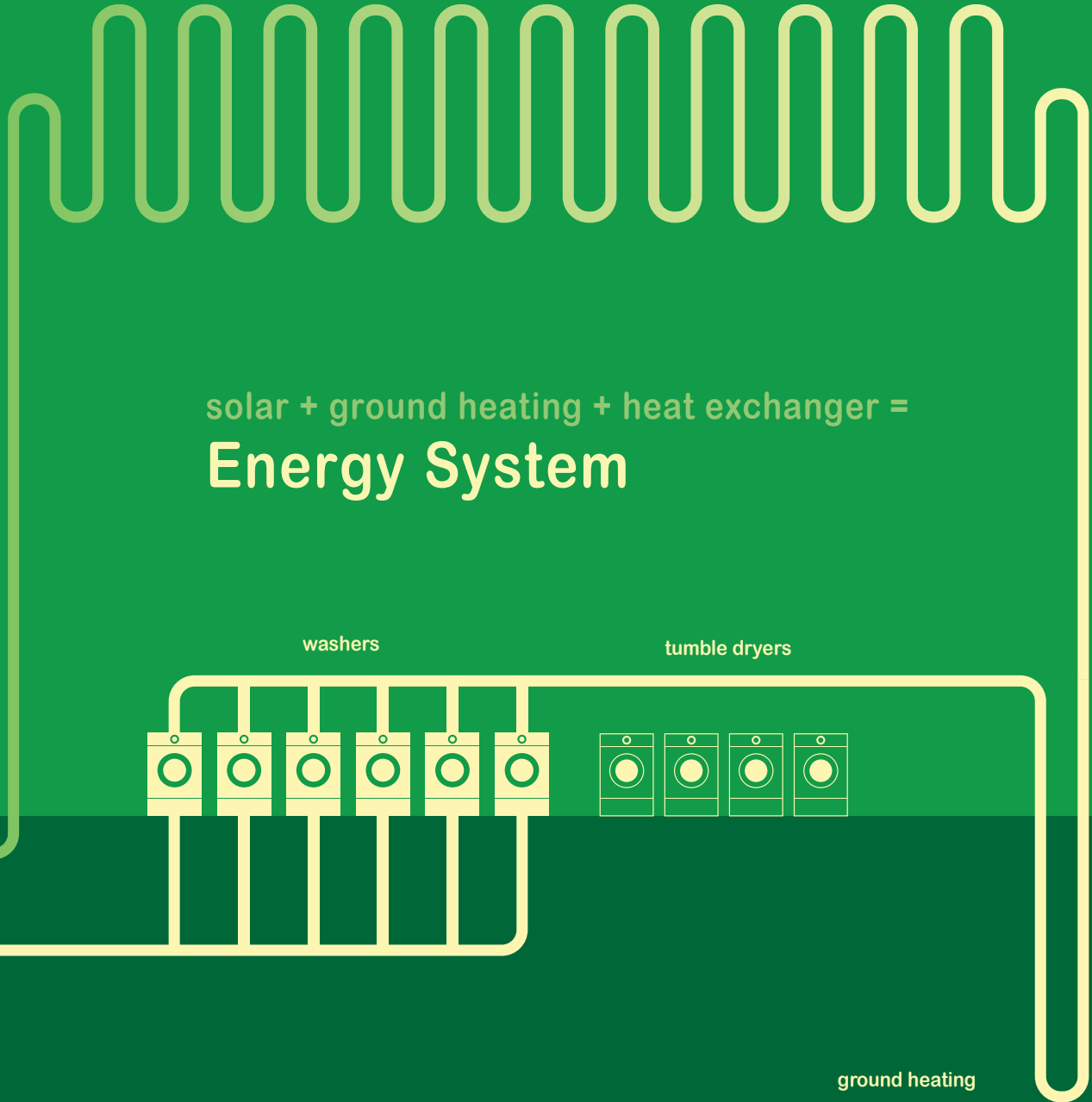
Connectivity



..and free internet



solar heating



solar + ground heating + heat exchanger =
Energy System

washers

tumble dryers

➤ inlet water ➤

heat exchangers ↑ ↑ ↑

← outlet water ←

ground heating

setting up a..

Energy System

When creating a large scale laundry room, investing in renewable energy sources could be worthwhile.

Solar thermal technology is utilized to heat water and is frequently an impressive 70-90% efficient.

A laundromat is an ideal application. Exactly the opposite of a gas or electric hot water heater, the more use the solar system gets, the larger the energy and cost savings. Ground heating could also be utilized, and finally by using heat exchangers the excess heat in the outlet water could be transferred back to the inlet water.

Source:

<http://cleantechnica.com/2008/03/06/4-things-to-consider-before-going-solar/>

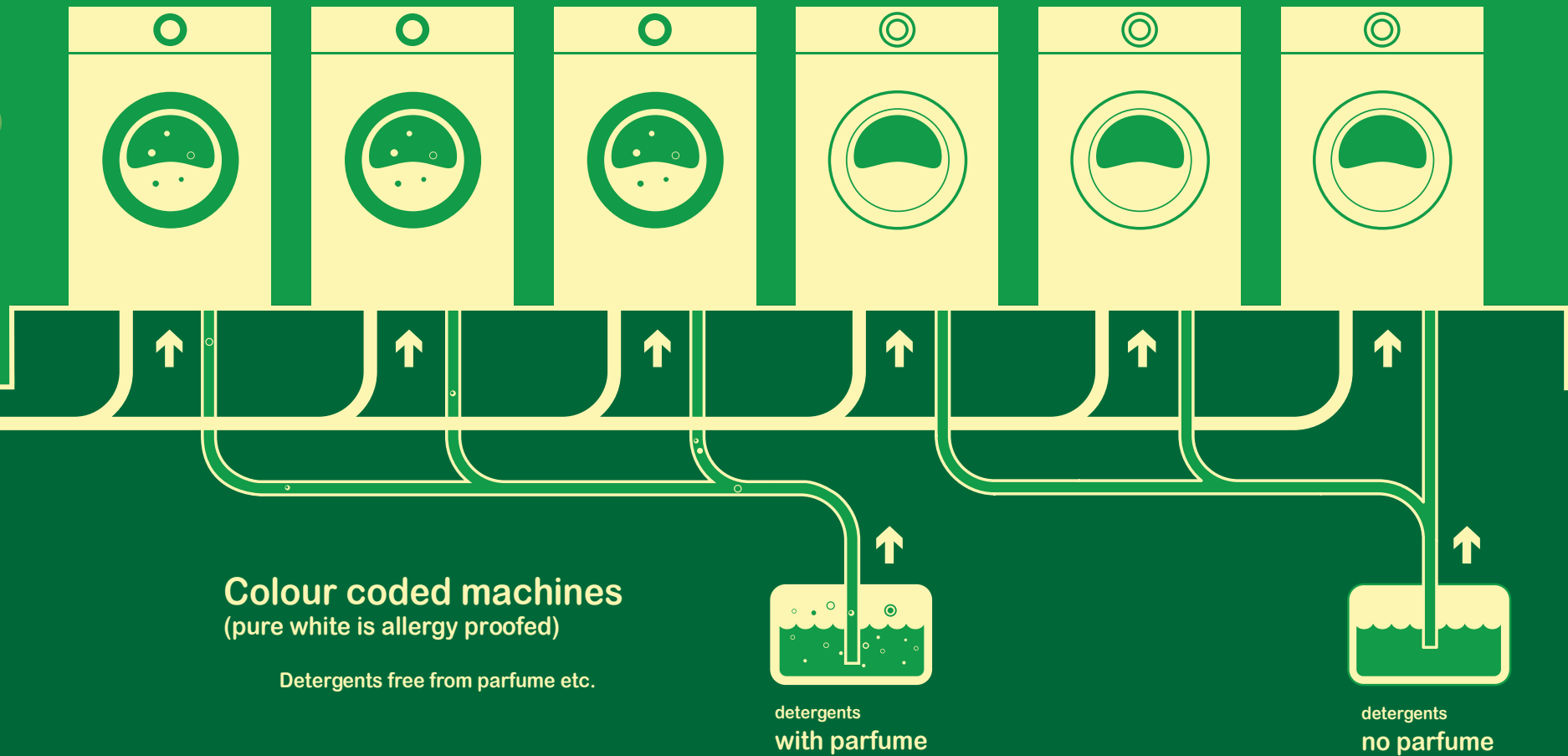
closed system with automatic dispensers

Health & Allergy

Leftover detergents with perfume in the machine is a risk for users with allergies.

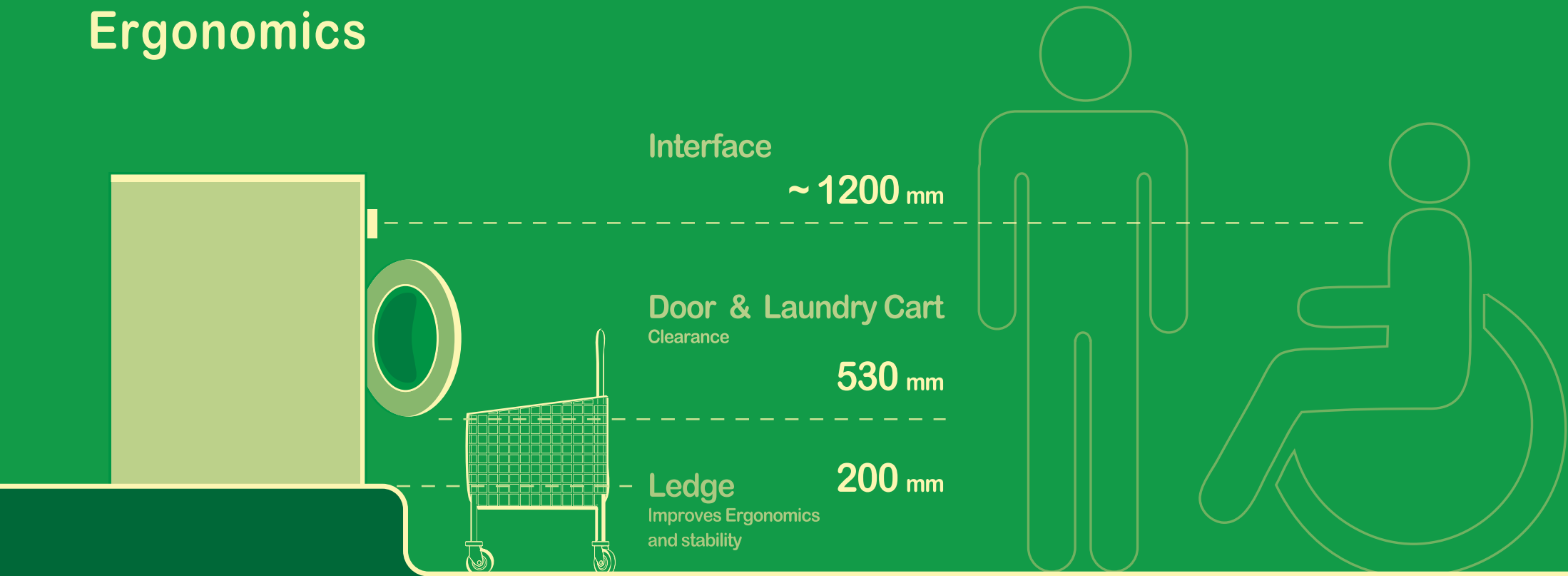
Colour coded machines with closed loop system for detergents and water will provide a safe solution for these users. Different scents and detergents are still available for other users as several areas with regular machines will be available. Green for "spring", Blue for "ocean" etc.

Automatic dispensers will also reduce the amount of spill & mess in the laundry room, thereby reducing irritation & amount of cleaning necessary.



Measurements & Clearances

Ergonomics



Ergonomics

Standard dimensions are often used for machines which provide good ergonomics and accessibility.

Top loaded machines will be avoided since these limit the accessibility for users in wheelchairs, but also because they use more water than front-loaded counterparts.

Source:

<http://www.whitegoodshelp.co.uk/wordpress/which-is-best-a-top-loader-or-a-front-loader-washing-machine/>

Clearances

Professional machines are often placed on ledges for improved stability and ergonomics. Laundry carts should be able to clear the door when opened, and for these laundry carts standard dimensions are also used.

The ledge also reduces the amount of cleaning necessary around the machine.

3.4 Kevin Lynch / Cityplanner A bit of theory

He developed a theory for splitting the city (or an environment) into different components. The method is a way of achieving overview and understanding.

These are components I've been working on

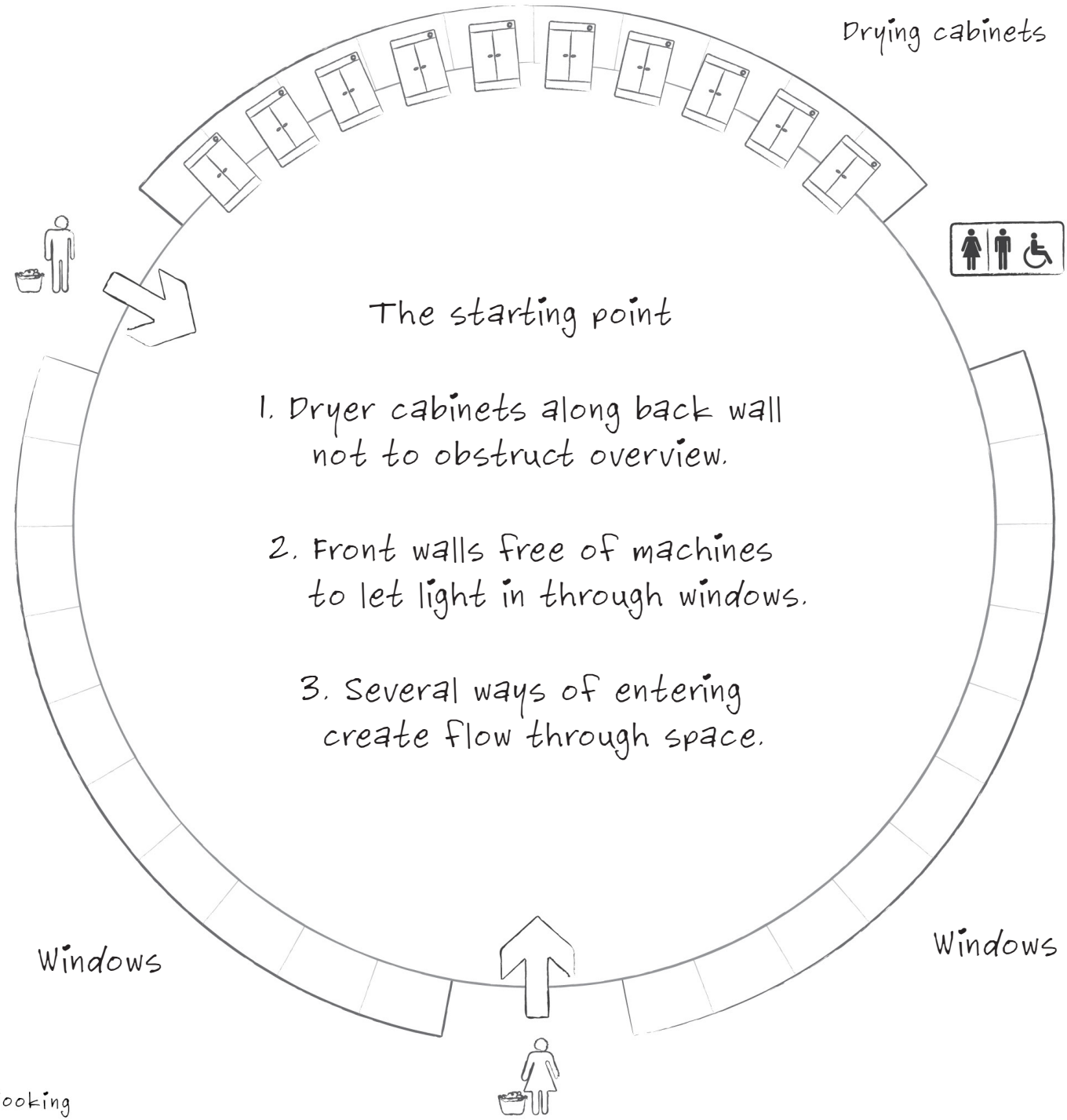
1. Paths to guide
2. Barriers to create spatiality
3. Areas with different character (kind of)
4. Nodes/Crossings where people meet

3.5 My wishlist Thoughts for laundry room

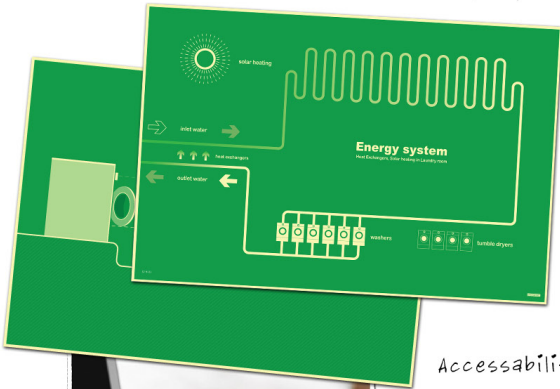
The laundry room

- The layout should encourage people to interact, but also provide private areas if necessary.
- The layout should provide a logical flow when washing, drying, folding.
- I want the laundry room to be open and transparent. No walls or machines blocking the view from one side to the other. People should feel like they are in control of the situation. Increase feeling of security.
- It should be easily accessible for people using wheel-chairs (no stairs, one floor). It should also be open 24/7 and provide a booking system which reduces conflicts between neighbors in the laundry room.
- It should provide facilities as bathrooms and a lounge where you can sit and wait for your laundry to be done, making it easy to keep your eyes on the laundry and the progress.
- As much natural light as possible should enter the room. Large windows should allow people look inside, as well as for people in the lounge to follow what's going on the outside.
- You should feel welcome when entering, and if possible, assisted booking would be provided by the local caretaker. Additional services as coffee & Wi-Fi would also be offered.
- Cleaning should be simplified, and reduced as much as possible. One person should be able to handle the maintenance and service.

