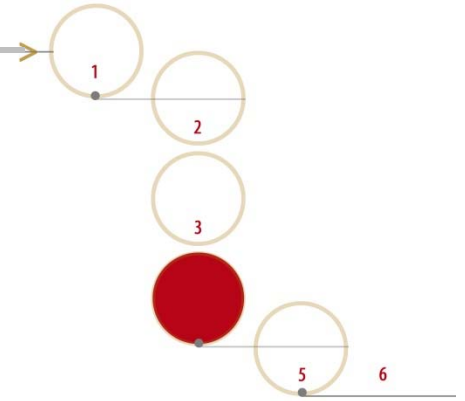


CHAPTER 4

DESIGN DEVELOPMENT



“Designing interior environments can be defined as determining the relationship of people to spaces based on psychological and psychical parameters, to improve the quality of life”

(Sassi, 2006).

Chapter four develops a design approach. It commenced by translating the theoretical investigations in a spatial manner. Thereafter a brand identity was developed through a logo, menu and a moodboard. The requirements for a commercial kitchen were investigated to inform the spatial layout. A programme list together with three stages of iterative explorations developed the final spatial layout. A sensory exploration of the spatial environment is also described to express the interaction and user experience. The focus points for design details are recognised as both the pod and booth seating configuration, the kitchen interface and lastly a conceptual approach toward an interaction platform. These details will be supported by additional and adaptable systems. For commencing the technical development, a stance towards materiality is taken and a summary of the design details and technical focus is given.

4.1

DESIGN APPROACH

Design development will be based on qualitative research through prototyping and testing. This is an iterative process of constant explorations and reflections (*refer to section 1.8.3*). The explorations will consider various avenues of theoretical implementations and design strategies necessary to formulate an in-depth design approach. The process will be viewing various design aspects related to the programme, spatial requirements, spatial layout, characteristics and materiality.

The concepts formulated through the theoretical investigations must be viewed as the platform for all the design decisions. A summary of the theoretical investigation is drawn to connect the problem with the proposed aims and objectives (*diagram 4.1.1*).