creating 3.6 The layout



Energy system



Accessibility



Connectivity



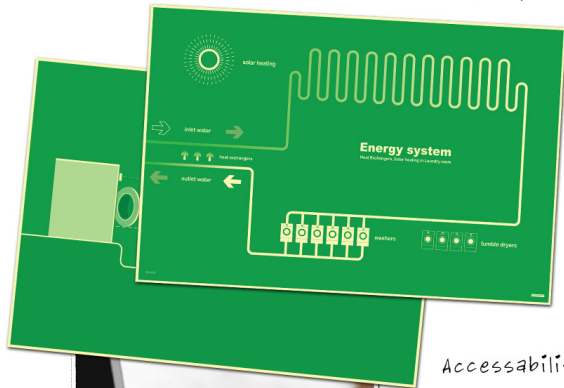
Lounge area



Assisted Booking

layout
Main areas

Energy system



Accessibility

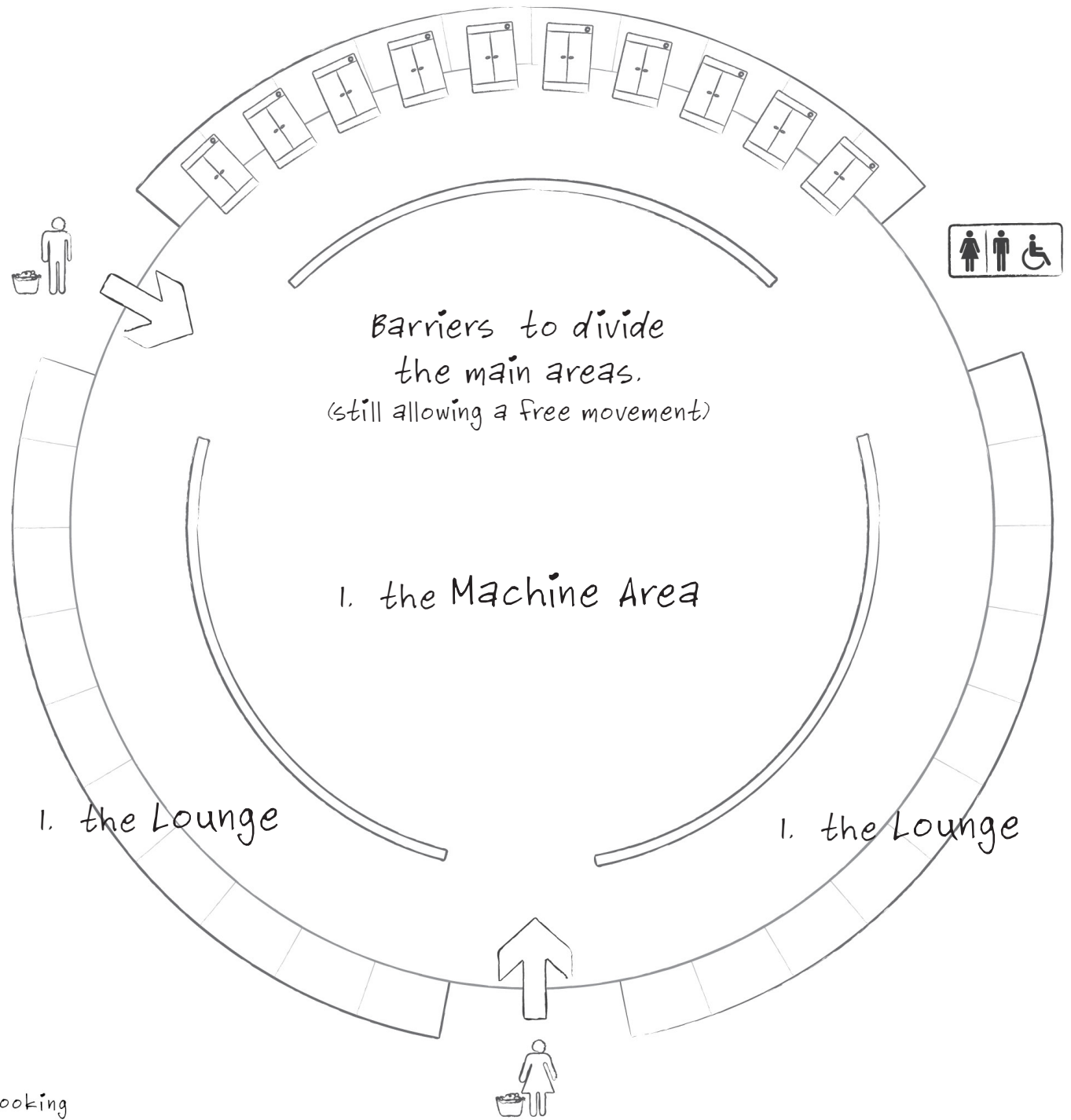
Connectivity



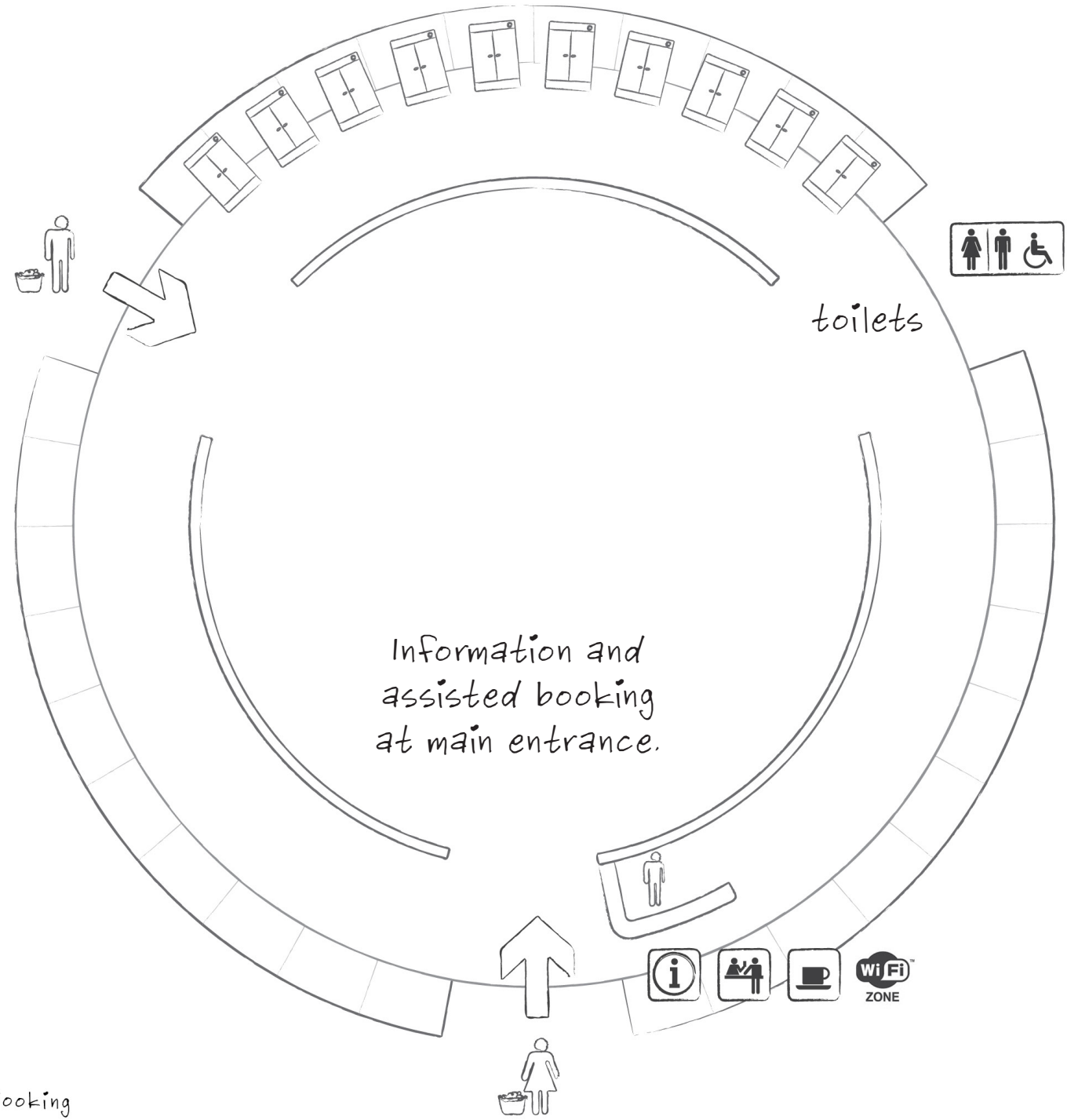
Lounge area



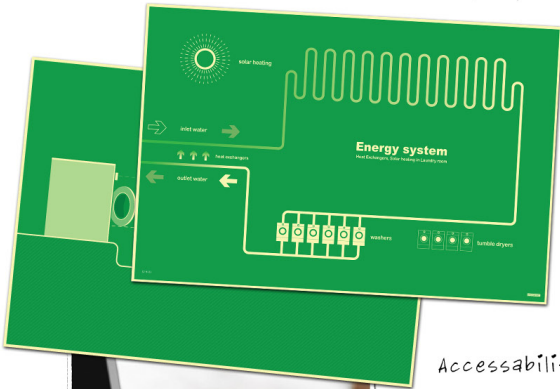
Assisted Booking



layout Entrances



Energy system



Accessibility



Connectivity



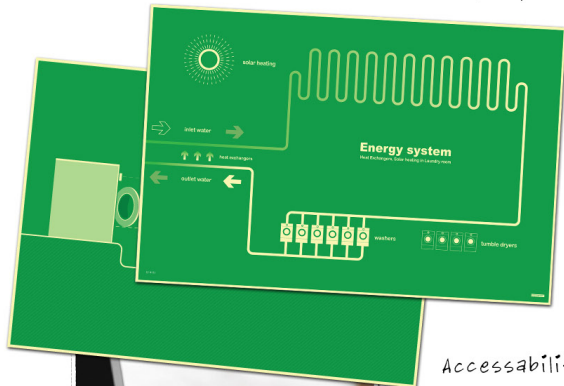
Lounge area



Assisted Booking

layout Overview & Transparency

Energy system



Accessibility



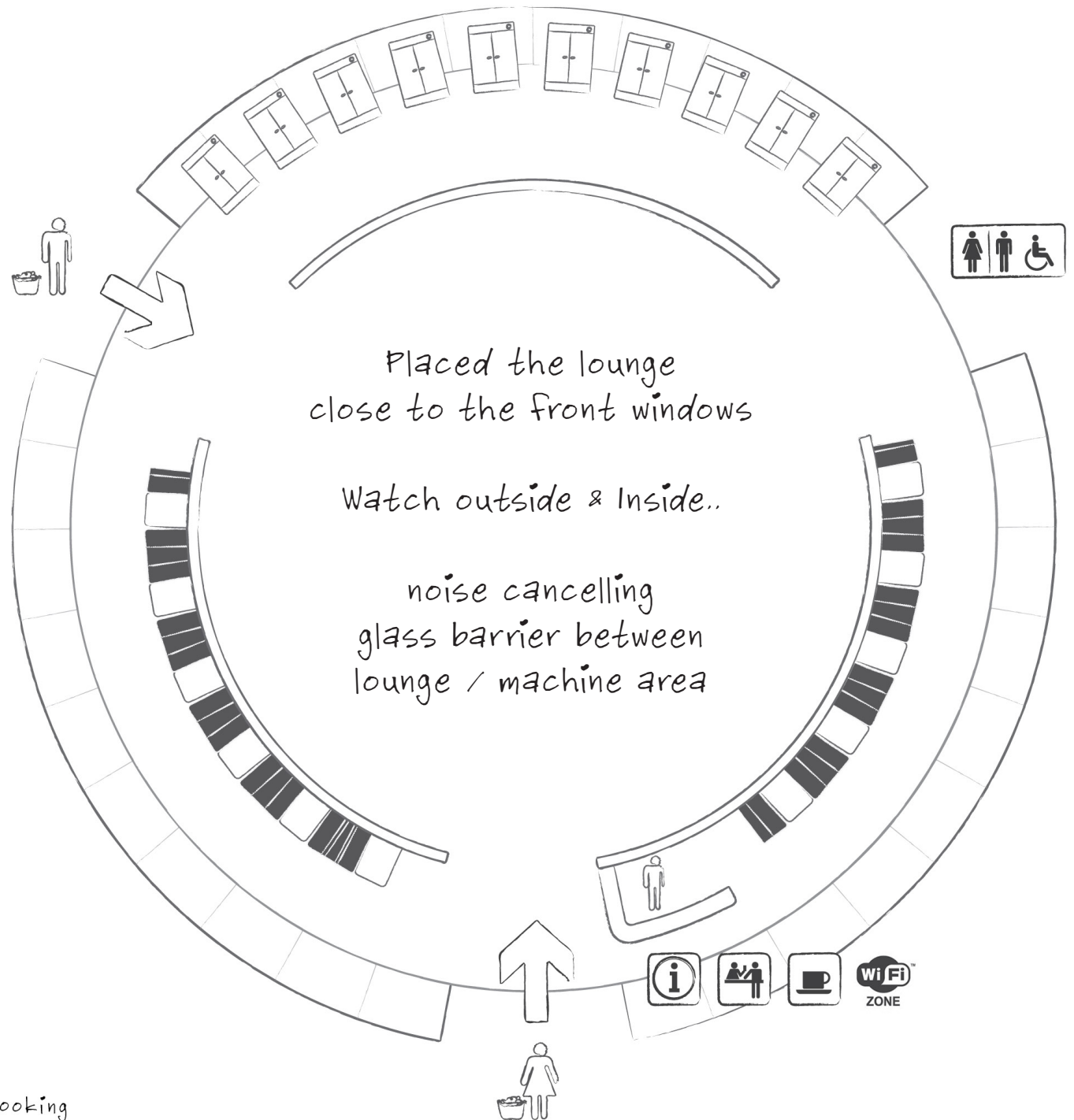
Connectivity



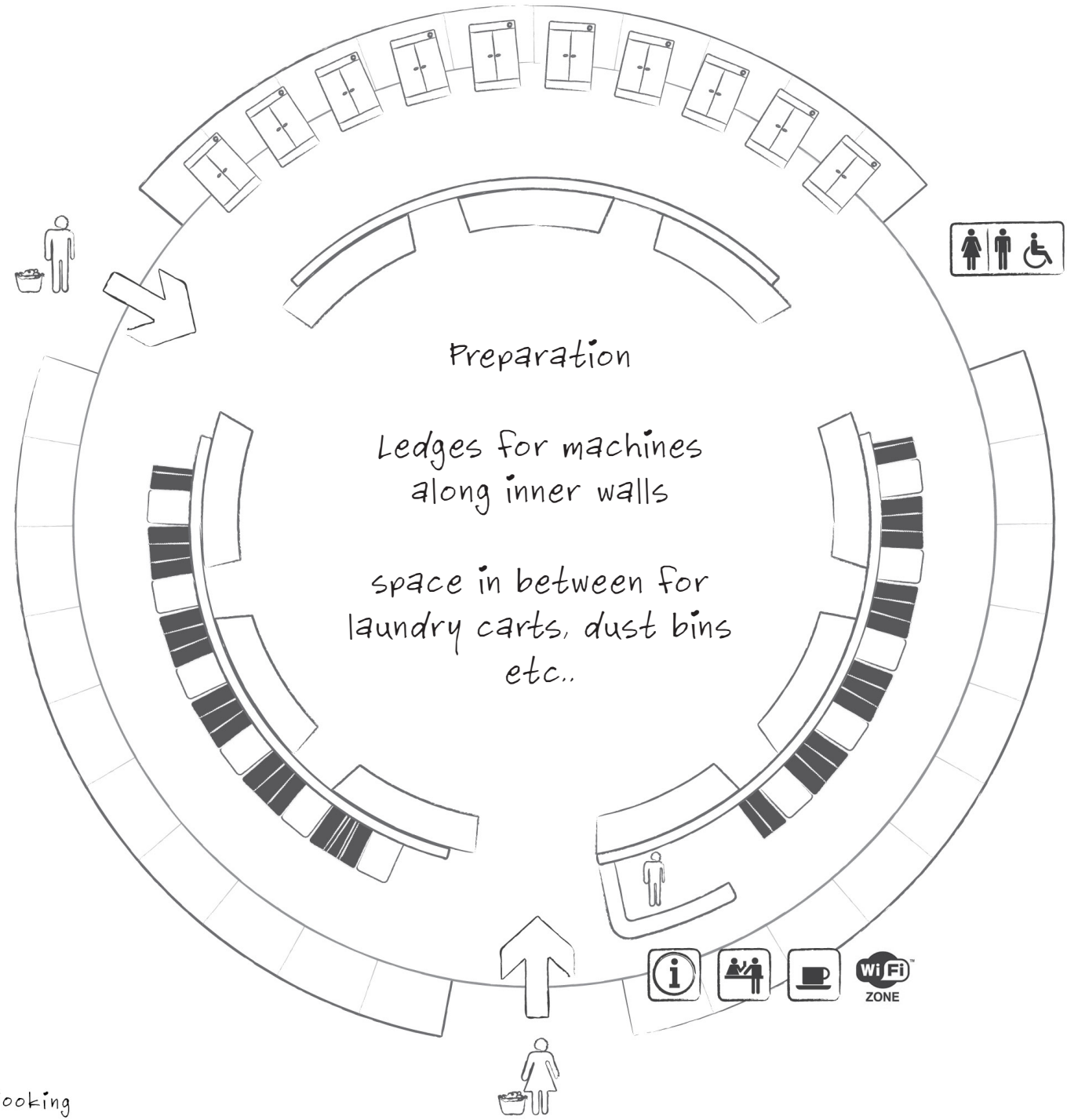
Lounge area



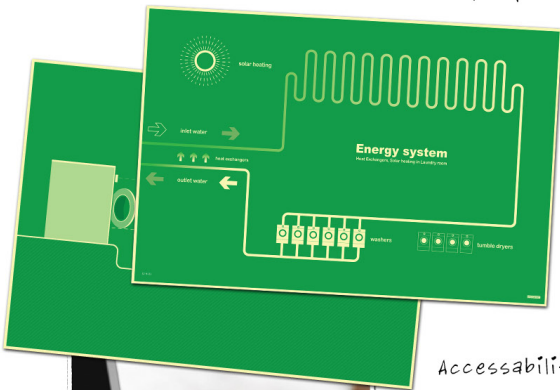
Assisted Booking



layout Ledges & Walls



Energy system



Accessibility



Connectivity



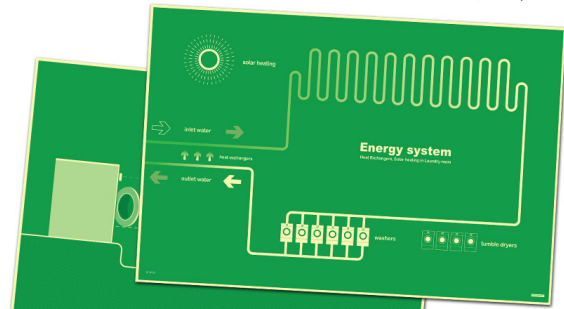
Lounge area



Assisted Booking

layout How to divide?

Energy system



Accessibility



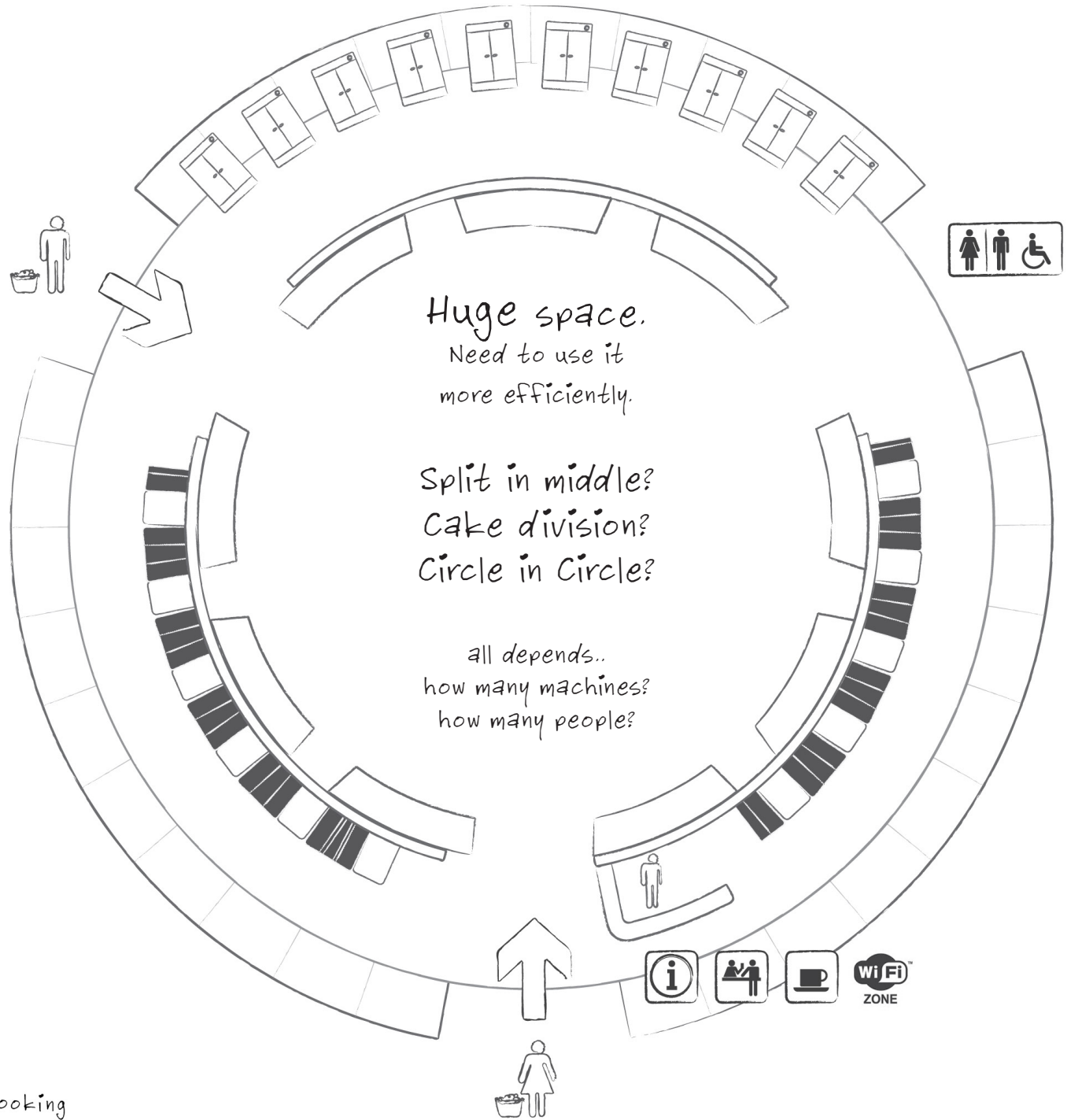
Connectivity



Lounge area

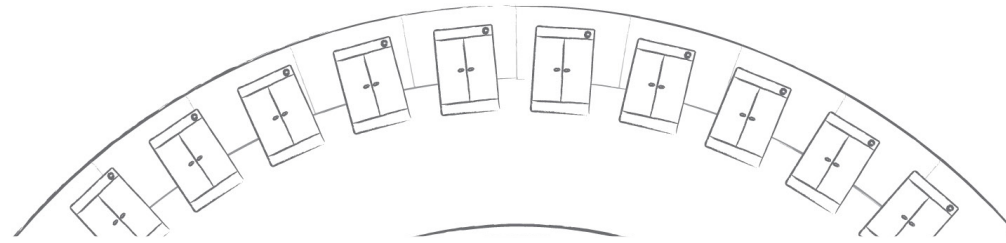


Assisted Booking



layout

How to divide?



Calculating space...

1.

so..

how many people?

$$\frac{45 \text{ (machines in total)}}{3 \text{ (machines per booking)}} = 15 \text{ people at most.}$$

how much space is needed?

2.

...if my environment is X meters across...
lets see..how do I do this again?

$$\frac{\pi * X^2}{2} = \text{total area}$$

(the radius)

3.

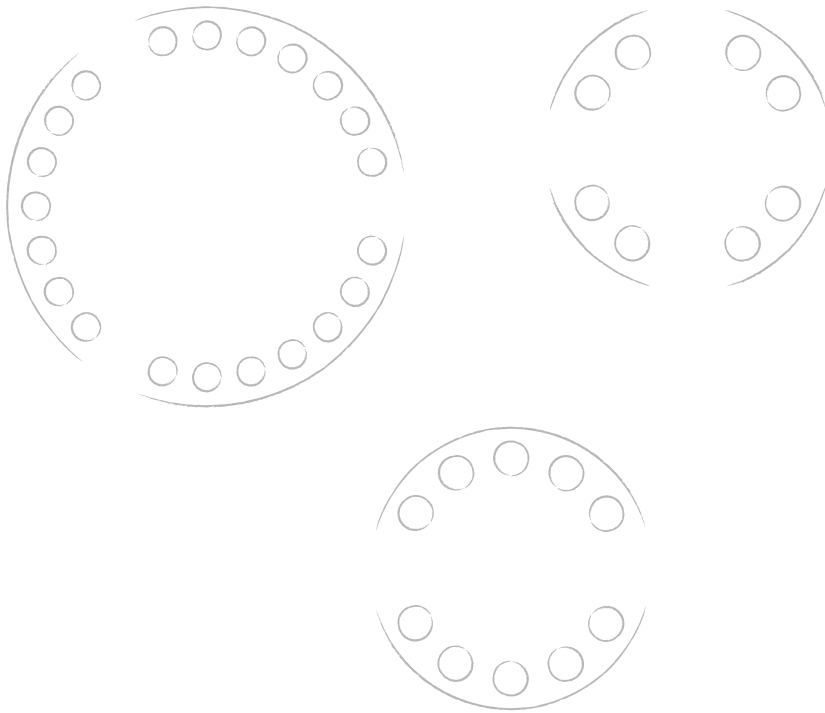
all depends...

People at most..

$$\frac{\text{People at most..}}{\text{Total area}} =$$

enough space?





Dividing the space..

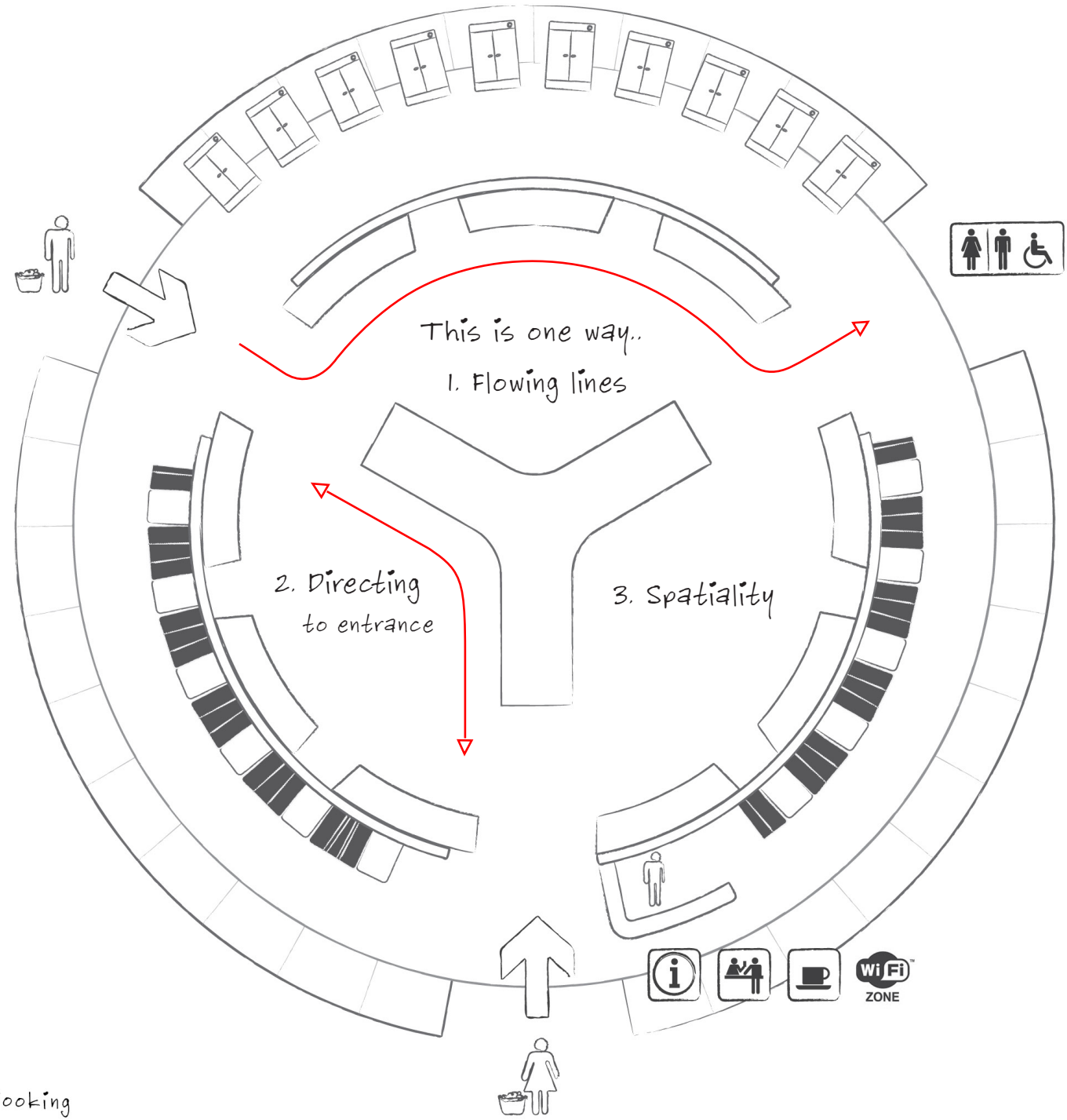
It comes down to numbers

The final shape and division of the room had almost everything to do with my startingpoint.

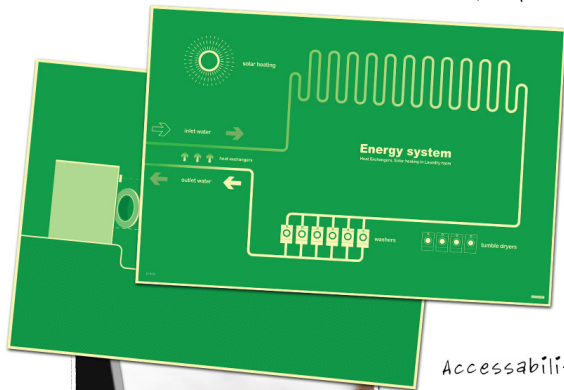
I tried to achieve an even distribution of 45 machines (the number needed to support Vildanden), in groups of 3 each (will explain why later on).

If the concept would be applied to a smaller environment or neighbourhood with fewer machines / less people, the layout would have turned out in a different way.

layout Flow & Spatiality



Energy system



Accessibility



Connectivity



Lounge area



Assisted Booking


layout

Focus points & Barriers


Energy system




Accessibility



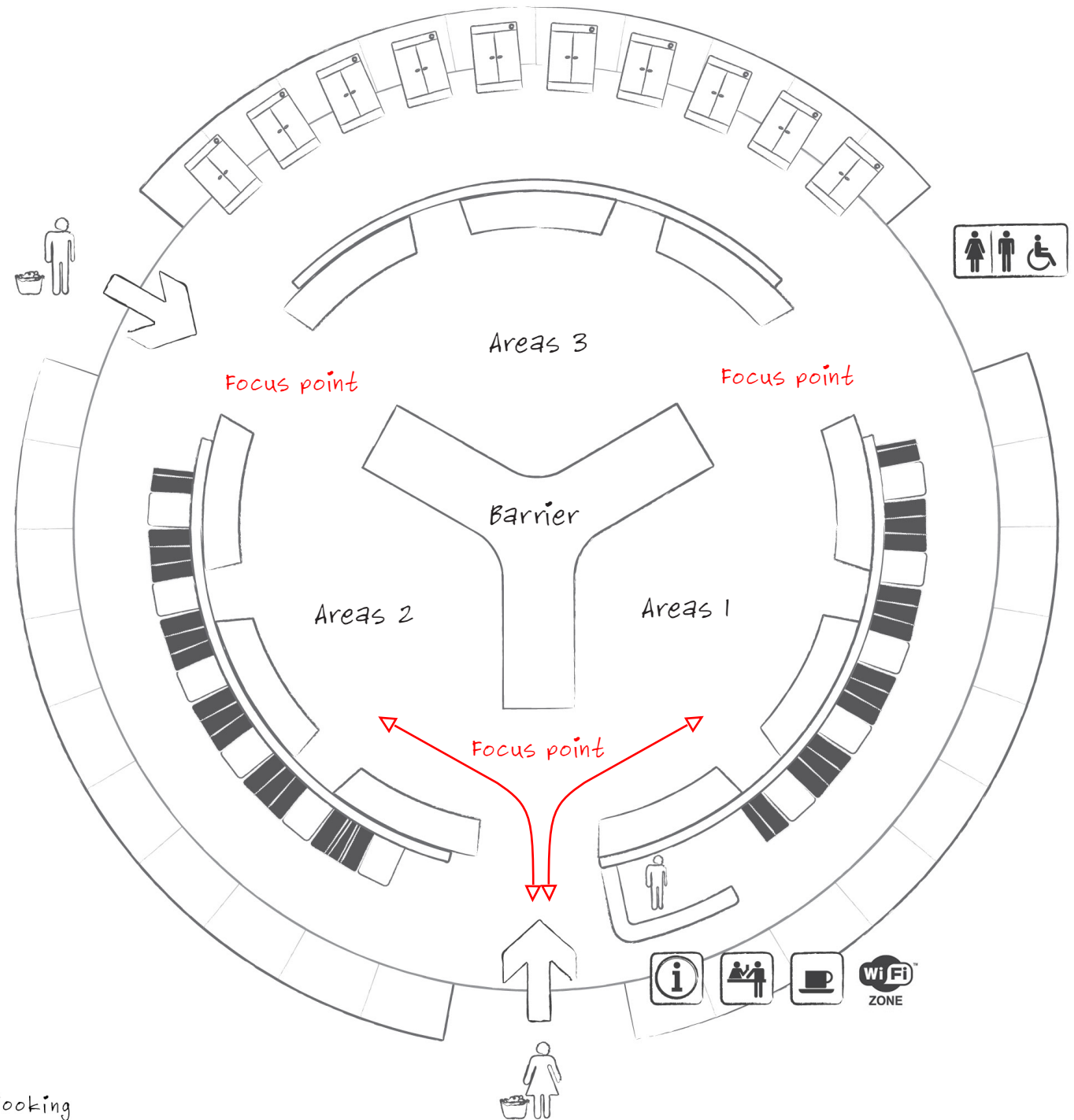
Connectivity



Lounge area



Assisted Booking

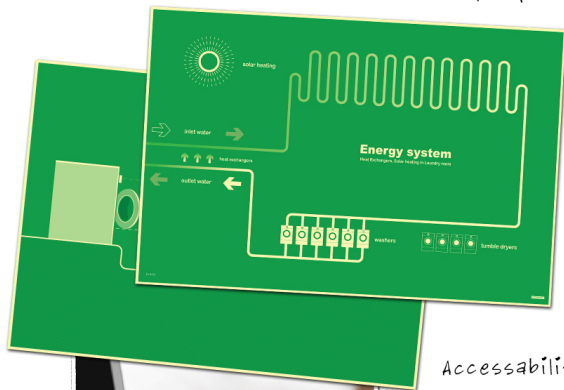


layout Low maintenance

Area should be as low maintenance as possible

lowered floor = safe from flooding etc.
just use a water hose to clean.

Energy system



Accessibility



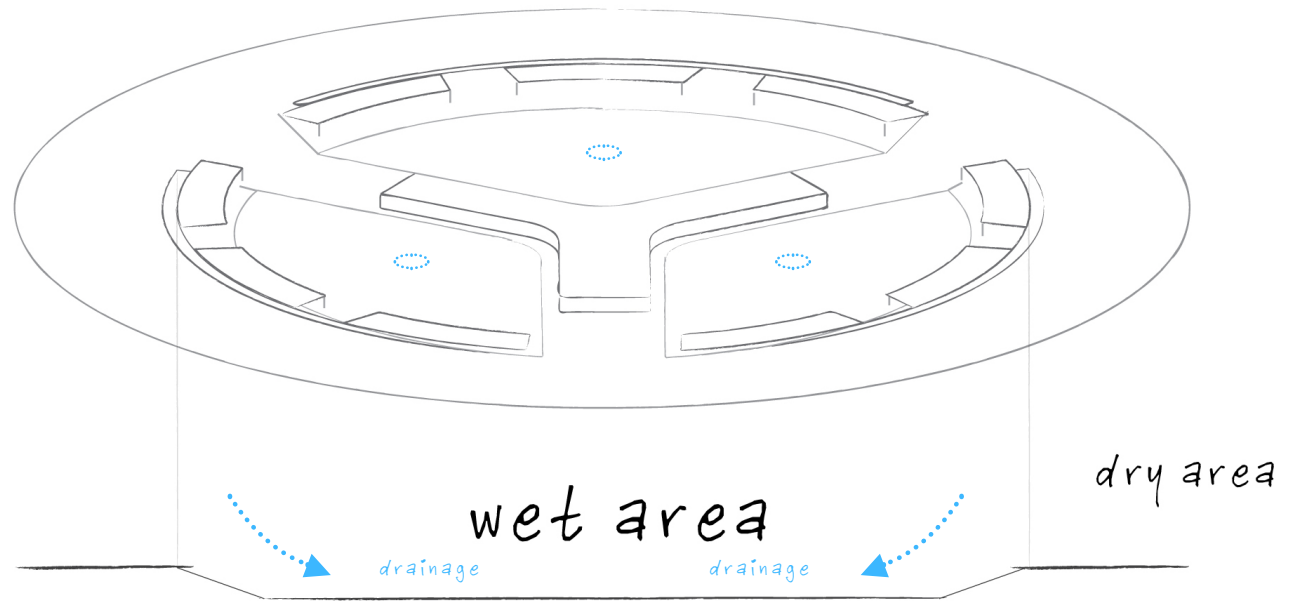
Connectivity



Lounge area

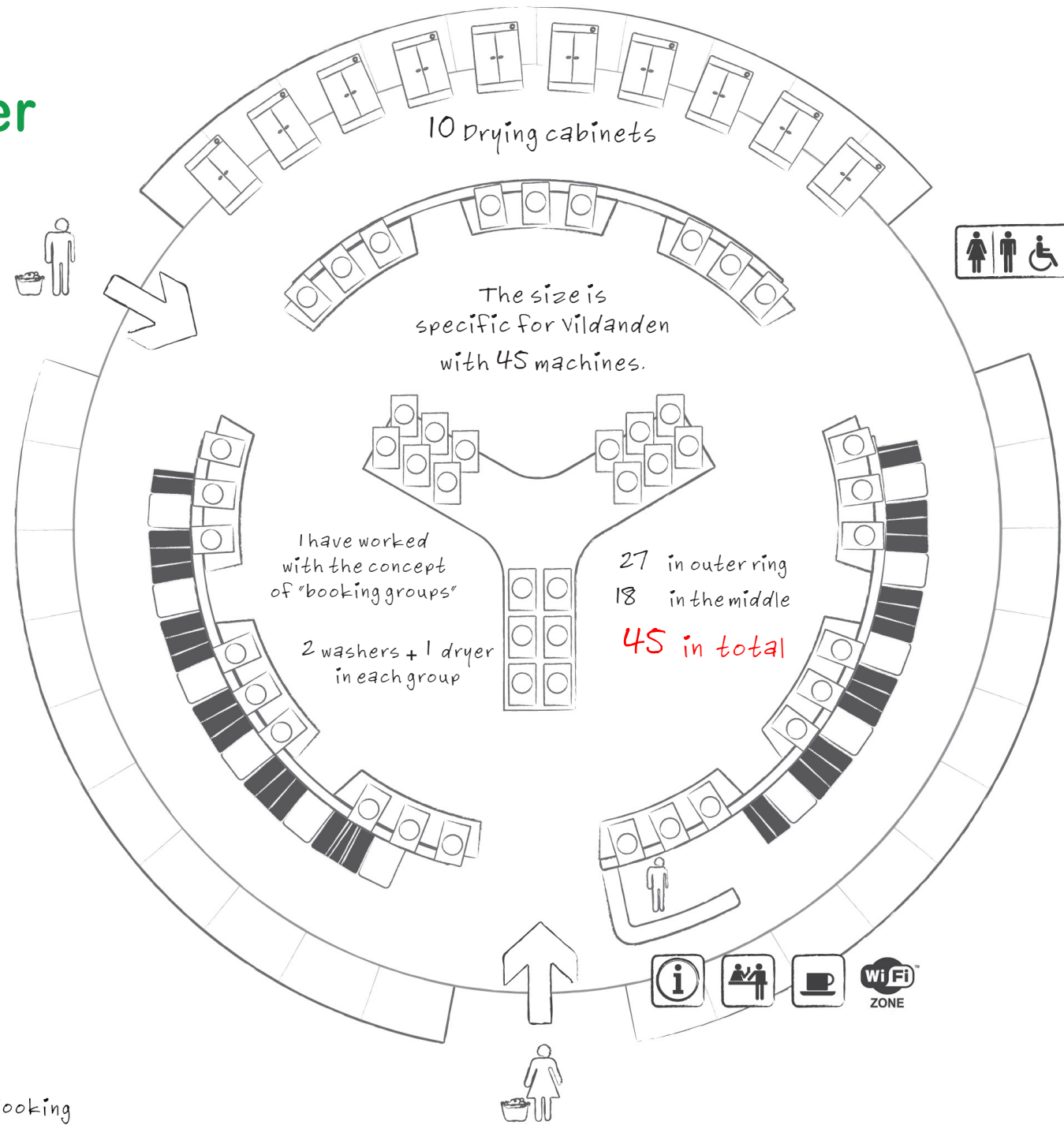


Assisted Booking

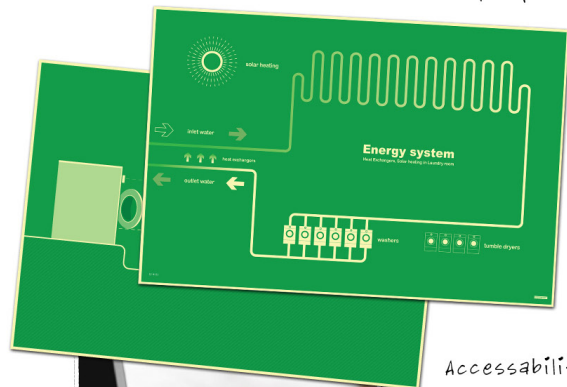


- 1 easy to clean
- 2 overview from lounge

layout Machines in center



Energy system



Accessibility



Connectivity



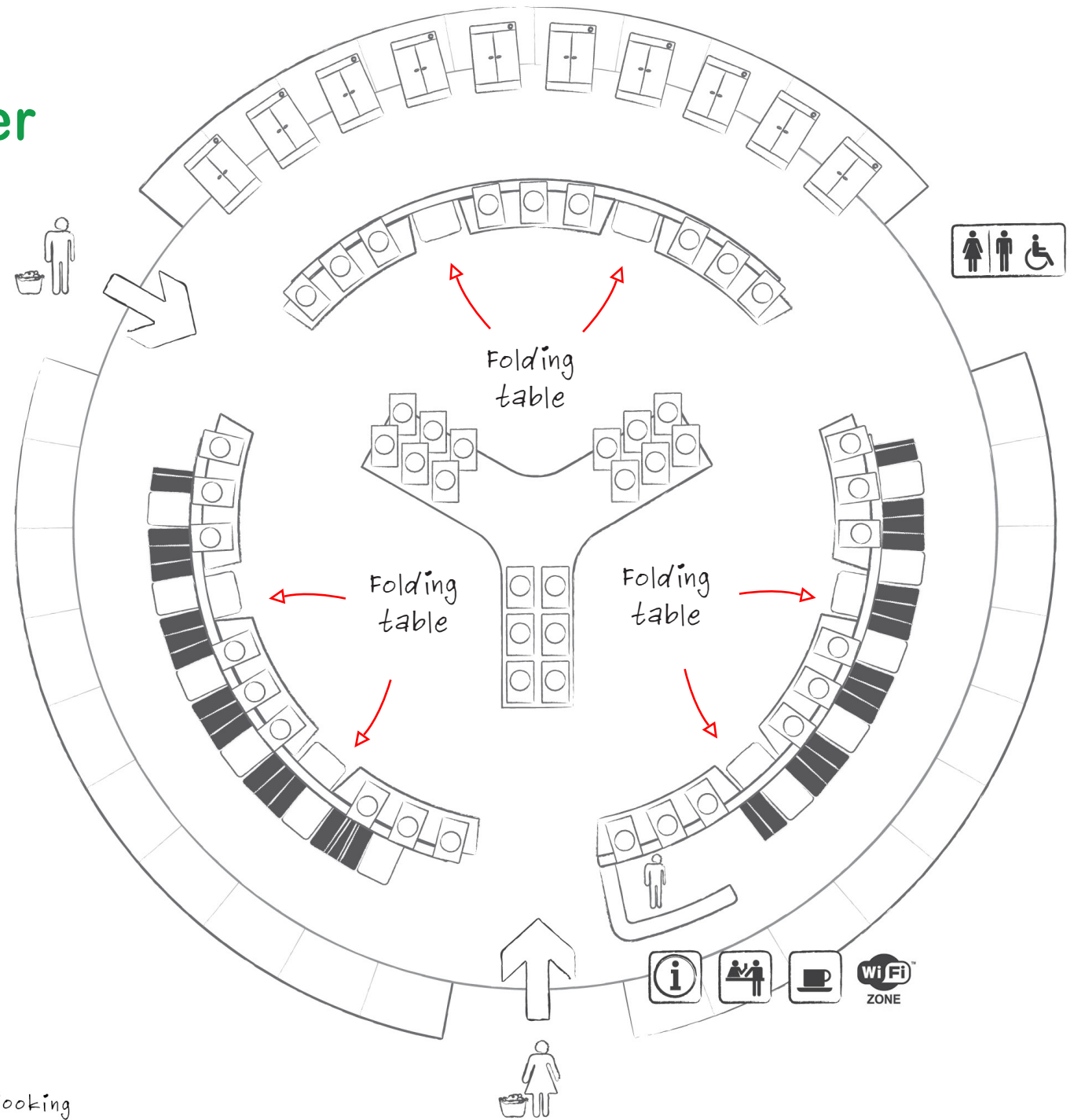
Lounge area



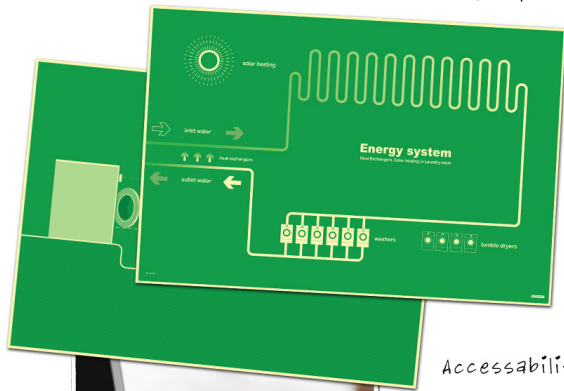
Assisted Booking

layout

Machines in center



Energy system



Accessibility



Connectivity



Lounge area

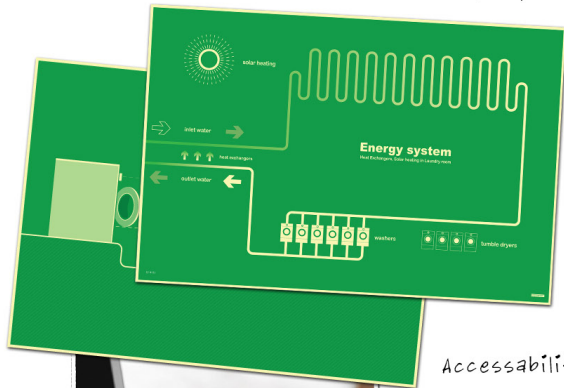


Assisted Booking

layout

Machines in center

Energy system

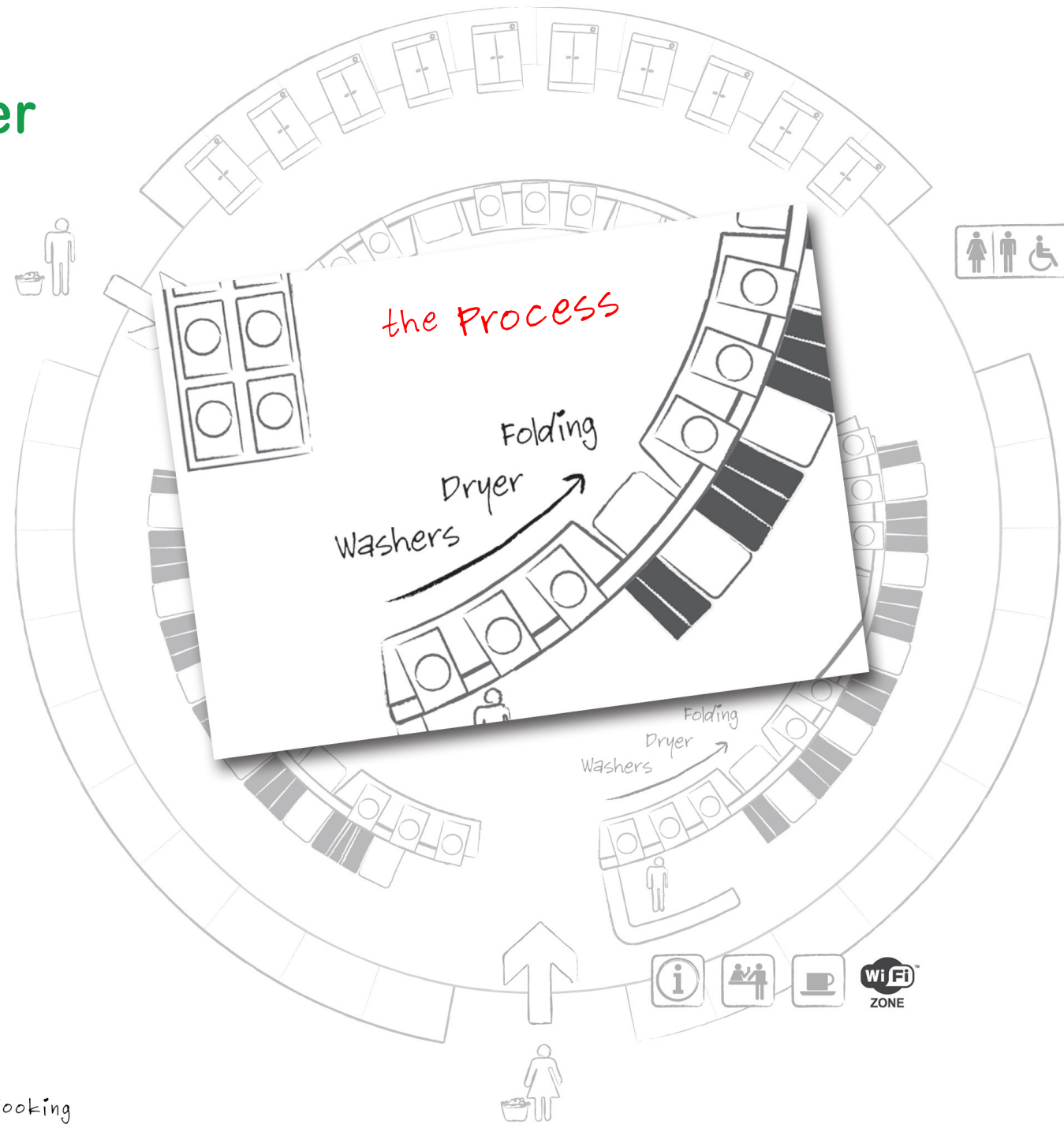


Accessibility

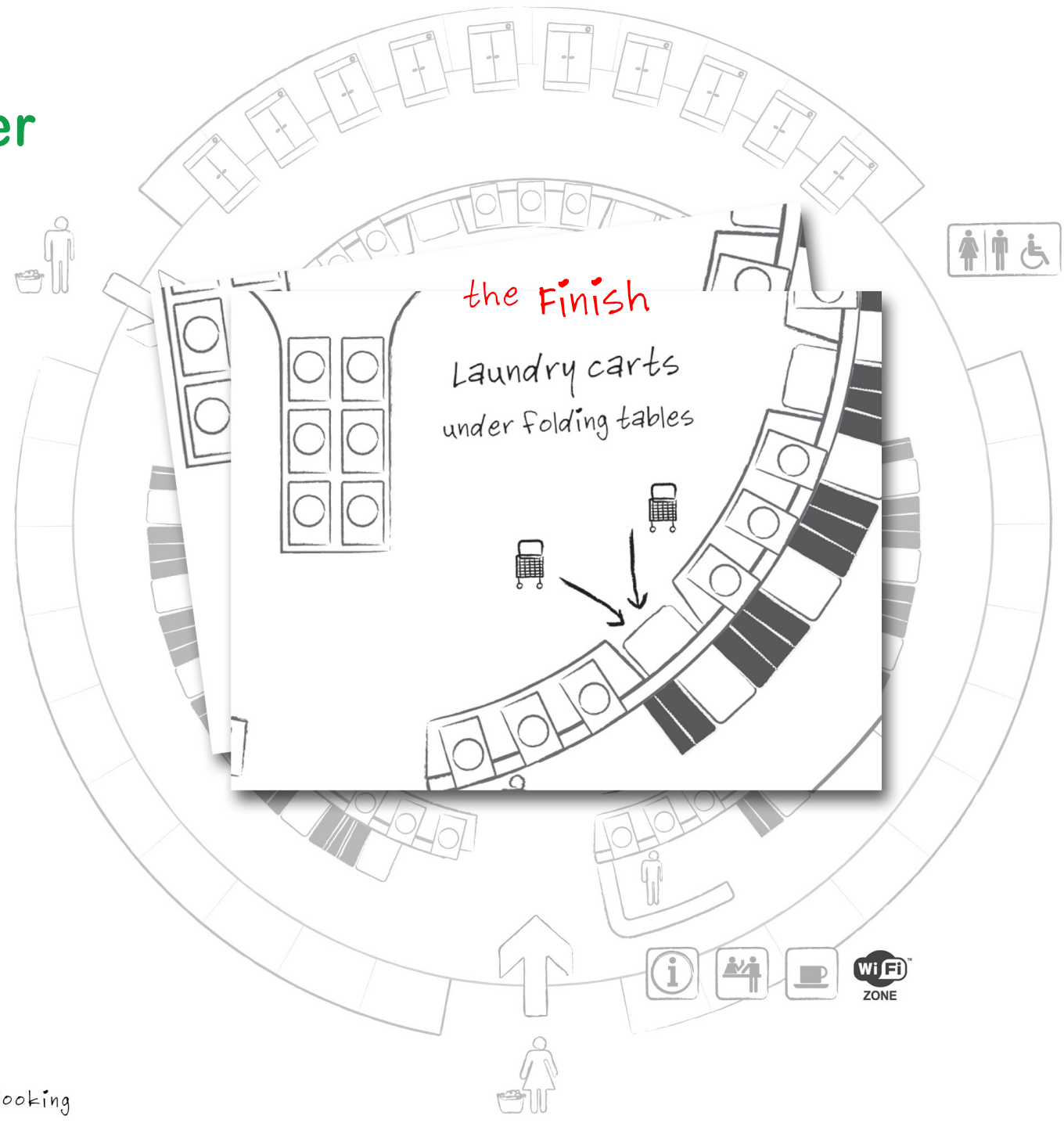
Connectivity

Lounge area

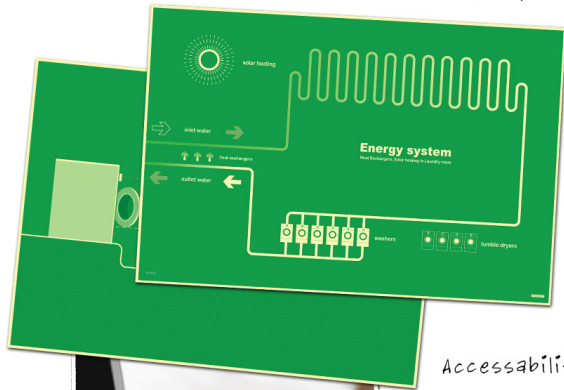
Assisted Booking



layout Machines in center



Energy system



Accessibility



Connectivity



Lounge area



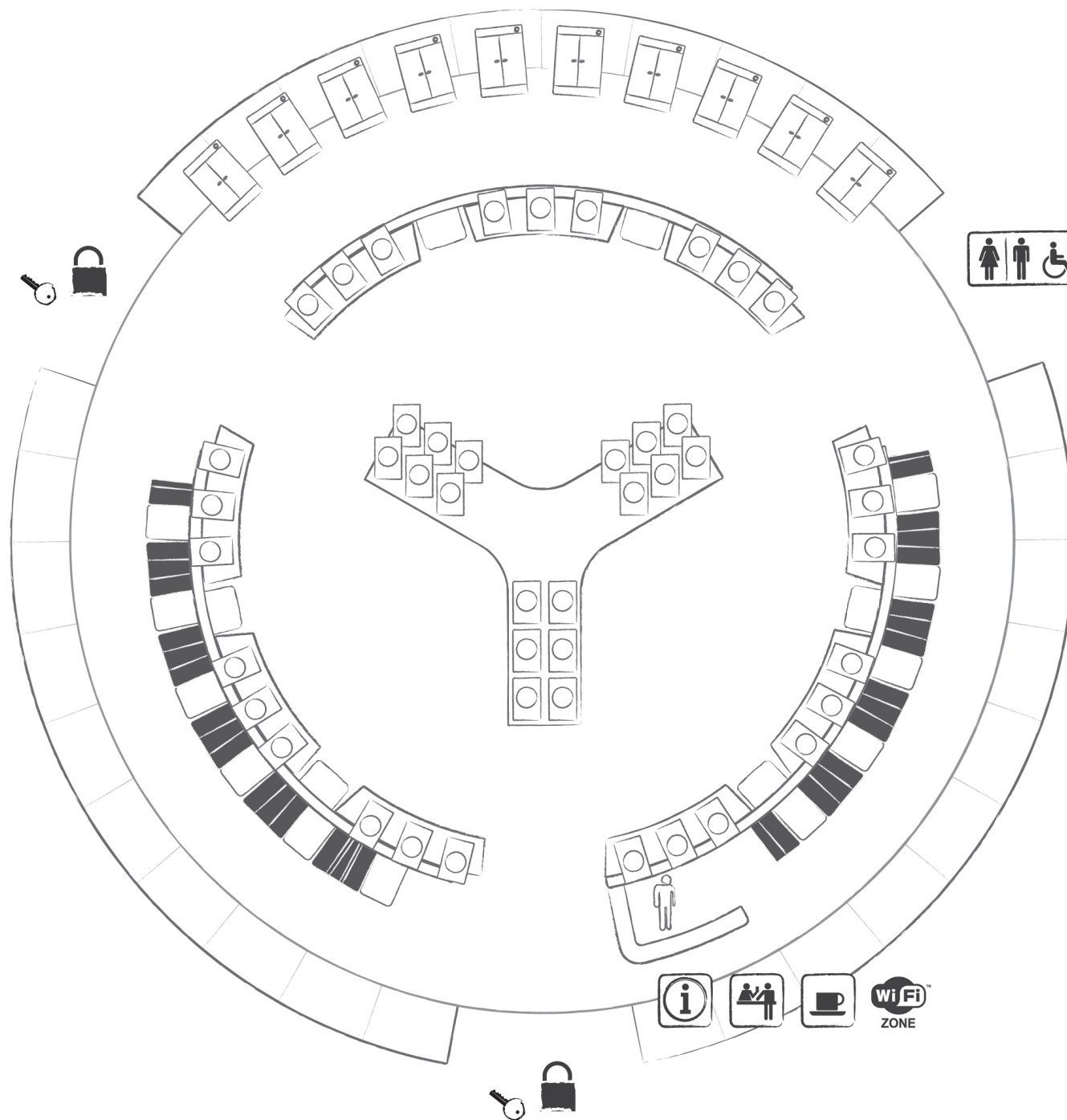
Assisted Booking

3.7

Planning for Booking System How to access?

Unlocked
when manned
09:00 – 17:00
(by caretaker)

When locked
all tenants can
enter with magnetic keytag

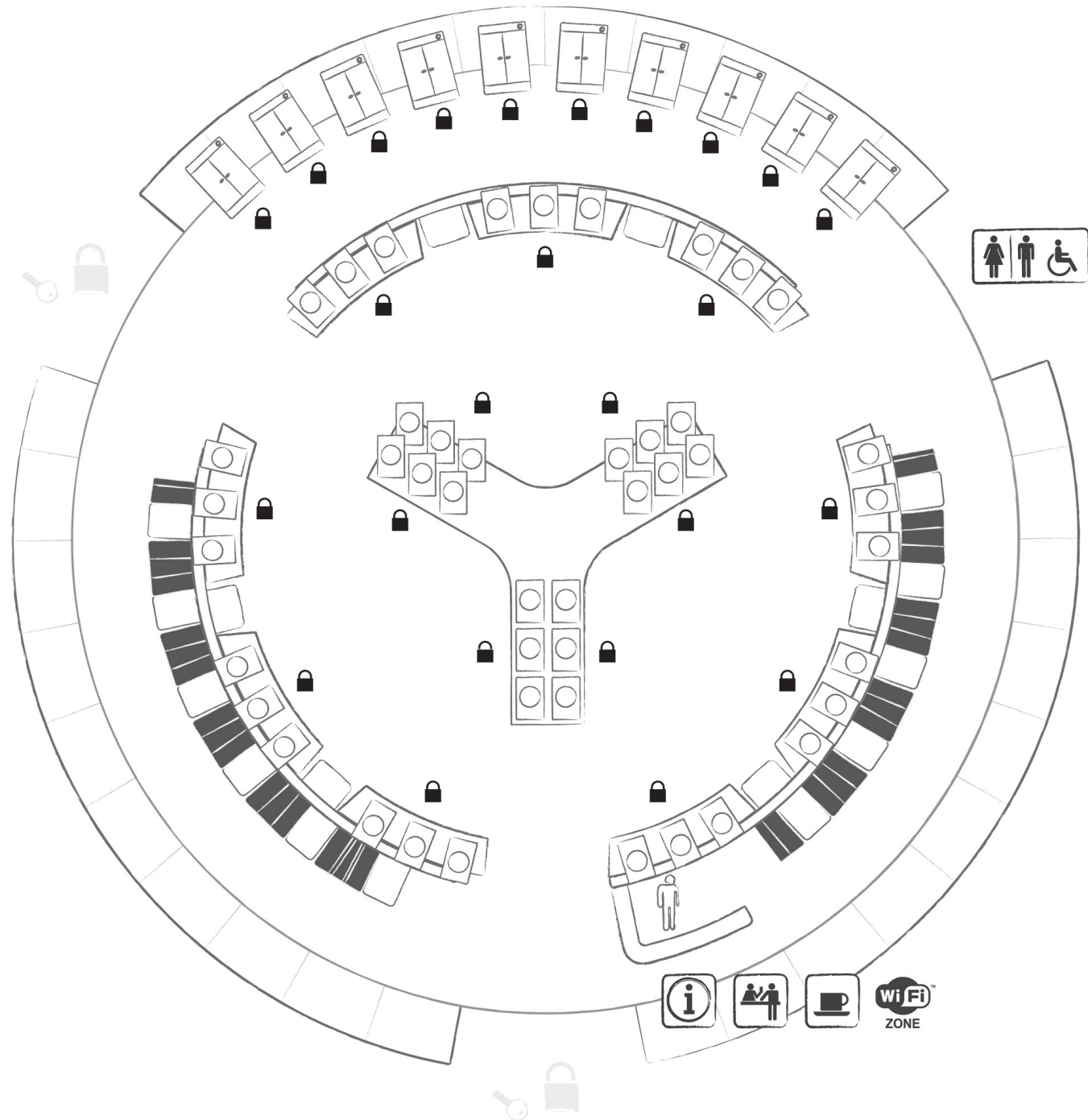


Planning for Booking System Open space & Locked machines

so..
Open environment,
locked machines.

if you can't use
the machine..

it's just not yours.
(no need to argue)



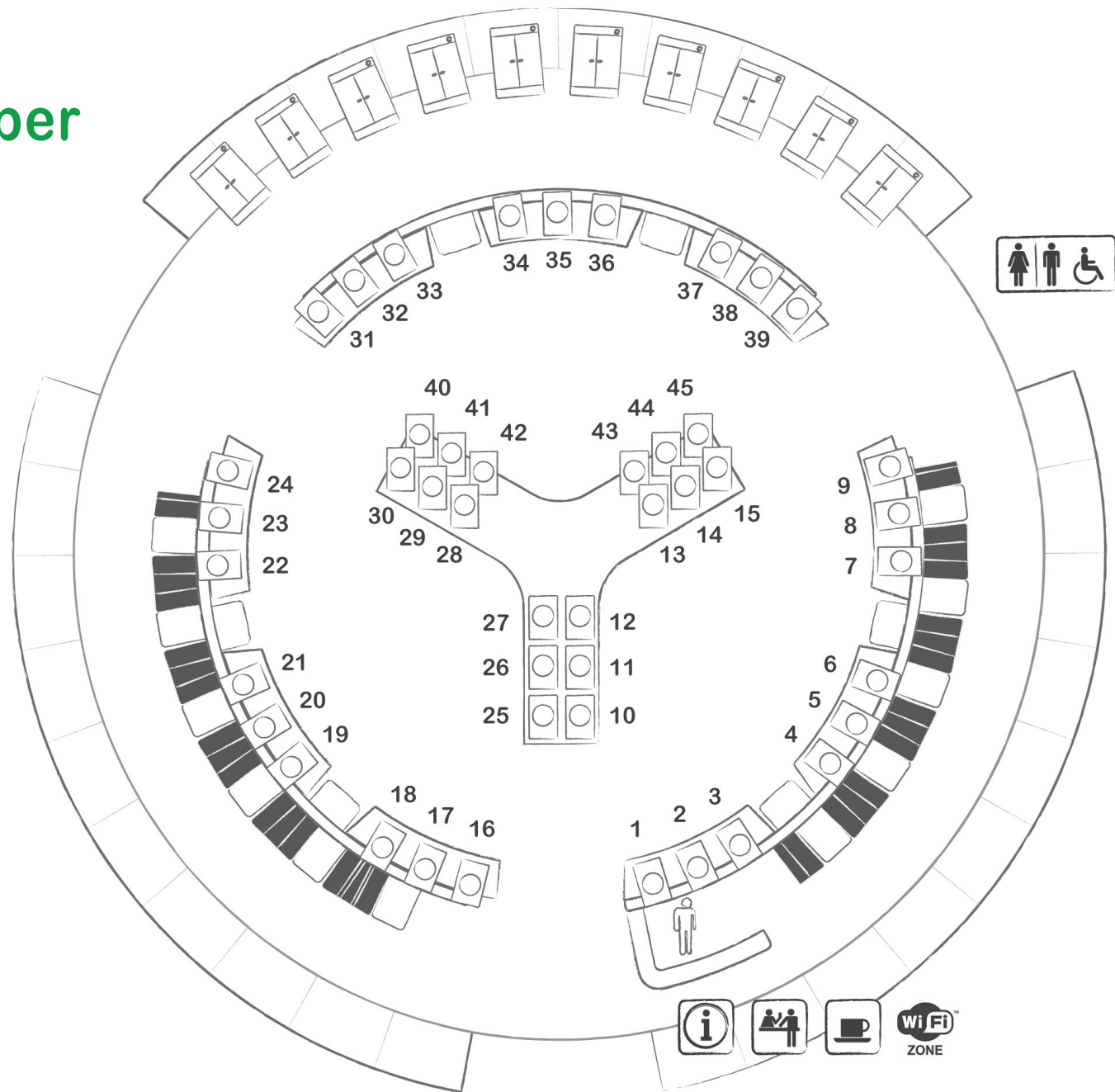
Planning for Booking System

Machines by number

every machine
can be identified
by booking system..



1 2 3 4 5 6 7



Planning for Booking System Standard Group

and are grouped to create a..

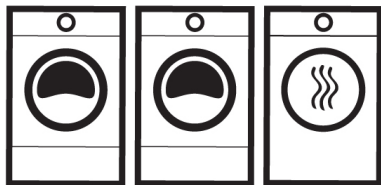


1,2,3 4,5,6 7,8,9

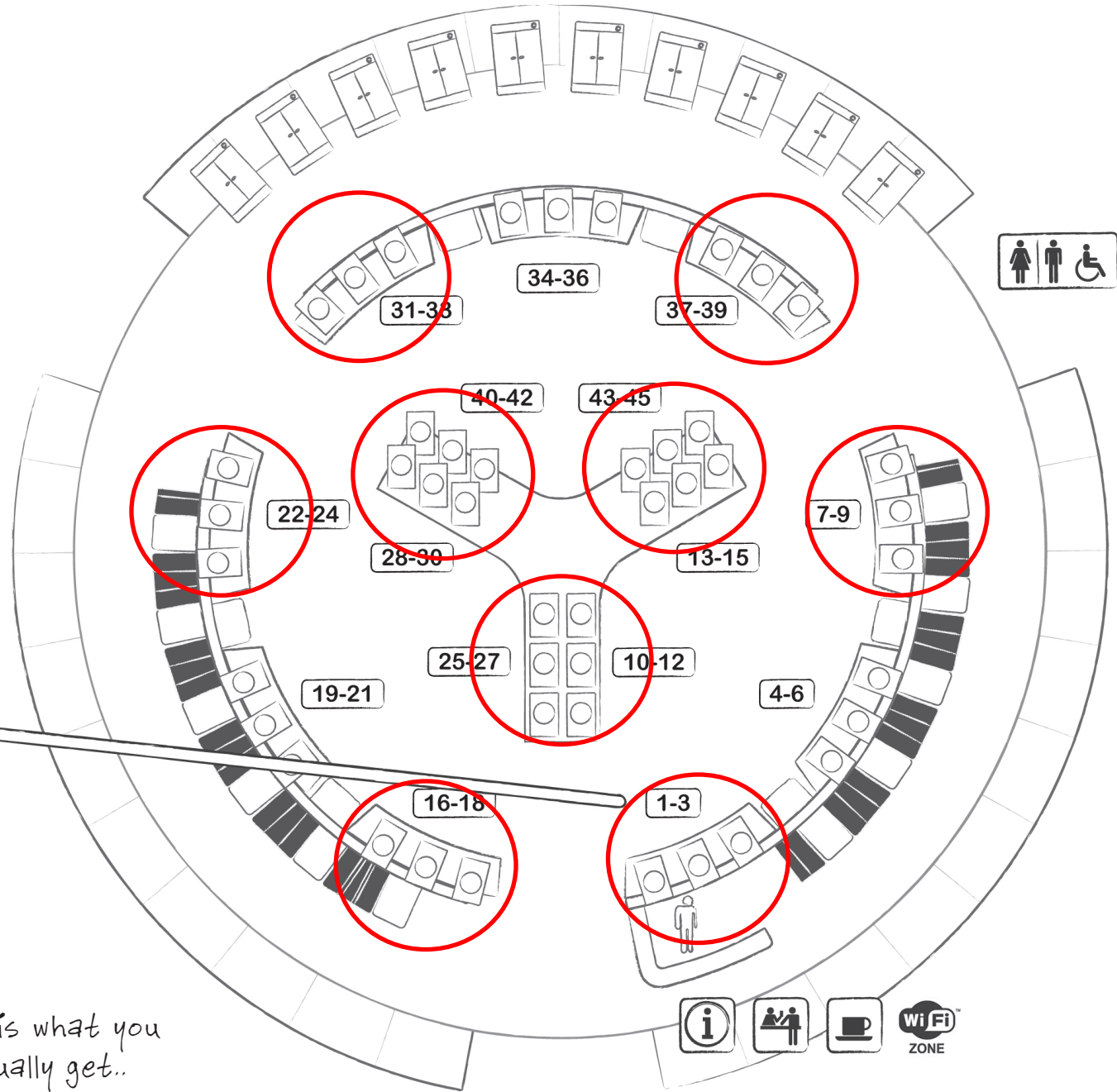
Booking Group

1-3

- 2 Washing machines
- 1 High capacity dryer

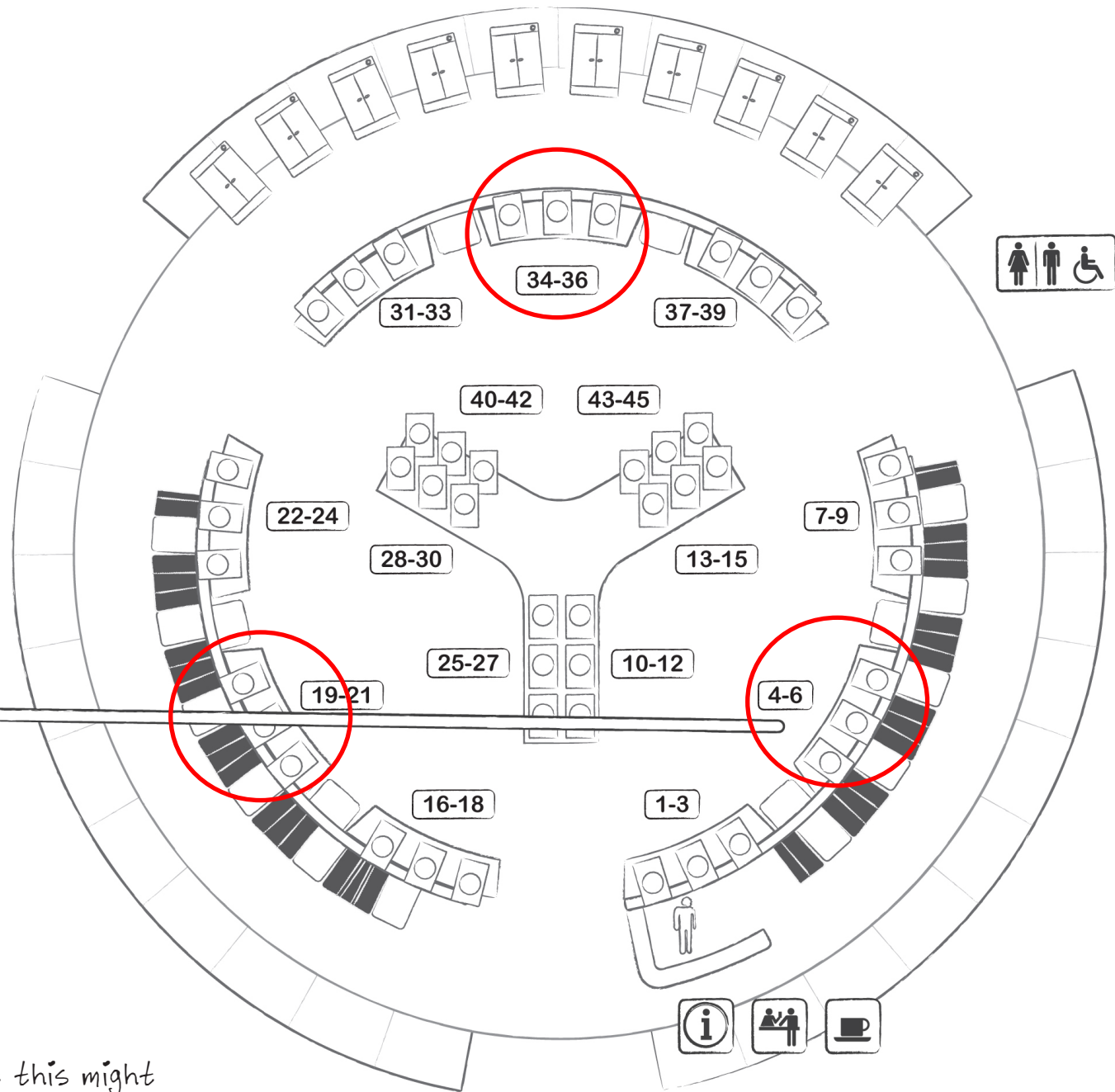


this is what you usually get..



Planning for Booking System

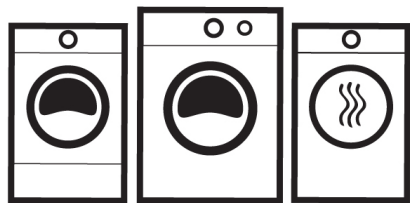
Special Group



Booking Group

4-6

- 1 Washing machine
- 1 Heavy Duty machine
- 1 High capacity dryer



rug cleaner

but this might be useful at times.

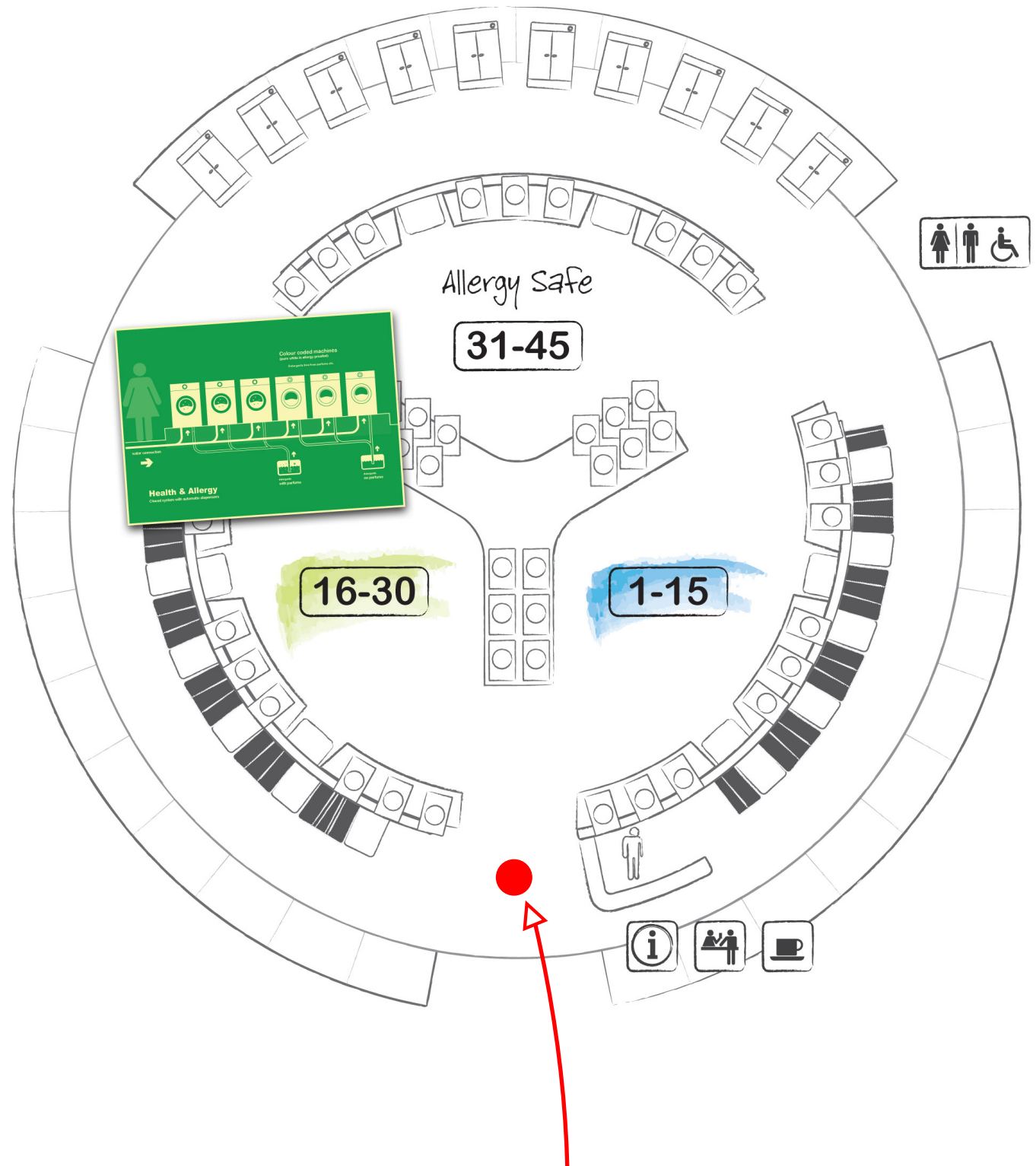
Planning for Booking System Colorcoding

the environment is symmetrical..

color coding will help avoiding mass confusion..

white area is allergy safe.

green & blue use detergents with perfume.





4 creating the Booking System

➤ BACKGROUND
RESEARCH

➤ FORMULATING
MY BRIEF

➤ PLANNING & LAYOUT
LAUNDRY ROOM

➤ INFORMATION
BOOKING

➤ CREATING THE
MACHINES

➤ SPACE & MACHINE
FINAL RESULTS

My wishlist

4.1 Criterias for the interface



inspiration.

typical calendar.

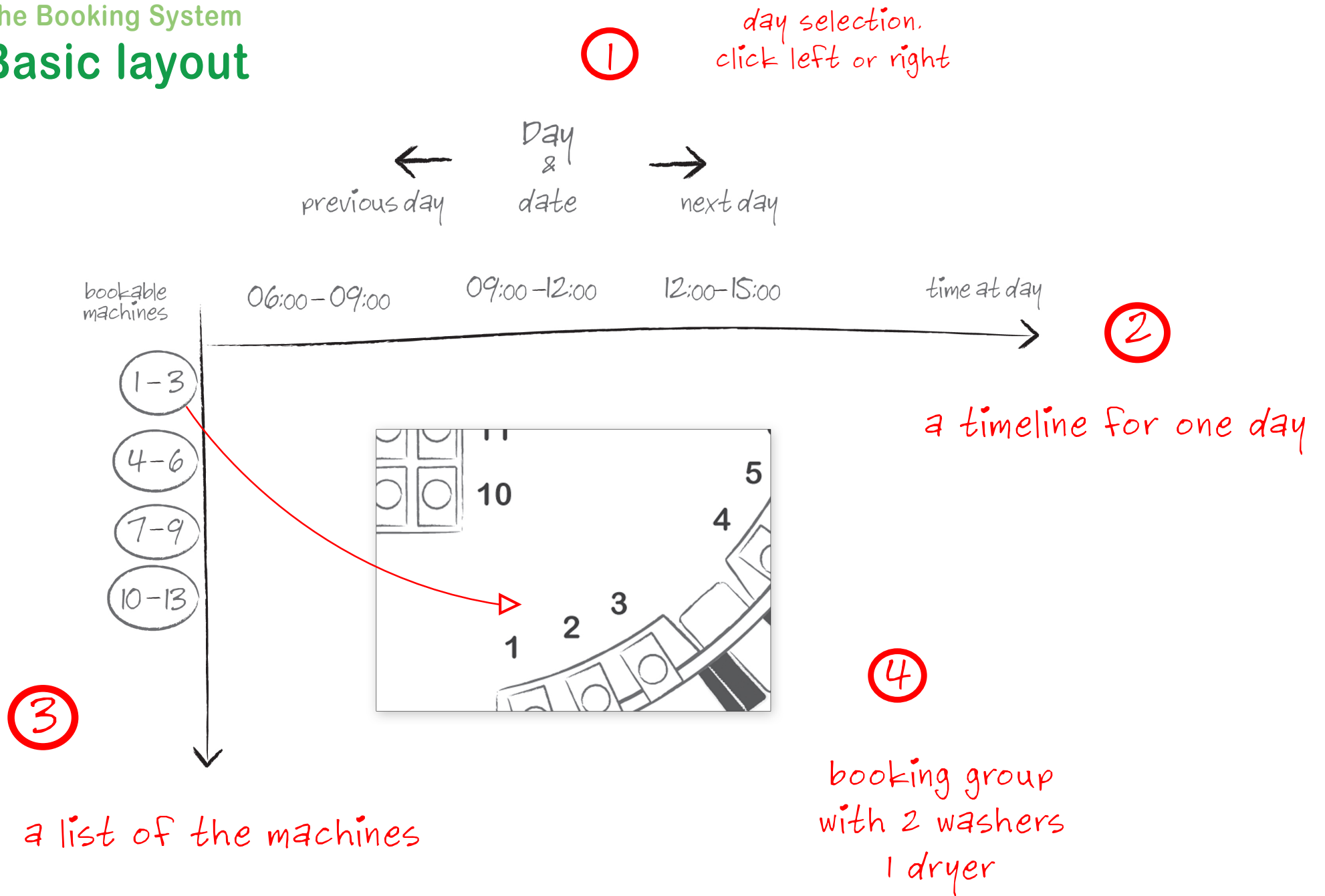
you need to be able to..

- ① CHOOSE Day / time
- ② OPEN Booking system
- ③ SELECT Machines
- ④ CONFIRM Booking

it will be..

- ① a touch interface for the laundry room
- ② the same layout for a point & click internet booking

The Booking System Basic layout

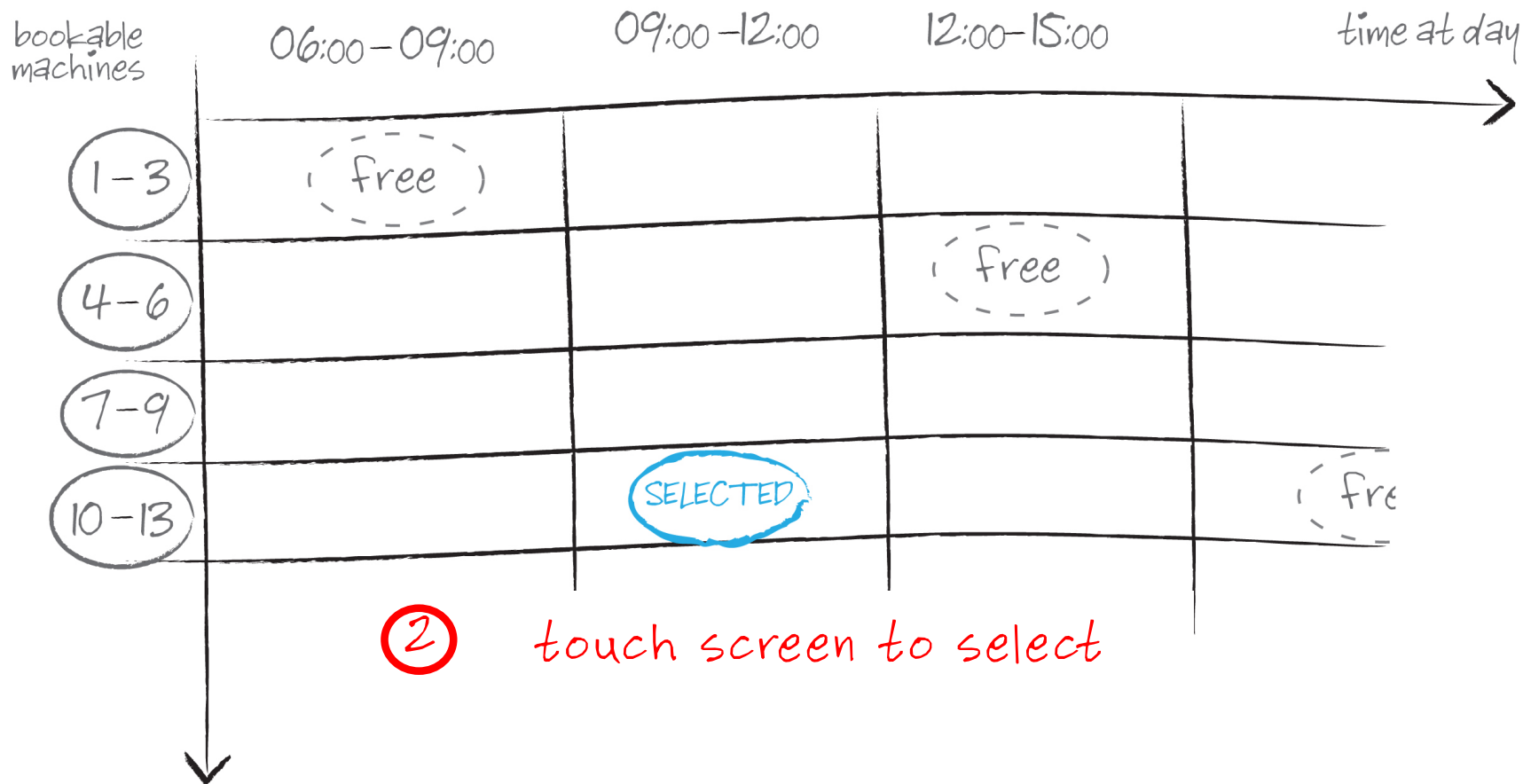


①

use magnetic key to
unlock / activate
(put anywhere on screen)

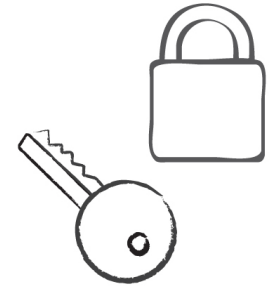


← previous day Day & date → next day



and use magnetic key to confirm.

3



bookable machines

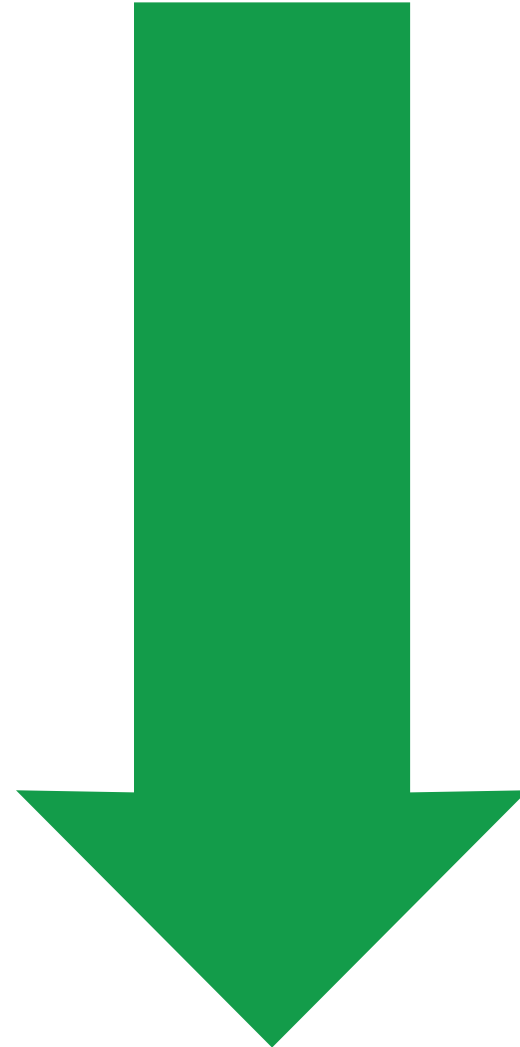
	06:00-09:00	09:00-12:00	12:00-15:00	time at day
1-3	free			
4-6			free	
7-9				
10-13		BOOKED		fre

4.3 final design of the.. **Booking system**

The booking system consists of two parts

- ① The Overview
- ② The Touchscreen

The layout of the interface was made so that it could be used both as a touchscreen in the laundry room or as an online booking service.



ELECTRONIC KEY-TAG

is used for

1. accessing laundry room (if locked).
2. for accessing the booking system.
3. to start & unlock booked machines.

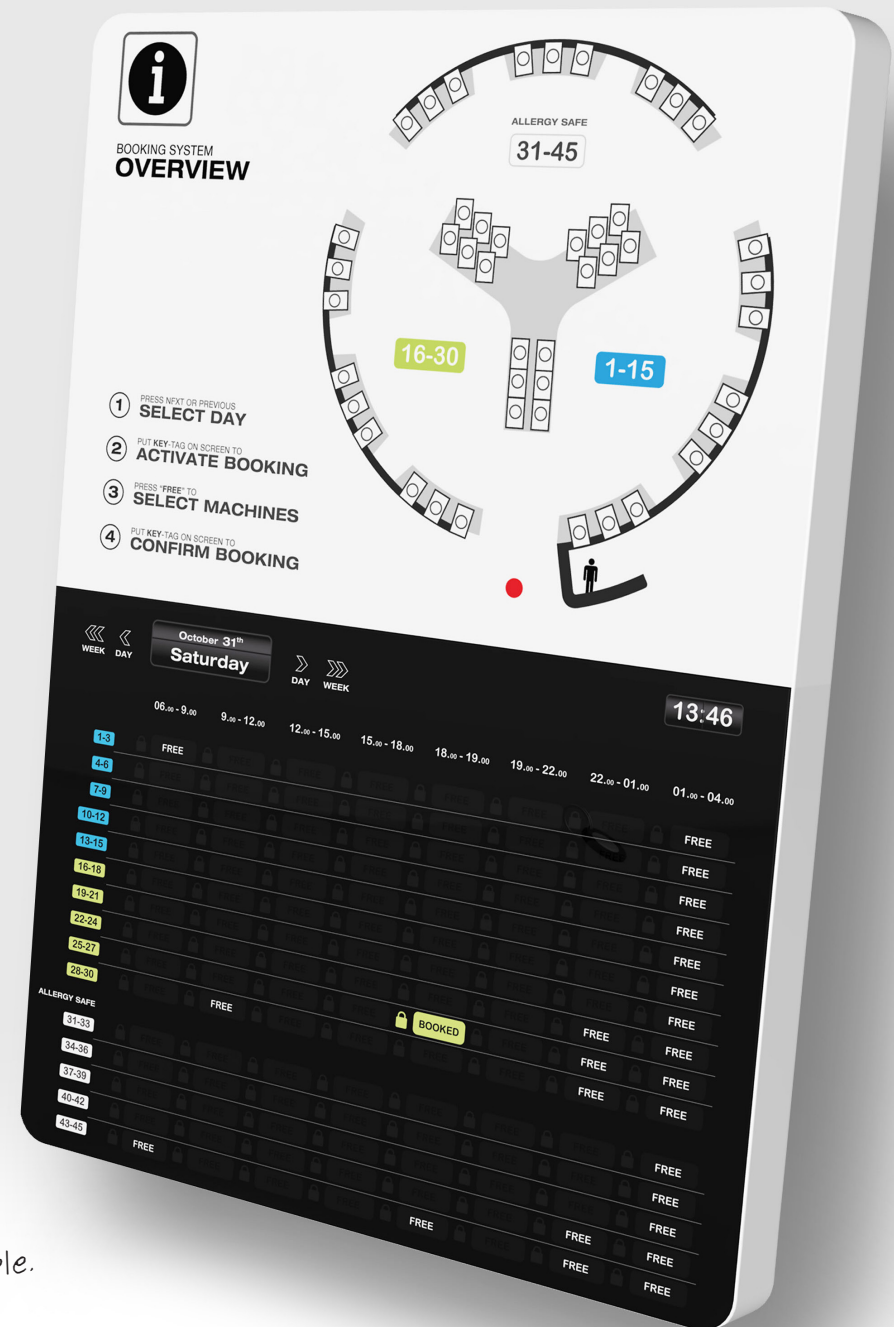


ELECTRONIC BOOKING SYSTEM

the booking system is a touchscreen which can be locked & unlocked by touching it with the electronic key-tag.

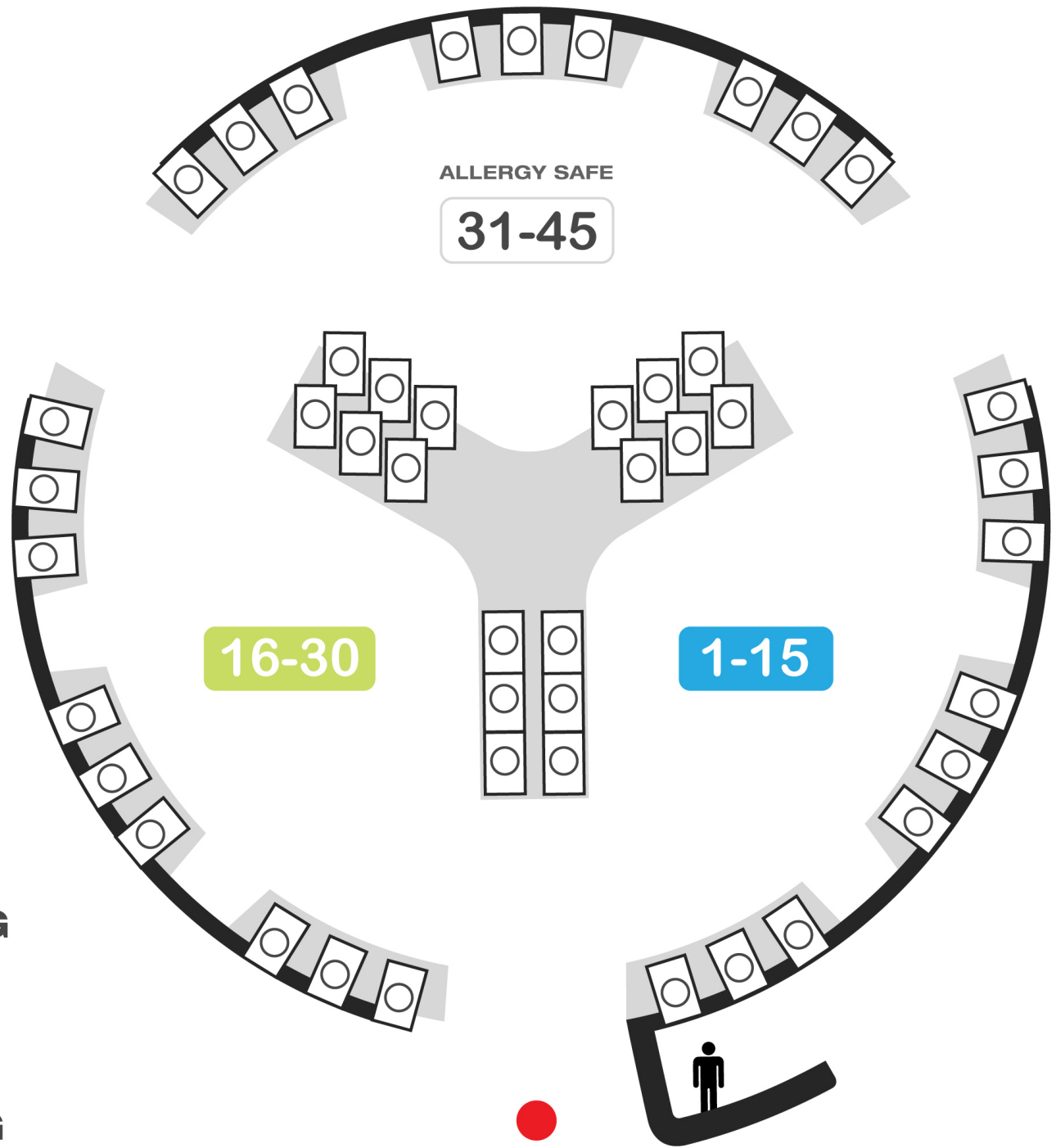
start screen is always the current day & time, and viewing available bookings is possible without logging in.

if you already have a booking, using the key will take you to the right day, only one booking at the time is possible.





BOOKING SYSTEM
OVERVIEW



- 1** PRESS NEXT OR PREVIOUS
SELECT DAY
- 2** PUT KEY-TAG ON SCREEN TO
ACTIVATE BOOKING
- 3** PRESS "FREE" TO
SELECT MACHINES
- 4** PUT KEY-TAG ON SCREEN TO
CONFIRM BOOKING

October 29th
Thursday

> DAY >>> WEEK

13:45

06.00 - 9.00

9.00 - 12.00

12.00 - 15.00

15.00 - 18.00

18.00 - 19.00

19.00 - 22.00

22.00 - 01.00

01.00 - 04.00

1-3



FREE

4-6



FREE

7-9



FREE

10-12



FREE

13-15

making a booking



FREE

16-18

4.4

Scenario



FREE

19-21



FREE

22-24

FREE



FREE



FREE

25-27



FREE

28-30



FREE



FREE

ALLERGY SAFE

31-33



FREE

34-36



FREE

37-39



FREE



FREE

40-42



FREE



FREE

43-45



FREE

October 29th
Thursday

DAY WEEK

13:45

06.00 - 9.00 9.00 - 12.00 12.00 - 15.00 15.00 - 18.00 18.00 - 19.00 19.00 - 22.00 22.00 - 01.00 01.00 - 04.00

1-3



FREE

4-6



FREE

7-9



FREE

10-12



FREE

13-15



FREE

16-18



FREE

19-21



FREE

22-24

FREE



FREE



FREE

25-27



FREE

28-30



FREE



FREE

ALLERGY SAFE

31-33



FREE

34-36



FREE

37-39



FREE



FREE

40-42



FREE



FREE

43-45



FREE

Booking time, right now.
1 hour 45 minutes since it
started.

machines available
for booking

The booking system will release
locked machines if not started
within 30 minutes of booked time.

This will make the system more
flexible, and allow for "drop-in" users.

WEEK DAY

October 31th
Saturday

DAY WEEK

13:46

06.00 - 9.00 9.00 - 12.00 12.00 - 15.00 15.00 - 18.00 18.00 - 19.00 19.00 - 22.00 22.00 - 01.00 01.00 - 04.00

1-3	FREE									FREE
4-6										FREE
7-9										FREE
10-12										FREE
13-15										FREE
16-18										FREE
19-21										FREE
22-24								FREE		FREE
25-27						FREE		FREE		FREE
28-30		FREE						FREE		FREE

changed day to saturday.

this is the time I want to book.

ALLERGY SAFE

31-33										FREE
34-36										FREE
37-39										FREE
40-42								FREE		FREE
43-45	FREE					FREE		FREE		FREE

allergy safe "white area"

06.00 - 9.00 9.00 - 12.00 12.00 - 15.00 15.00 - 18.00 18.00 - 19.00 19.00 - 22.00 22.00 - 01.00 01.00 - 04.00

1-3



FREE



FREE

4-6



FREE

7-9



FREE

10-12



FREE

13-15



FREE

16-18



FREE

19-21



FREE

22-24



FREE



FREE

25-27



FREE



FREE



FREE

28-30



FREE



FREE



FREE

ALLERGY SAFE

31-33



FREE

34-36



FREE

37-39



FREE

40-42



FREE



FREE

43-45



FREE



FREE

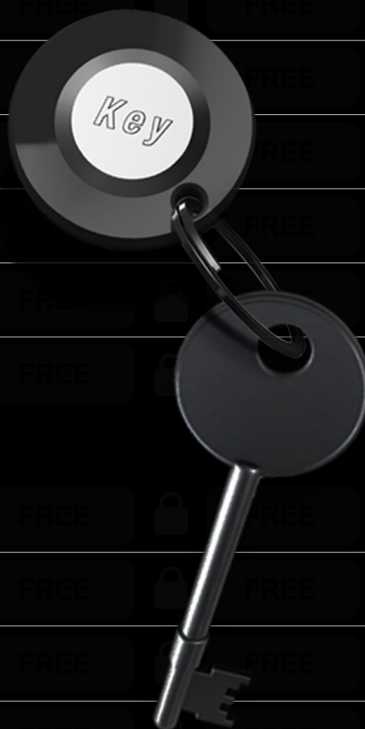


FREE



FREE

unlock with key



06.00 - 9.00 9.00 - 12.00 12.00 - 15.00 15.00 - 18.00 18.00 - 19.00 19.00 - 22.00 22.00 - 01.00 01.00 - 04.00

1-3	FREE								FREE
4-6									FREE
7-9									FREE
10-12									FREE
13-15									FREE
16-18									FREE
19-21									FREE
22-24								FREE	FREE
25-27								FREE	FREE
28-30	FREE							FREE	FREE
ALLERGY SAFE									
31-33									FREE
34-36									FREE
37-39									FREE
40-42								FREE	FREE
43-45	FREE							FREE	FREE

touch to select

SELECTED

06.00 - 9.00 9.00 - 12.00 12.00 - 15.00 15.00 - 18.00 18.00 - 19.00 19.00 - 22.00 22.00 - 01.00 01.00 - 04.00

1-3	FREE																	FREE	
4-6																		FREE	
7-9																		FREE	
10-12																		FREE	
13-15																		FREE	
16-18																		FREE	
19-21																		FREE	
22-24																	FREE	FREE	
25-27																	BOOKED	FREE	FREE
28-30																FREE		FREE	FREE
ALLERGY SAFE																			
31-33																			FREE
34-36																			FREE
37-39																			FREE
40-42																		FREE	FREE
43-45	FREE															FREE		FREE	FREE



confirm with key
booking done!

BOOKED

5 re-designing The Machines

➤ BACKGROUND
RESEARCH

➤ FORMULATING
MY BRIEF

➤ PLANNING & LAYOUT
LAUNDRY ROOM

➤ INFORMATION
BOOKING

➤ **CREATING THE
MACHINES**

➤ SPACE & MACHINE
FINAL RESULTS

5.1 Selection of A professional range

Selecting a professional range

When selecting the range for the laundry room, I wanted to make sure that almost any laundry-related task could be taken care of. Prohibiting rug-cleaning or other heavy-duty tasks would be a thing of the past.

I wanted to prolong the life expectancy on the machines, so a supporting hi-performance centrifuge would be added to take care of big rugs etc.

Manglers are not that common in modern laundry rooms. When asking my friends about manglers very few know how to use them. They might even be perceived as "risky".

I remember when I was a little kid, watching my grandmother using the mangler for towels and sheets. Today I usually only experience mangled sheets when staying at a nice hotel, it's lovely. I'd like to re-introduce the mangler as a standard in laundry rooms.

Reasons to stick with the box?

All the designs are simple boxes without a hint of personality. They are not very inviting or interesting to look at. This I want to improve.

The ideation and sketching evolved in parallel with my research and as new criterias were set.

My selected concept had to take both ergonomic and environmental aspects into consideration. I also wanted the machines to be inviting, friendly and intuitive.

On the following pages I show the research that finally made it easier for me to choose a direction. To pick out a suitable candidate to develop further.

Regular Washer



Heavy washer
& rug cleaner



Tumble dryer



Drying cabinet



Centrifuge



Mangler
(hotel sheets..)

The box.

A flat surface where you place your laundry and your detergents?

A box that is easy to arrange in a square environment?

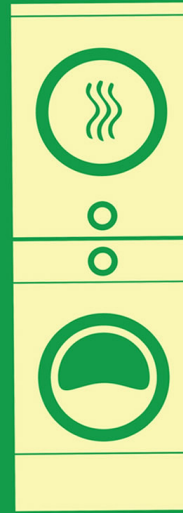
Well..

My environment is circular and my machines will be freestanding.

Detergents will be automatically dispensed. Less of a mess & allergy proofed.



it's easily stacked..



However..

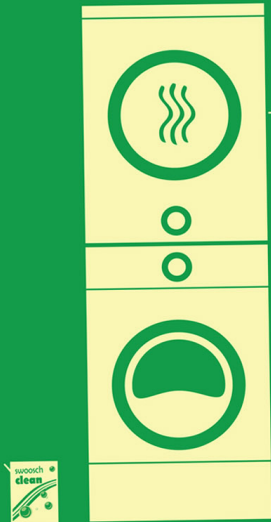
I want my environment to be open and transparent.

No machines should be blocking the view across the room.

Stackability is not needed nor wanted.

Ergonomics..

Inconvenient to some.

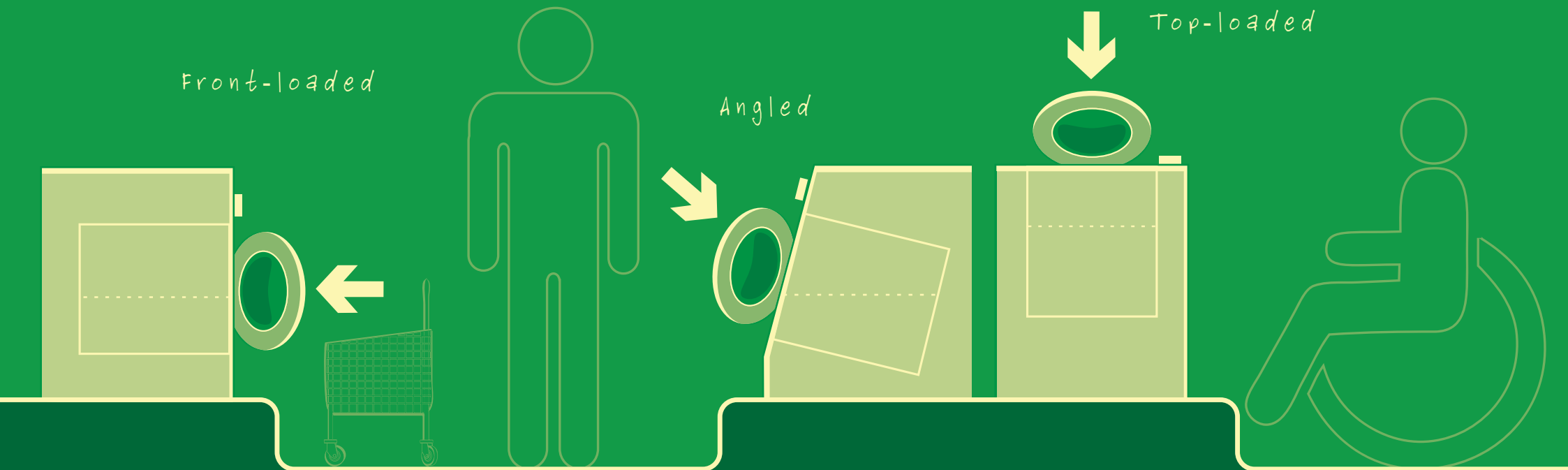


Conclusion

The box can be altered. Stackability is not wanted or necessary for my environment.

I will try to make it more inviting, intuitive and have more personality.





5.3 Which way to go? Front-, Top-loaded ?

There generally are 2 variants to choose from, front-loaders & top-loaders. Some people say that top-loaders are easier to use if you have back problems or bad knees. They are usually cheaper than front-loaders, and historically they had larger capacity. This isn't the case any more.

Front loaders on the other hand use much less electricity and water (up to 60% less). They also use less detergents and are more gentle to the clothes. This is because the drum rotates at different angles, while the water always stays at the bottom.

The angled washers are an attempt to find a compromise between ergonomics and water usage. I do find them more inviting, facing the user, and this I will work on.

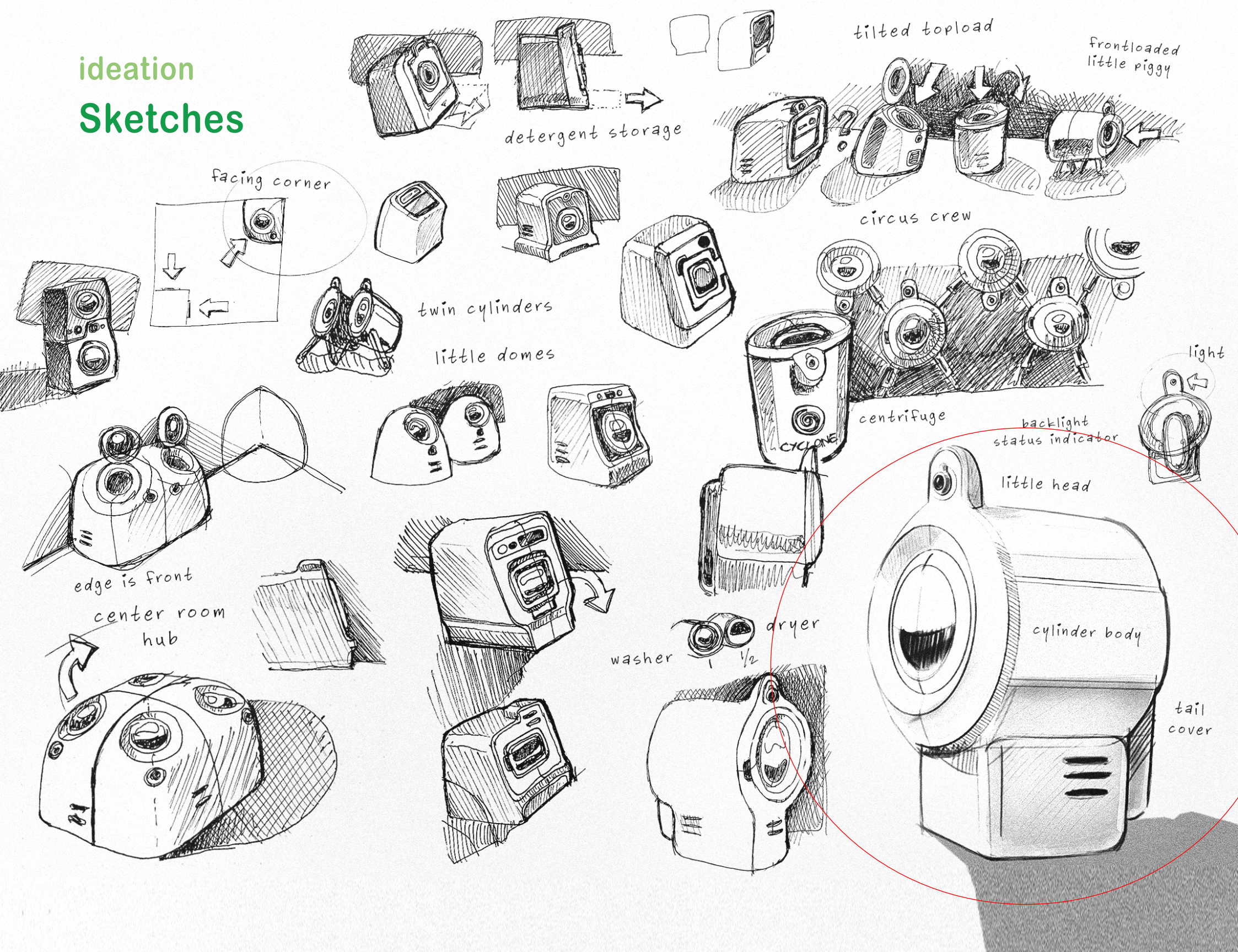
Conclusion

I will keep working on the front-loaded concept, mainly because they are more energy-efficient, but also because ergonomics & accessibility can be improved just by using a ledge. I also find it more suitable to have a front-loaded machine for users in wheelchairs, where a top-loaded might be problematic.

Source:

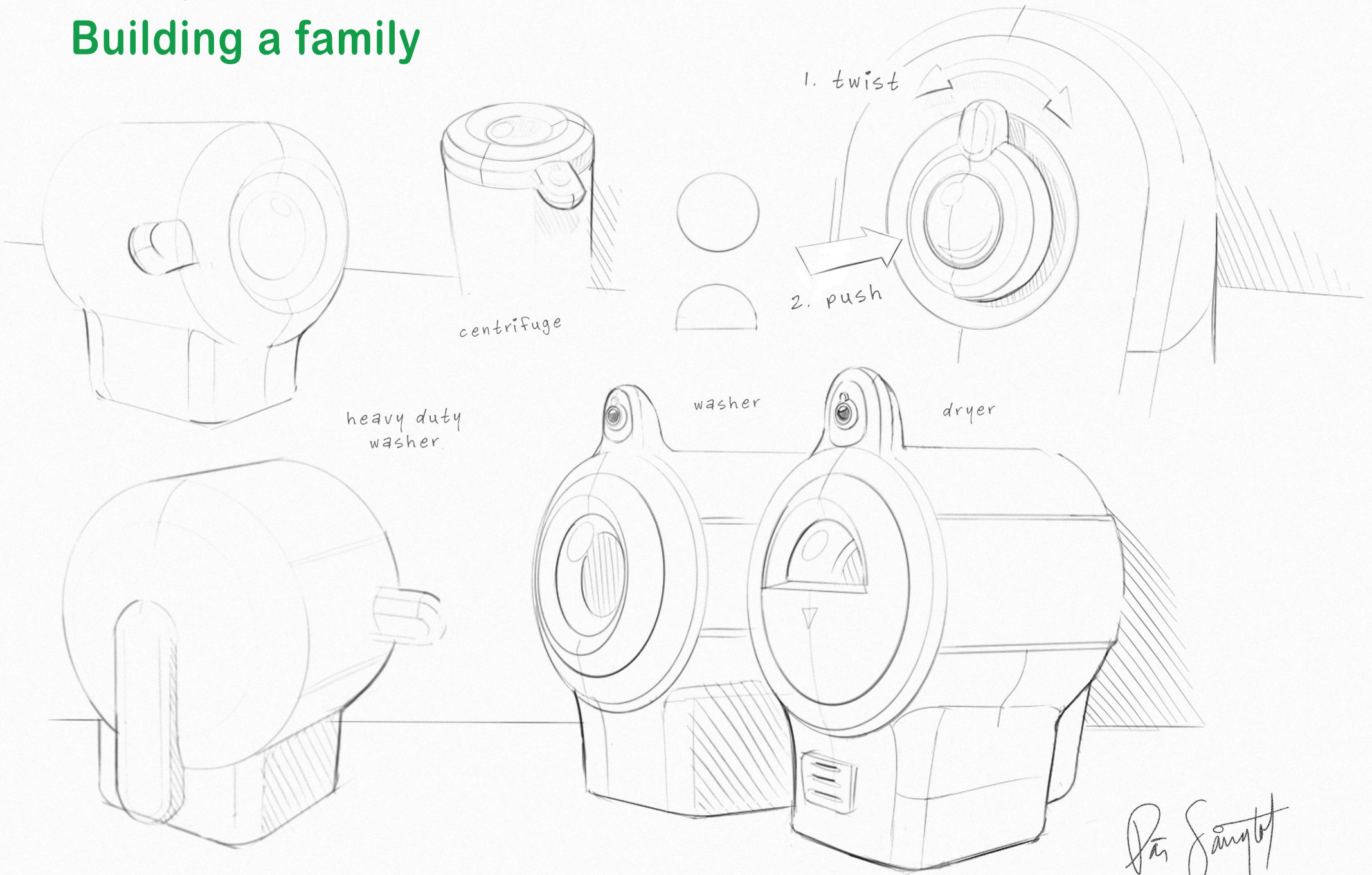
<http://www.whitegoodshelp.co.uk/wordpress/which-is-best-a-top-loader-or-a-front-loader-washing-machine/>

ideation Sketches



development

Building a family



Pat Samyot

5.5

Taking it apart Form follows function?

“It’s the inside that matters”

A washer is really just a rotating drum, an engine & a drive belt that makes it spin and a solid base to keep it in place.

When I came across the images on the right I felt that deconstructing the machine & cutting away the excess volume, would pronounce the mechanical properties and make it into a more intuitive object.

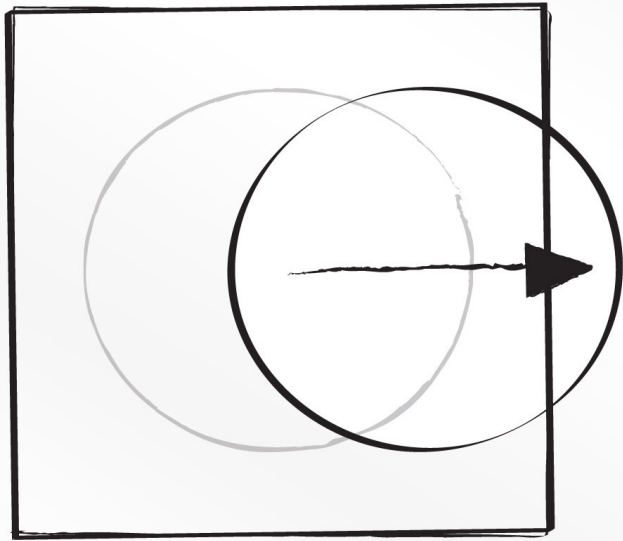
By doing this, I was hoping to give it more of a character, a personality. This is the starting point in my story of “the machine that escaped the box.”

A way of explaining some of the ideas that came into my mind while designing the final candidate.



other
don't
-point
on 3)
e and

the mechanics of a washing machine..



Escaping
the box.

The story

is about..

mechanics & performance

soft Robustness

being..

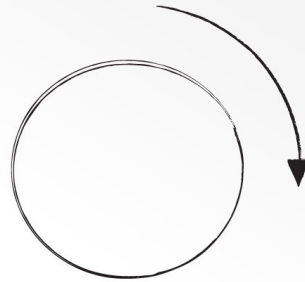
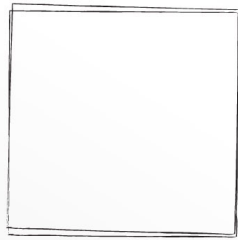
intuitive & reduced

sketching

static

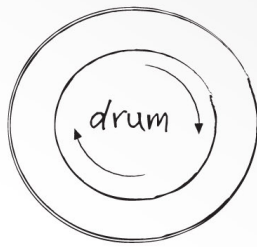
moving

1



2

body

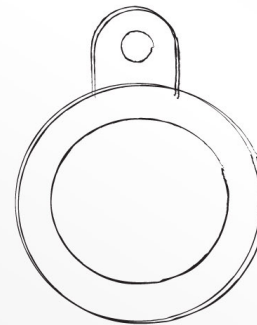


outsideshowinginside

interface highlighted (&soft)



+ some character



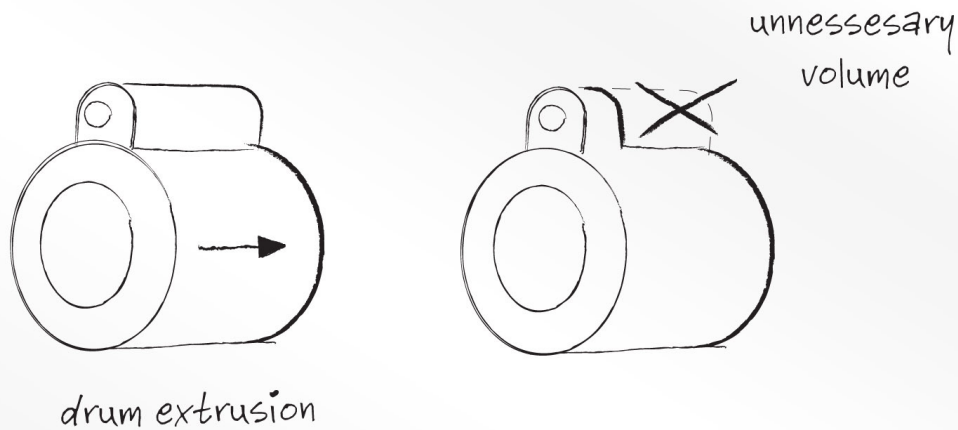
anthropomorphism..

putting a little "head" on top for the interface adds some human characteristics..

It suddenly has a bit of character,



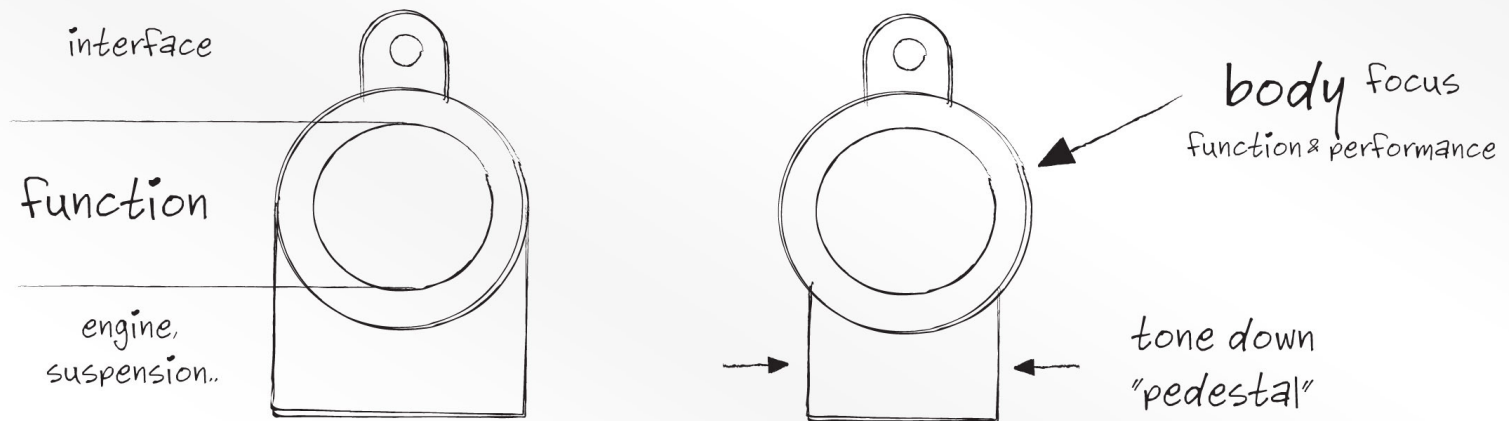
3



reducing volume,
keeping as close to
the drum as possible.

just enough room for
internal suspension &
critical components.

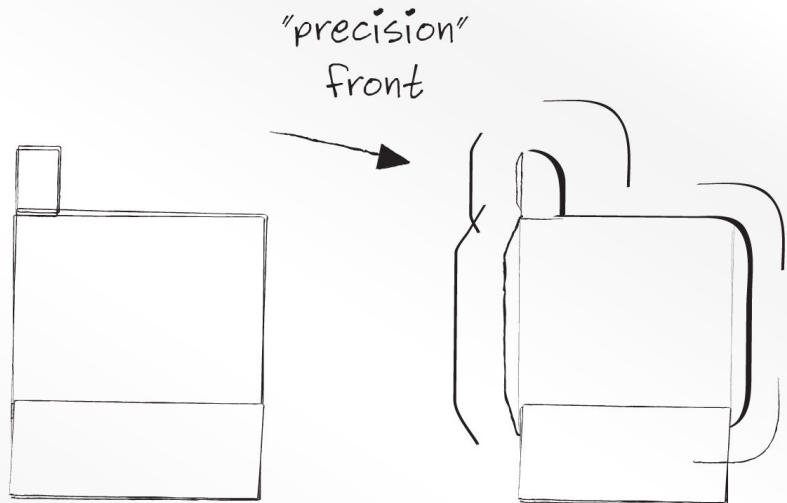
4



highlighting and focusing
on the body by putting it on
a "pedestal"

S

differentiate back & front



"precision" front

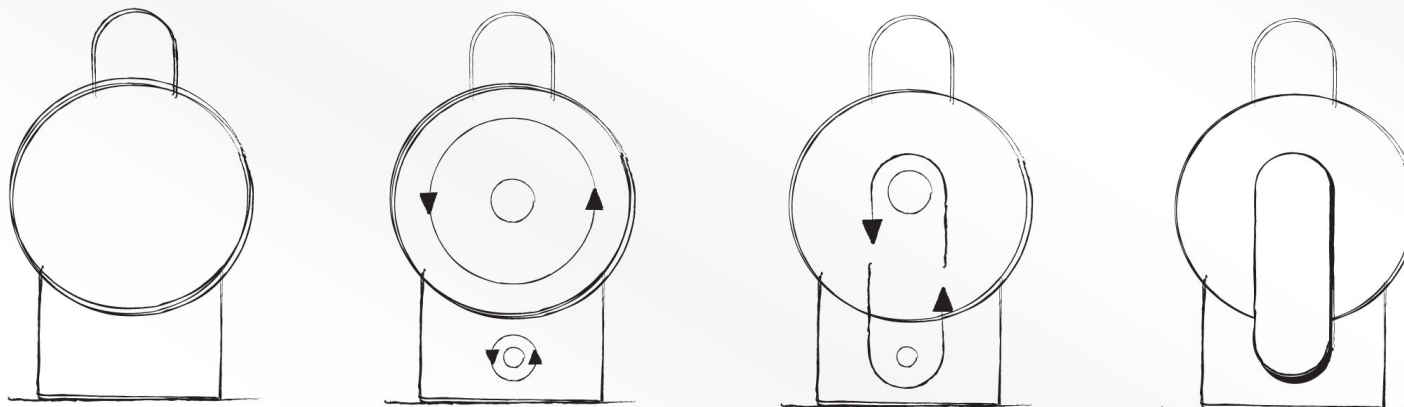
"soft" back

I still want to keep it reduced & minimalistic.

Just small variations to give it a direction.

6

inside story?



drum & engine

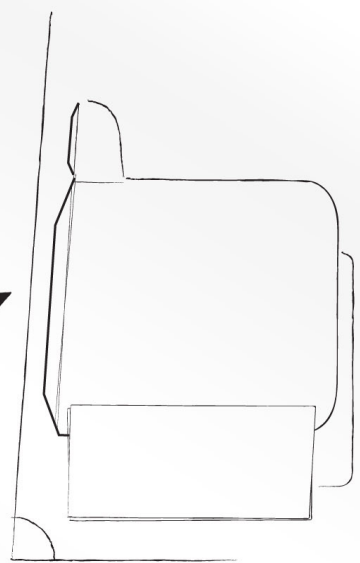
mechanics

the story undercover

adding a small cover on the back to show the connection between engine & drum.

7

slight tilt
more inviting

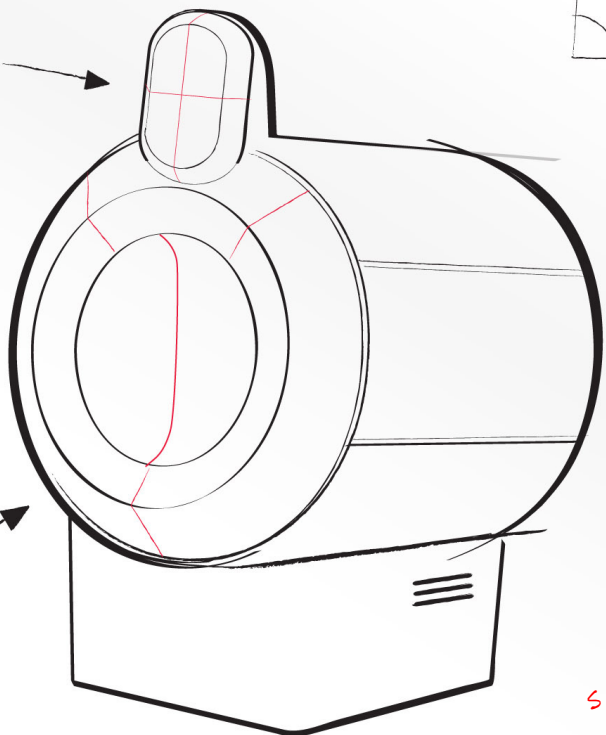


chiseled, precision cut front.
masculine and hard shapes
combined with a soft body.

used a tilted angle on the
door & interface to face the
user and make it more inviting.
drum is still horizontal.

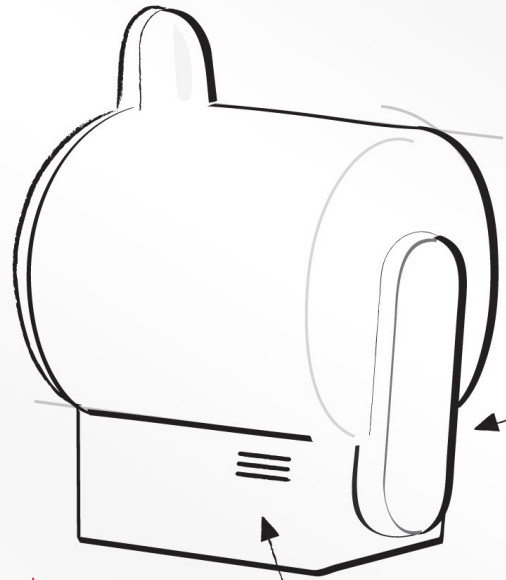
flat "face"

interface
placement
simplified



8

chamfered
front
"precision"



the story
under cover

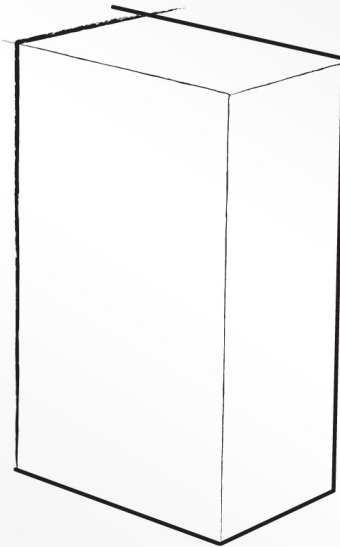
visible airholes
show the placement
of the engine.

airholes =
engine inside

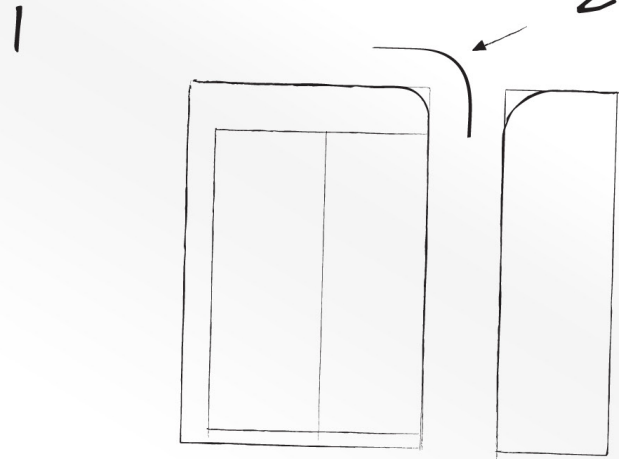
sketching

Dealing with the boxes

Volume is important.. can't reduce too much.

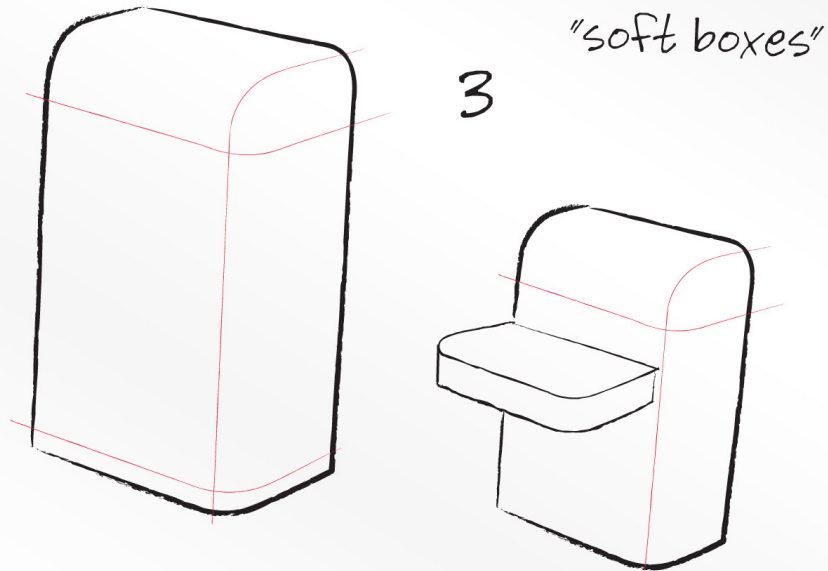


same radius as before



for the rest of the family I used a specific radius when dealing with the boxes. (drying cabinets (manglers))

I will use the same kind of interface & logotypes to connect them visually.



5.7 ideation & planning of The Interface

How it started

When doing a bit of research on interfaces for washers I quickly realized how complicated they seem. Doing laundry isn't, and shouldn't be perceived as rocket science.

Is it just bad design, or a forced decision from marketing to make products seem more complicated and thereby more valuable?

No matter the reason, I believe it should be done differently. It should be a no-brainer, intuitive and quick. One single input should be enough, a single gesture to select & start.

By looking at bad examples - and good ones - I made a list of features I want to implement in my proposal.

Some thoughts on the interfaces A bit of research



Just chaos

Feature bloat

- Who needs all this?
When did laundry turn into rocket science?

- Extra buttons for everything..

- + Index on interface.
Directional interface.

- No transparency,
No direction.
No index on wheel.

- + Clean layout
Twist & push interface.
(one gesture)

Some thoughts on the interfaces

Laundry is not rocket science?

The Good, The Bad & The Ugly

The first example on the left is just overly complicated. In this kind of product, having >20 buttons is just ridiculous. I can't find anything positive about the layout or the functionality.

The second example is attempting to show the cycle on top, where you are in the cycle, and how much time is left. Without a display it's guesswork to figure out how long each part of the full cycle will be.

They have on/off switches for the centrifuge, special buttons for "gentle wash" and a Index-wheel which indicates both haptically and visually what is selected.

I think there are too many buttons, but I think a directional interface is good for universal design.

The third example is very simplified, and you get to choose prewash as an option with 2 buttons.

There's not much you can do wrong here, but on the negative side is the lack of direction on the input, and also no transparency. There's no way of knowing what's going to happen before you actually start to turn the wheel.

Wanted

By looking at these examples, I know what I'm looking for in my own proposal.

- 1. I want the interface to be Directional for universal design purposes.** *Both in haptics and visually.*
- 2. I want the interface to have a clear index to make the functionality transparent & intuitive.** *This without adding too much information.*
- 3. I want to use a display so that a timer can be implemented, always showing how much time is left.** *This is important in a shared space, since you need to know exactly when the machine will be available for the next person.*

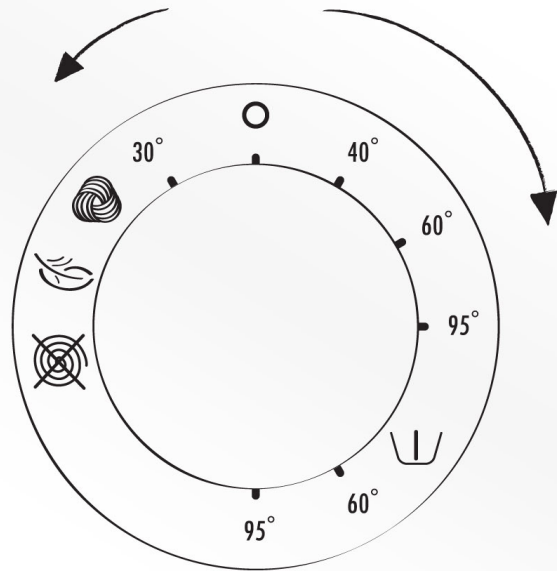
1

2

Selected concept

Gentle
no centrifuge etc.

Regular



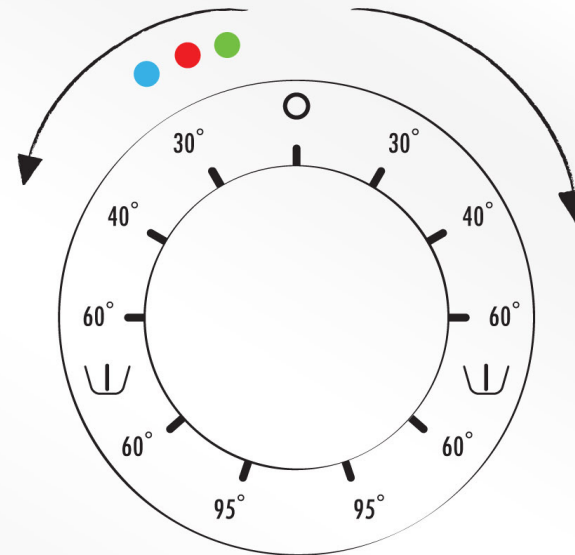
white wash or colour?

need to select
for correct dispenser

Coloured
wash

White
wash

twist & push
to start



assumption

30° =

Gentle
no centrifuge etc.



Two main directions

The first idea **(1)** I worked on was simply dividing "gentle wash" and "regular wash" into a left / right direction. By doing this, all the graphics could be kept on the index, and not clutter the surface of the machine.

Going for this option would make it necessary to add extra buttons for choosing "white" or "colour" detergents since this will be automatically dispensed.

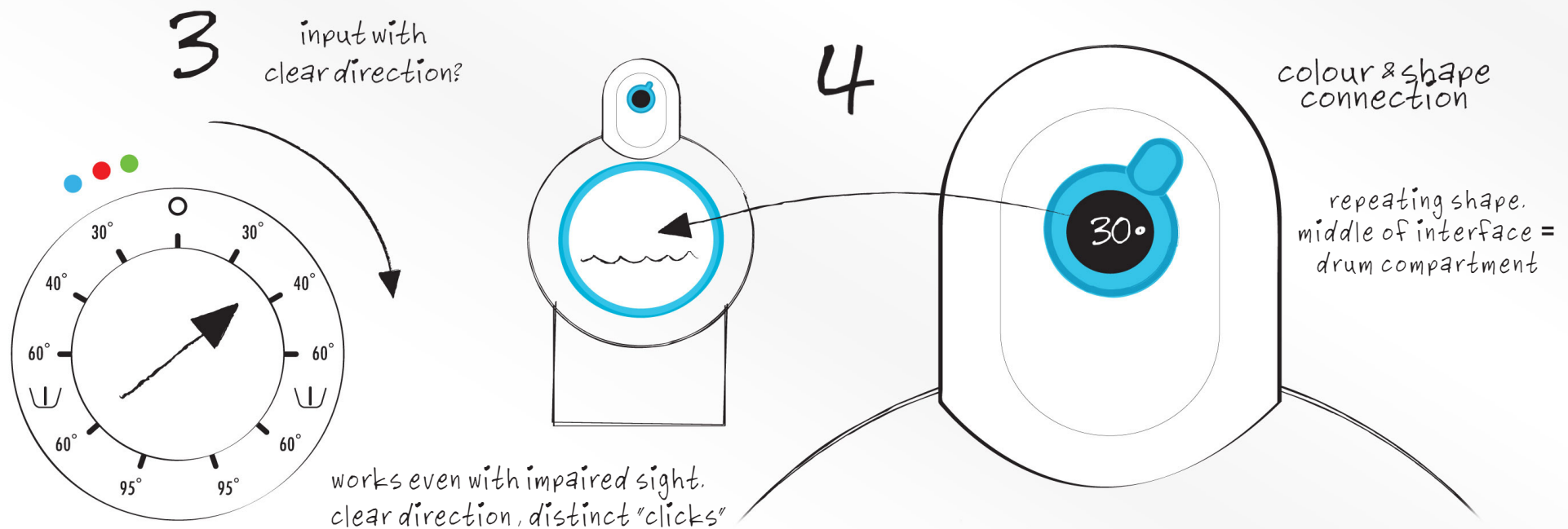
I did not want to add more buttons to the interface, just one gesture, one twist & push should be enough.

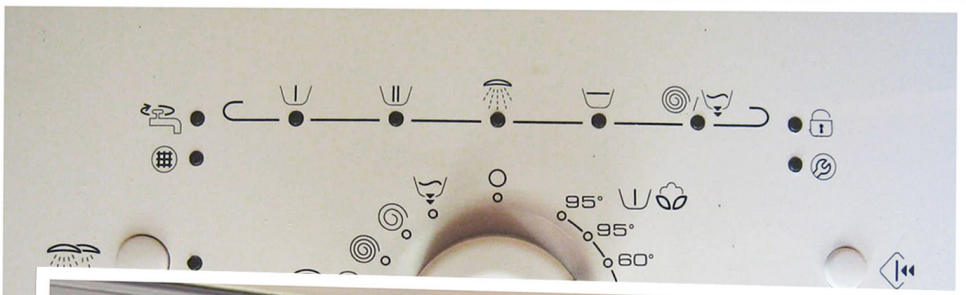
That's when I tried to split the index into a "colour" (left) & a "white" (right) part **(2)**.

The functionality is mirrored, and the first click on each side will be the gentle wash. **(3)**

I made an assumption by doing this. When selecting a program for gentle wash, wool for instance, the delicate fabrics shouldn't be centrifuged. All other programs, 40, 60, 60 with prewash and 95 with prewash use the centrifuge.

The interface will have a dial with a clear direction like a clock. The display will enlarge the chosen setting, and when the wheel is pushing the cycle will initiate. The screen will then change and show time left. **(4)**





My proposal

Twist & Push

Left = Colour Right = White

30 degrees is always gentle wash,
no centrifuge in this mode.

Logotypes & Colour

1. washing

water



more water



spinning water
(centrifuge)



2. drying & pressing

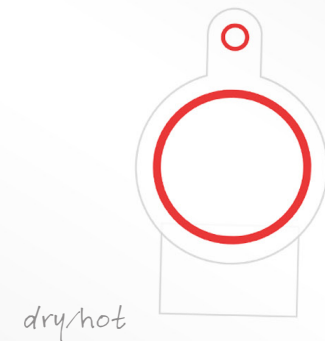


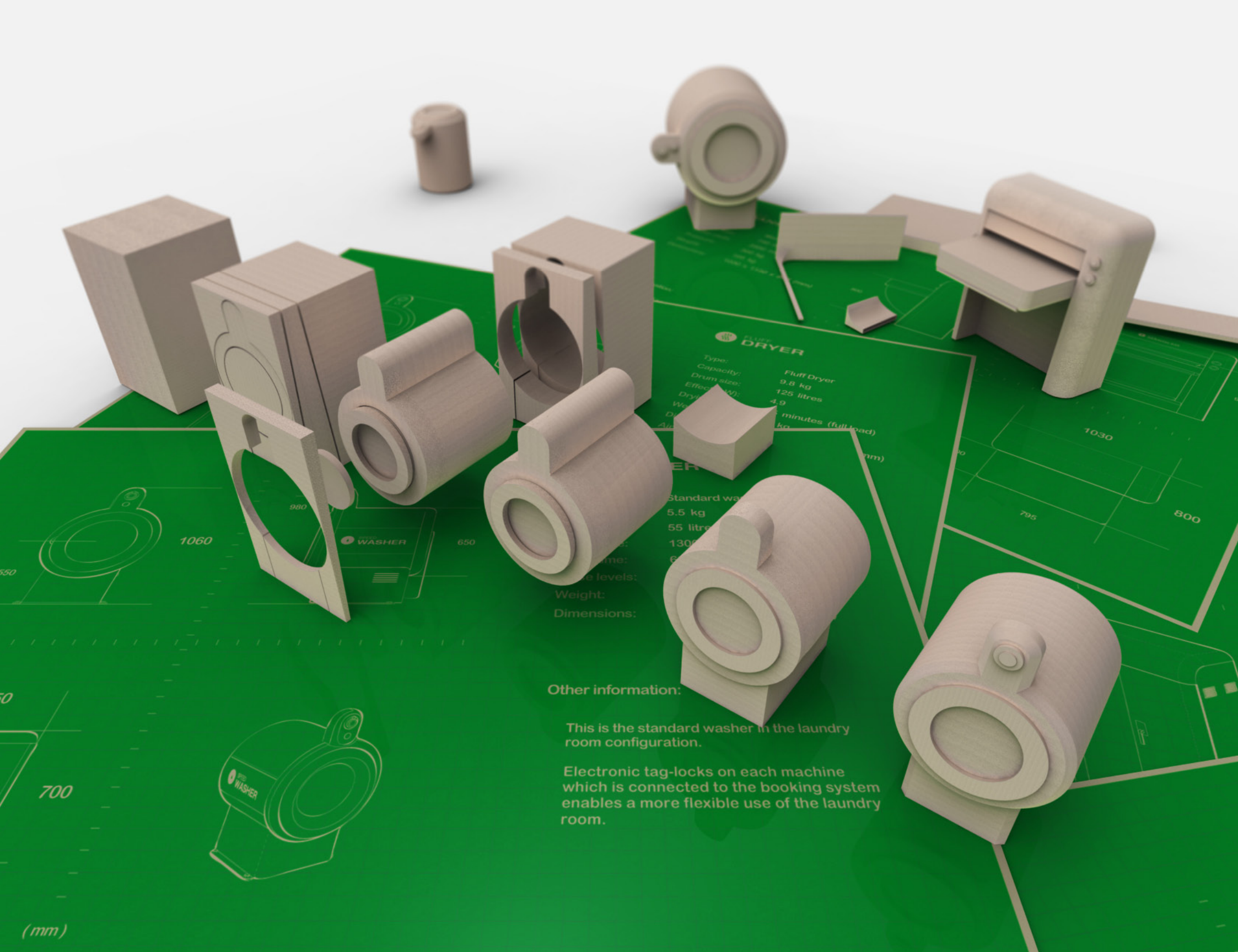
steamin'



wrinkle
no more

allergy safe





FLUFF DRYER

Type: Fluff Dryer
Capacity: 9.8 kg
Drum size: 125 litres
Effect (W): 4.9
Weight: 46 kg
Drying time: 130 minutes (full load)

Standard weight: 5.5 kg
Drum size: 55 litres
Weight: 130 kg

Washing time: 60 minutes
Washing levels: 6
Weight: 130 kg
Dimensions: 1060 x 980 x 650 (mm)

Other information:

This is the standard washer in the laundry room configuration.

Electronic tag-locks on each machine which is connected to the booking system enables a more flexible use of the laundry room.

(mm)

5.9 final designs Machines

speed washer

heavy washer

fluff dryer

cyclone centrifuge

cold mangler

hot closet

Choosing specifications

Much of my design is about making the machines more intuitive, to tell a story, to have a bit of personality. I've stripped them of their excess volume to express the mechanical properties while being inviting and strong.

Getting rid of the box made it easier to place them individually without creating awkward gaps (my personal opinion anyway). A box is usually expected to be placed parallel to a surface.

Since I decided to go for existing technologies, and not rely on future technologies, I did research on current variations and came to the conclusion that front-loaders currently are the most efficient & ergonomically viable solution (compared to top-loaders). A compromise between ergonomics & water usage.

On the following pages, I'm showing technical drawings, with considerations and ideas that are part of the design solution. The bounding box of the machines, the overall size & the performance are not made up, but an average of several Hi-Performance brands. (Electrolux, Miele etc.)

Reference: <http://www.nortec.se/tvattmaskiner/>

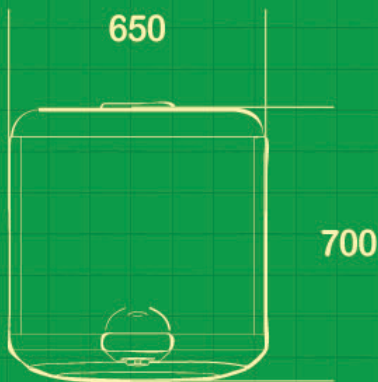
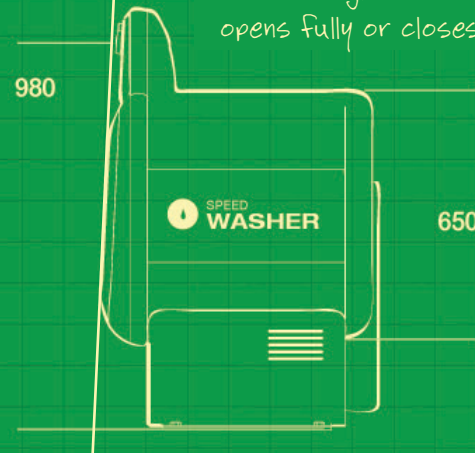
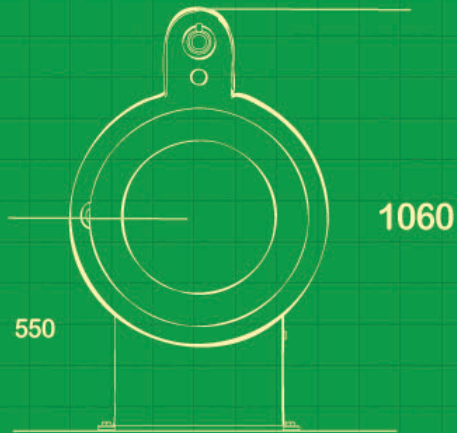
tilted front

*display / interface / door
faces user more inviting.*

*door is angled, so it either
opens fully or closes itself.*

SPEED WASHER

Type:	Standard washer
Capacity:	5.5 kg
Drum size:	55 litres
Centrifuge:	1300 rpm
Cycle time:	60 minutes
Noise levels:	47 / 59 dB
Weight:	112 kg
Dimensions:	650 x 1060 x 700 (mm)



(mm)

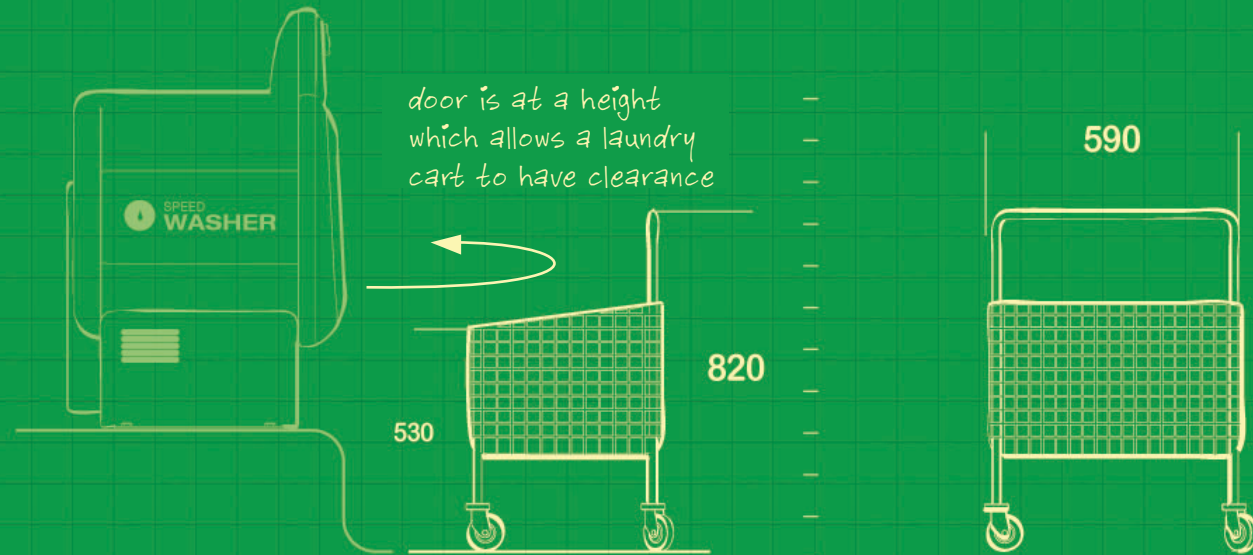
Other information:

This is the standard washer in the laundry room configuration.

Electronic tag-locks on each machine which is connected to the booking system enables a more flexible use of the laundry room.

STANDARD
LAUNDRY CART

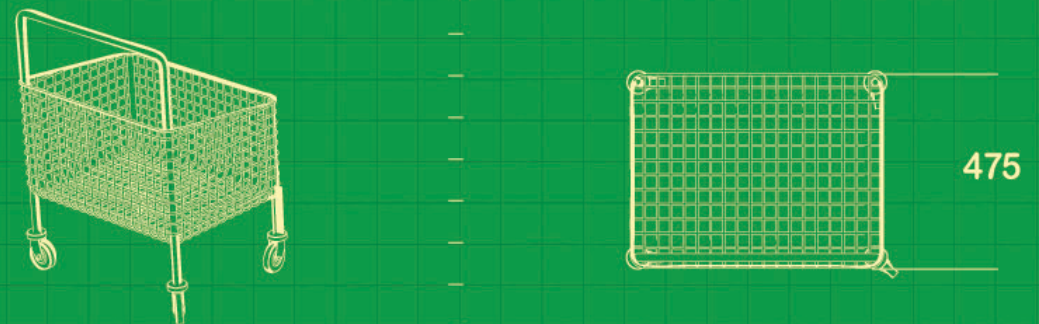
Type: Laundry cart
Capacity: 7 kg
Dimensions: 590 x 820 x 475 (mm)



Other information:

The laundry cart is of standard dimensions, proven and tested for ergonomy.

The machines are mounted on a 30 cm ledge, which simplifies loading & unloading from the cart.



(mm)

 SPEED
WASHER



activate & open by
touching with key-tag

①



Twist & P

Key





idle
use key to activate..



unlocked
& activated



cycle through
the programs...



changing to white wash



push to
start

40 C° white, push the blue knob



counting down..



counting down..



finished!



use key to unlock & open..

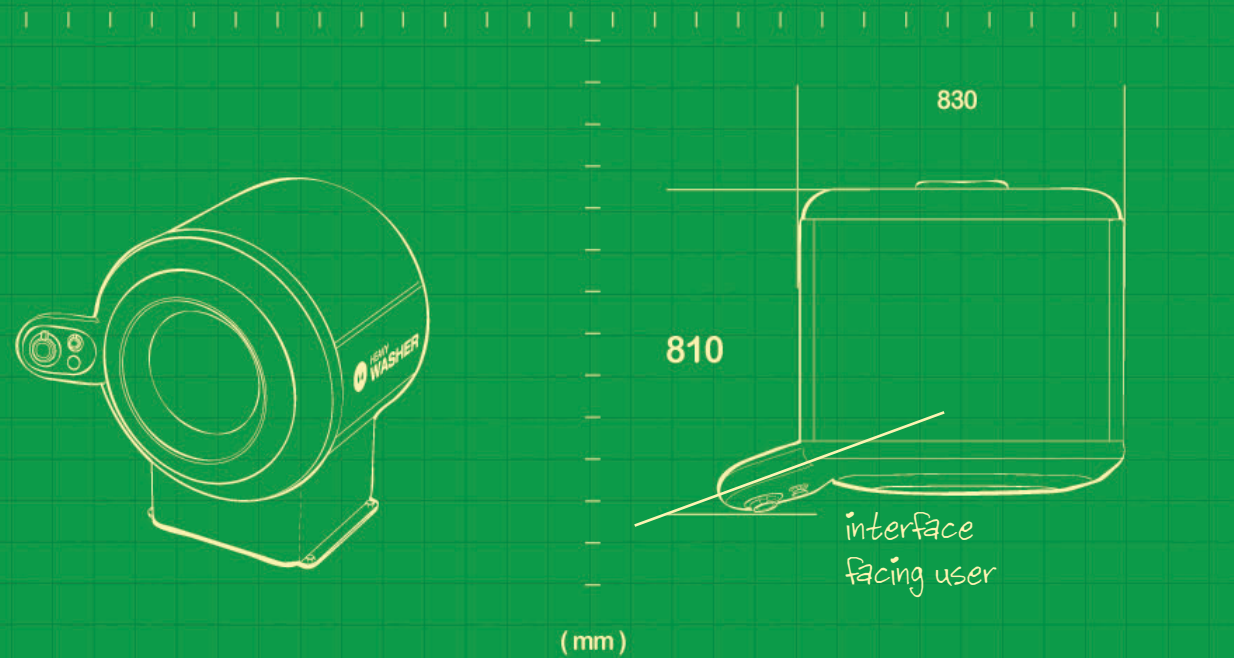
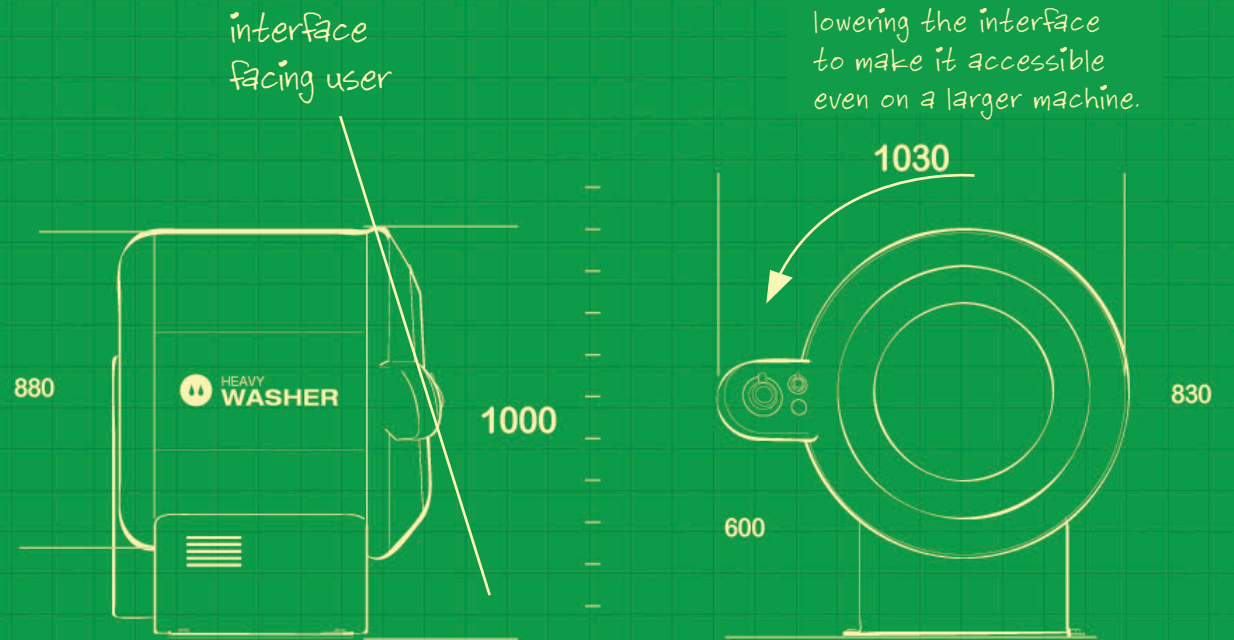
HEAVY WASHER

Type:	Heavy Duty Washer
Capacity:	13.2 kg
Drum size:	132 litres
Centrifuge:	1000 rpm
Cycle time:	60 minutes
Noise levels:	49 / 72 dB
Weight:	325 kg
Dimensions:	1030 x 1000 x 810 (mm)

Other information:

This heavy duty machine is for those situations when “standard” isn’t good enough.

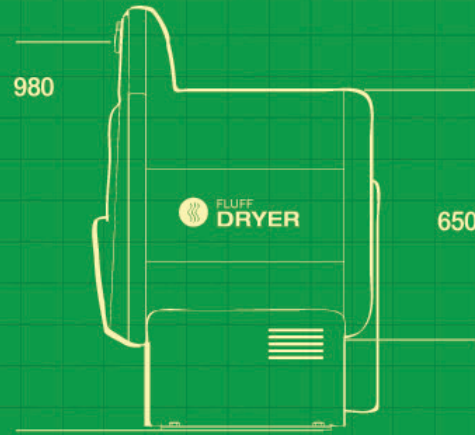
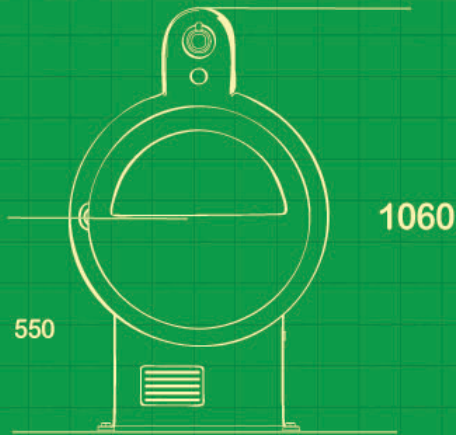
With this machine as a part of the laundry room setup, there is nothing that can’t be cleaned. The biggest rugs will be taken care of.



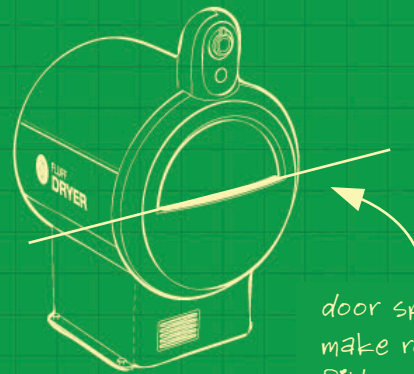
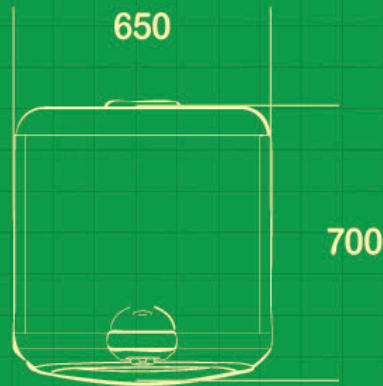


 **HEAVY
WASHER**

 **FLUFF DRYER**



Type:	Fluff Dryer
Capacity:	9.8 kg
Drum size:	125 litres
Effect (kW):	4.9
Drying time:	45 minutes (full load)
Weight:	80 kg
Dimensions:	650 x 1060 x 700 (mm)
Airflow:	200 m ³ / h



(mm)

Other information:

The Fluff Dryer is a high performance evacuating dryer.

It's especially developed to handle the high demands of a public laundry room, with short & efficient drying times, high durability and a long lifespan.

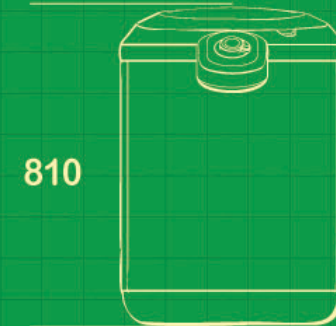
One of these has the capacity to handle a double load from the Speed Washers.

 **FLUFF DRYER**





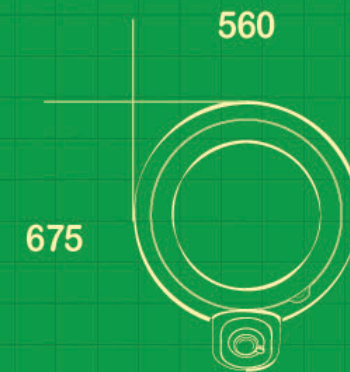
Type:	Hi-perf. Centrifuge
Capacity:	7 kg
Drum size:	35 litres
Centrifuge:	1500 rpm
G-factor:	450
Noise levels:	70 dB
Weight:	75 kg
Cycle time:	4 minutes
Dimensions:	560 x 800 x 675 (mm)



Other information:

A high performance centrifuge is often a good option for a laundry room configuration.

Using this for the tougher jobs, prolongs the overall lifespan of the machinepark.



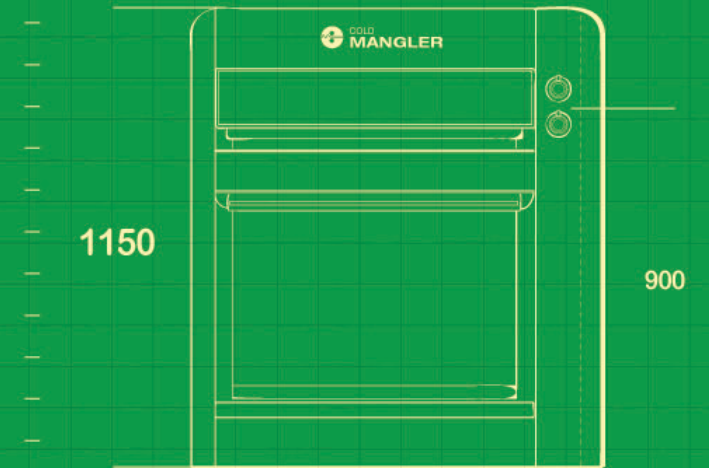
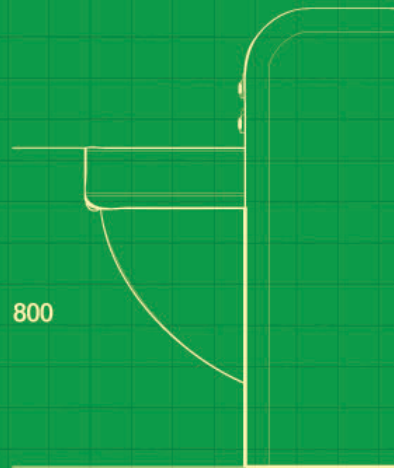
(mm)



 SPEED
CYCLONE

 **COLD MANGLER**

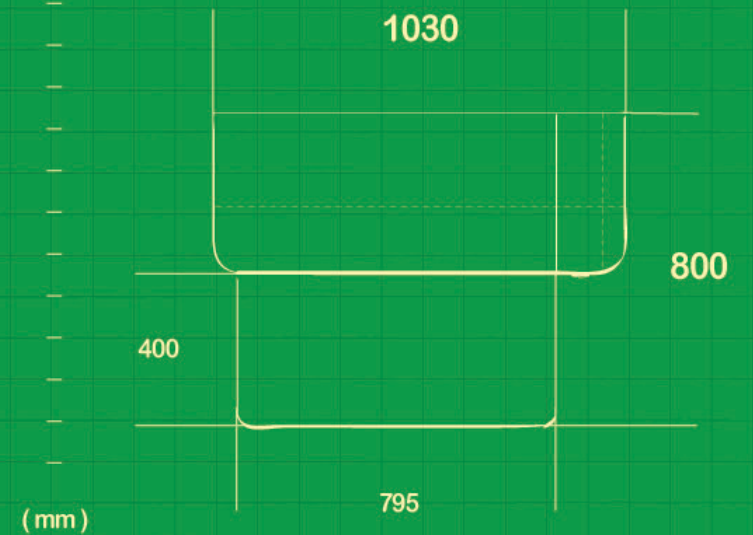
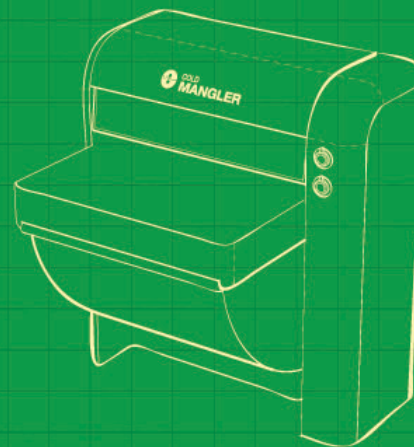
Type: Mangler
Roller size: 740 mm
Roller cloth: 2500 mm
Pressure: 300 kg
Weight: 105 kg
Dimensions: 1030 x 1150 x 800 (mm)



Other information:

A mangler might seem like an old fashioned tool, but is a crucial for professional handling of textiles.

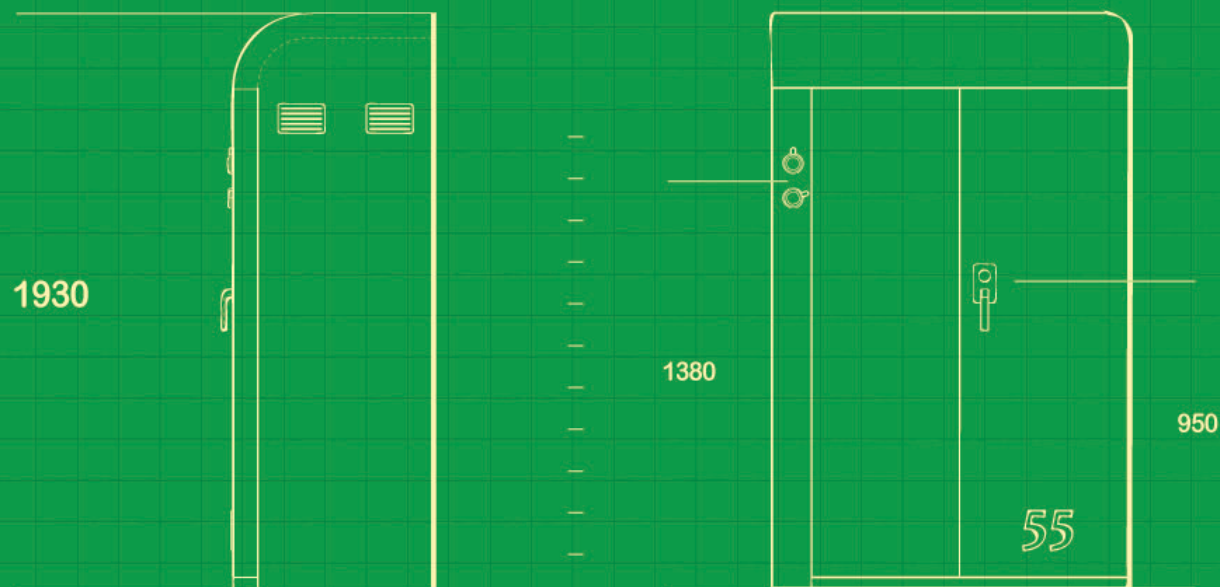
Adding this option to the laundry room gives a more complete and professional setup.





HOT CLOSET

Type:	Drying cabinet
Capacity:	6-8 kg
Effect, total:	6,3 kW
Timer, max:	260 minutes
Airflow:	170 m ³ / h
Noise level:	50 dB
Weight:	145 kg
Dimensions:	1200 x 1930 x 680 (mm)

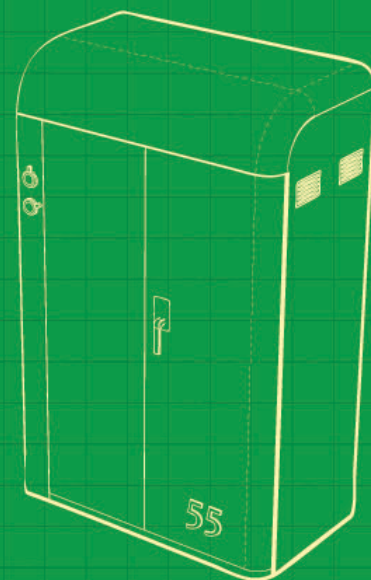


Other information:

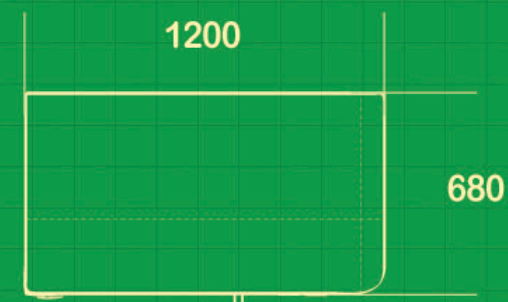
The Hot Closet has a low energy usage and fast drying times.

Double fans give a perfect balance between evacuated and re-circulated air. Underpressure prevents leakage of heated air into the room.

Every closet has individual tag-locks



(mm)





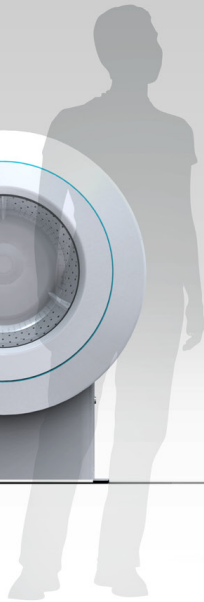
ALLERGY SAFE



 **SPEED ALLERGY SAFE
WASHER**

desaturated. all white.

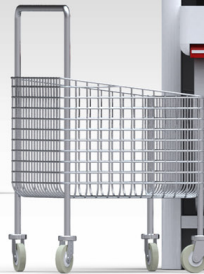
*same specs as the standard
speed washer, but it uses
allergy safe detergents.*



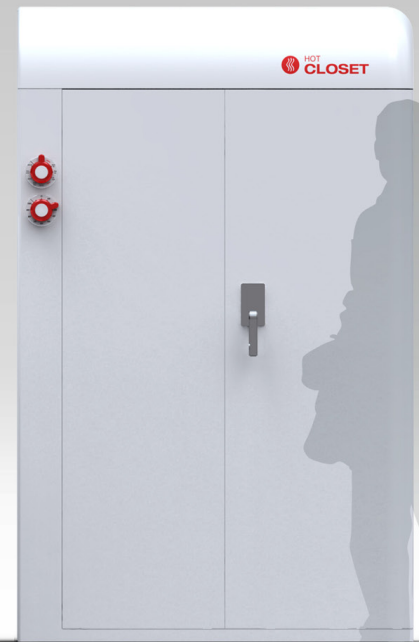
Washers



Dryer



Mangler



Dryer

6

machines
booking system
environment

Final result



12

13

14

15

32

33

34

35

36

37

39

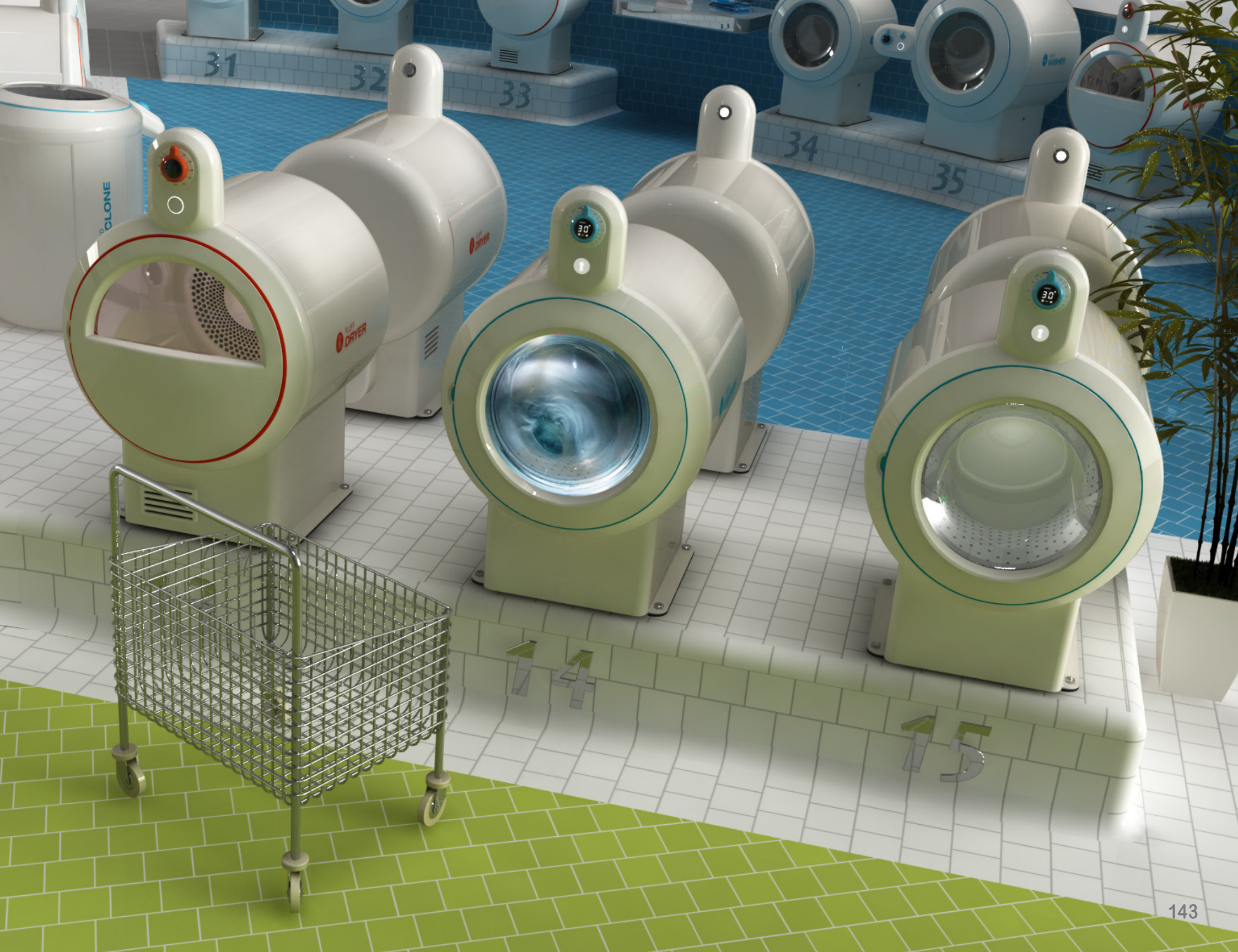
TV

CLIFF DRYER

CYCLONE

WASHING MACHINE

WASHING MACHINE



31

32

33

34

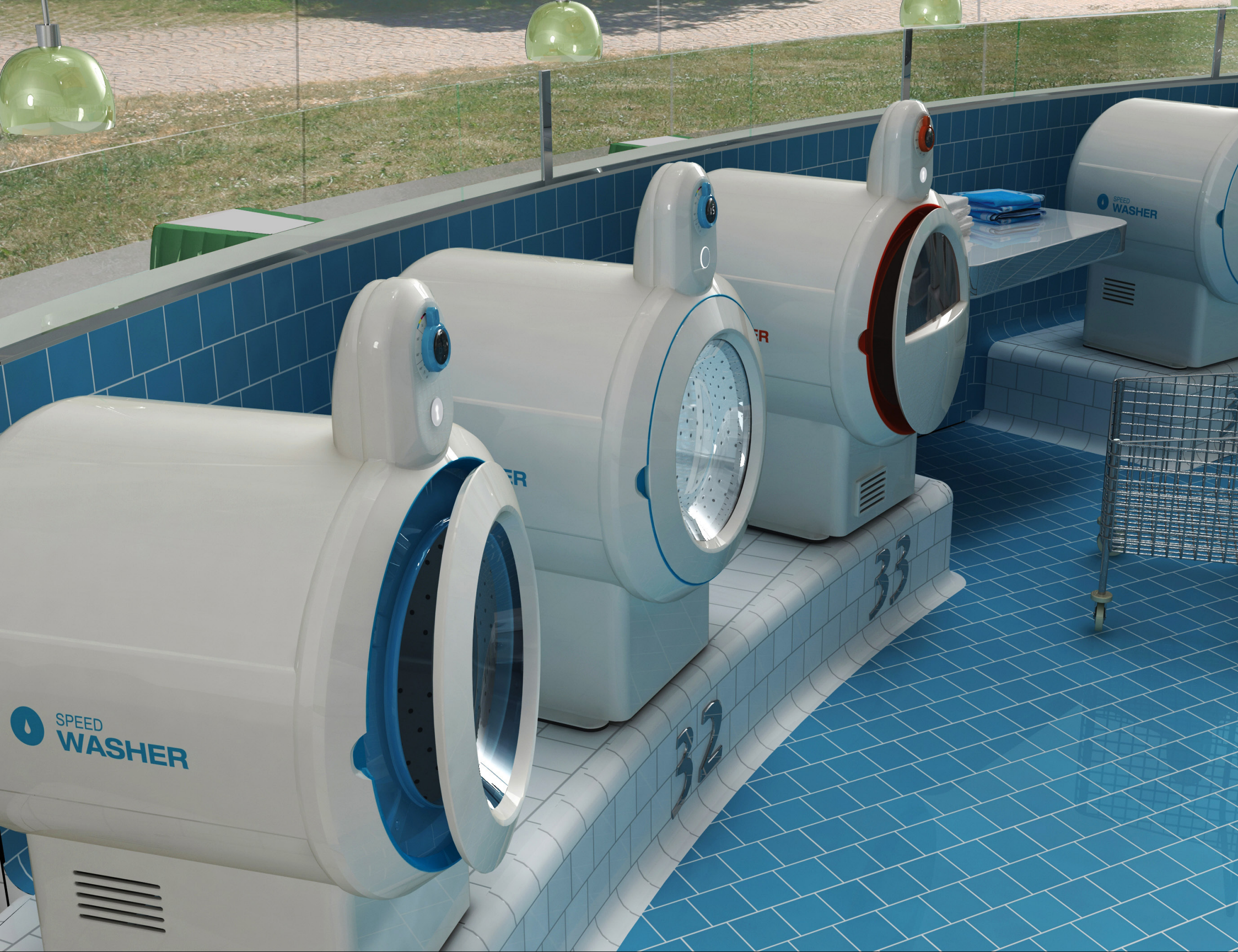
35

1

4

1

5



 SPEED
WASHER

32

33

 SPEED
WASHER



HEAVY
WASHER

FLUFF
DRYER

35



FLUFF
DRYER

COLD
MANGLER

4



HOT CLOSET

HOT CLOSET

HOT CLOSET

54

55

SPEED ALLERGY SAFE
WASHER

24

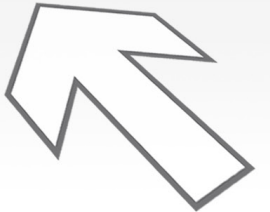
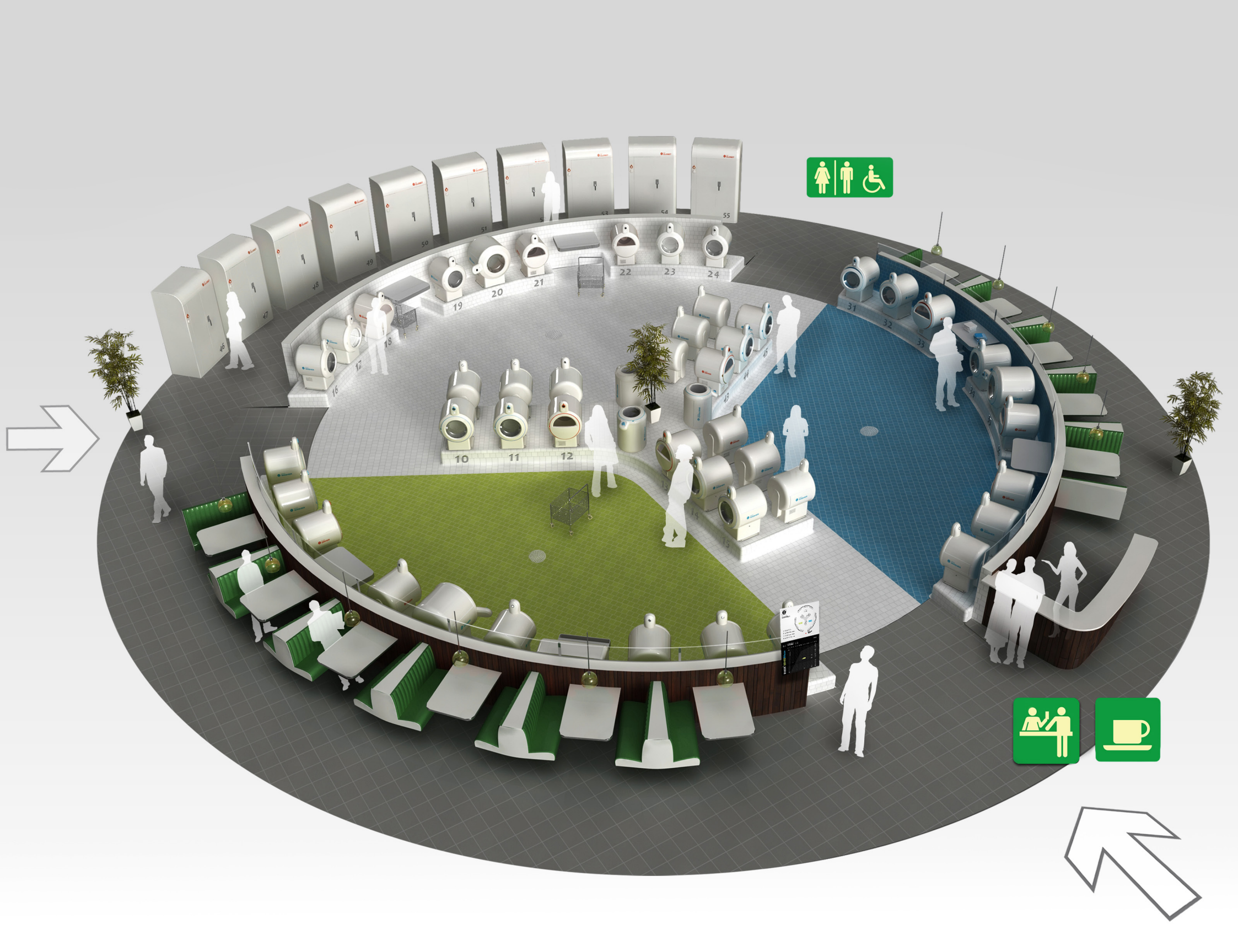
6.2 final results

Discussion

My ambition with this project were to create a new environment, a third place (not home or work), where neighbours can meet or just relax while doing their laundry.

The resulting products & renderings make the concept tangible. The styling of the environment could have been executed differently, and also the design of the machines, it's really the core of the concept which is important, to have a functional and neutral environment where neighbours have a chance to meet, with systems & solutions designed to minimize conflicts, without excluding the presence of others.

I also wanted to show that established systems can be changed. We don't have to reinvent the wheel to make a a positive social & environmental impact in the city & neighbourhood.



list of References

Literature

Product-Service Systems: Panacea or Myth?, Oksana Mont
Published in 2004 by IIIIEE, Lund University
ISBN: 9188902331

Den moderna ensamheten, Maria Karlsson, Sharon Rider
Published 2006 by Brutus Östlings bokf Symposion
ISBN: 9789171397706

The Individual In A Social World: Essays and Experiments
Published 1991 by McGraw-Hill Humanities/Social Sciences/Languages; 2nd edition
ISBN: 9780070419360

Publications & Articles

Om tvätt och människor: Världen i en tvättstuga - Ylva Hemstad
Documentary, SVT (1997)

Att bo ensam är ett tecken på frihet
DN (2008-03-11), Emma Lofors
<http://www.dn.se/insidan/att-bo-ensam-ar-ett-tecken-pa-frihet-1.615502>

Det ensamma studentlivet, Lundagård
www.lundagard.se/2009/05/13/det-ensamma-studentlivet/

Informationsteknologi i vardagen - den intelligenta tvättstugan
Karin Holmgren, Peter Johansson (2004), Institutionen för Informatik, Göteborgs Universitet.
http://gupea.ub.gu.se/bitstream/2077/1190/1/Nr_3_KH,PJ.pdf

Laundromat Love; Whirlpool To Host Laundry Social Events for Singles
http://www.rtoonline.com/content/article/Aug_06/WhirlpoolWashermarketingPlan082806.asp

Vad är egentligen Trygghet?
<http://www.tryggaremanskligare.goteborg.se/trygghet.html>

51 misshandlade i tvättstugan – bara i Stockholm
Aftonbladet (2003-07-07), Malin Ekmark
<http://www.aftonbladet.se/nyheter/article149145.ab>

Stängda tvättstugor ska stoppa våldsvåg
Metro (2008-08-20), Ingrid Arinell
<http://www.metro.se/se/article/2008/08/20/01/2808-57/index.xml>

Tvätten har varit både slitgöra och gemenskap
Tryggare och Männskligare Göteborg (2003-11-08), Gerd Cruse Sondén
http://www.vartgoteborg.se/prod/sk/vargotnu.nsf/1/tema_trygghet_tvatten_har_varit_bade_slitgora_och_gemenskap

Clean Energy Intro: Solar Businesses
<http://cleantechnica.com/2008/03/14/clean-energy-intro-solar-businesses/>

Solvärmepumpen -en genialisk lösning
http://www.eviheat.se/pages.aspx?r_id=44255

Drainergy Drainpipe Heat Exchangers
http://web.mac.com/winstonworks/http%3A__www.inventure.ca/InVenture.html

EcoTip: Product Service Systems (PPS)
http://www.treehugger.com/files/2005/01/ecotip_product.php

The world largest laundromat
<http://www.worldslargestlaundry.com/machines.html>

What's wrong with the majority of washing machine manufacturers?
<http://www.washerhelp.co.uk/reviews/miele-overview.html>

Are new washing machines made as well as they used to be?
http://www.washerhelp.co.uk/buying-advice-1.html#cl_q3

live|work: Healthy Machines – A New Service?
http://www.treehugger.com/files/2006/10/livework_health_1.php

Websites

www.iiiee.lu.se
www.nortec.se
www.treehugger.com
www.washerhelp.co.uk
www.cyclonelaundry.com
www.tryggaremanskligare.goteborg.se