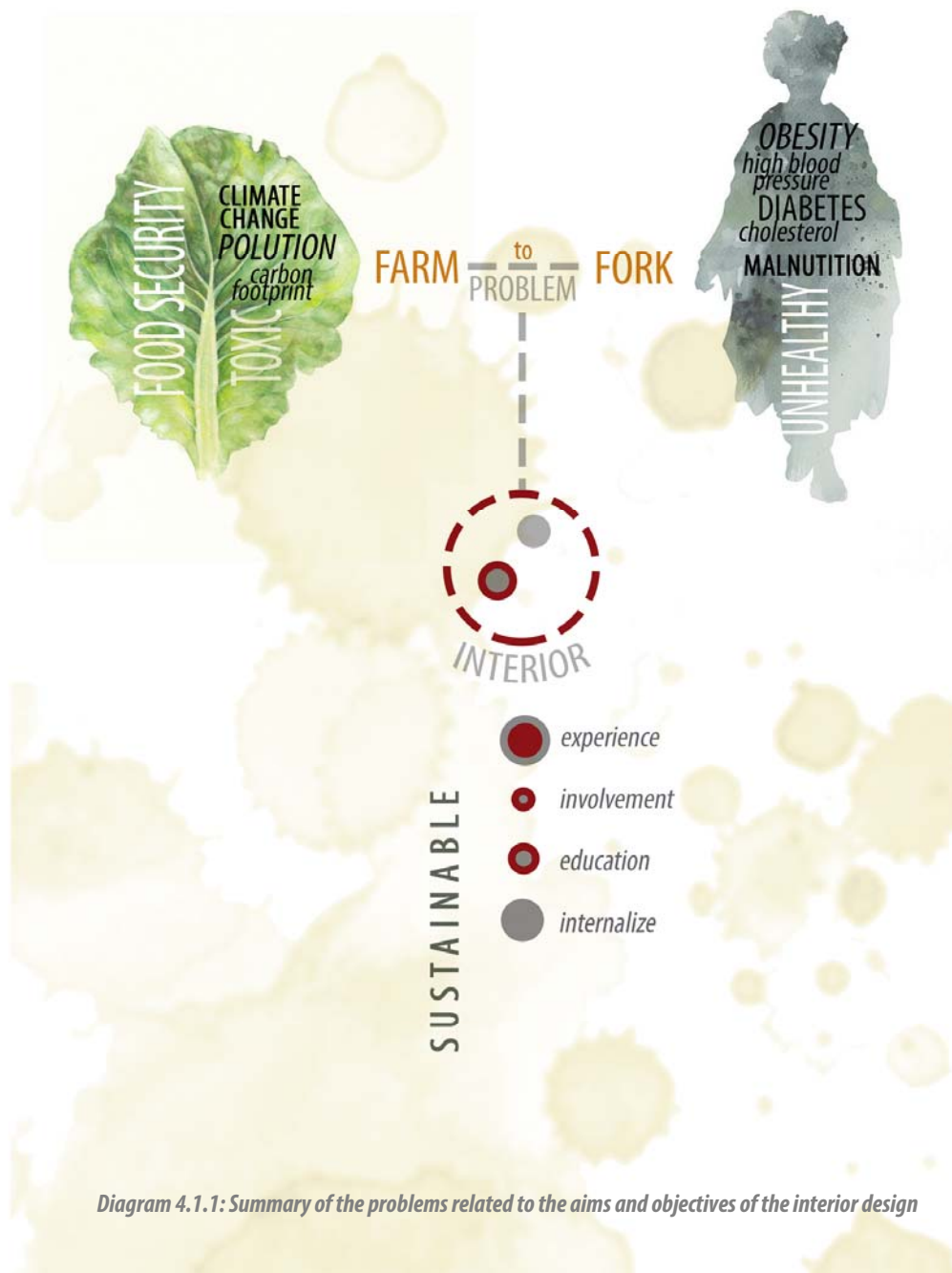


Diagram 4.1.1: Summary of the problems related to the aims and objectives of the interior design

4.1.1 IMPLEMENTING THEORY IN A SPATIAL MANNER

“You can’t save the world, but you can set it an example”
Alvar Aalto, Finnish architect and designer.

Different approaches to the processes of eating were explored through the theoretical investigations (Chapter 3). The theory resulted in concepts which must be interpreted as interior design strategies. The theoretical ideas are explored within the spatial boundary of the proposed site. The following diagrams must be seen as preliminary explorations of how the ideas can translate in a spatial manner.

4.1.2 SPATIAL TRANSLATION OF THE CHANGING KITCHEN CONCEPTS

The organic movement (refer to 3.2.2) is a clean, conscious and honest way to farm and eat, as all the processes are on display. This makes it a suitable theme for the proposed restaurant, as it associates with the concept of a process oriented view (refer to 3.2.1). Principles of the changing kitchen (refer to 3.4.3.3) also integrate with this movement, seeking central placement and exposure of processes. To create this transparent spatial quality, the visibility of processes must be considered. All the processes, including the waste areas, are intended to be visible for users to see and or engage in (diagram 4.2.1).. These views will furthermore create an educational value.

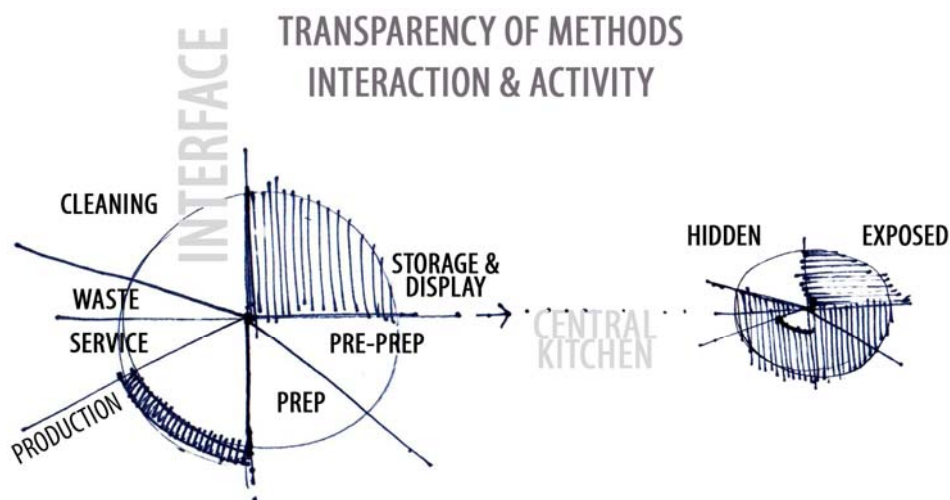


Diagram 4.1.2: Exploration of transparent qualities for the interfaces

This operational style of the programme informed the menu design (refer to 4.2.2). A specific menu with a limitation on the amount of items to choose from, informed the spatial organisation. It defines the amount of space required for pre-prep, prep and finishing.

An experiential feature of the menu is the introduction of integrated indoor farming (diagram 4.1.3). Urban farming within an interior environment is a new concept, not yet defined and technically developed (refer to 3.2.3). Farming systems within the interior creates a new threshold for user interaction, exposing users to the practice of growing. Users are encouraged to interact with the systems before and during the eating process, by foraging for herbs and spices.

In-farm systems will be a feature in its own right. It can be used as screening/dividing elements, contribute as a natural element within the space and lastly entice sensory qualities of smell, touch and sound (refer to the sensory exploration in 4.5).

URBAN FARMING

INTEGRATE WITHIN THE INTERIOR

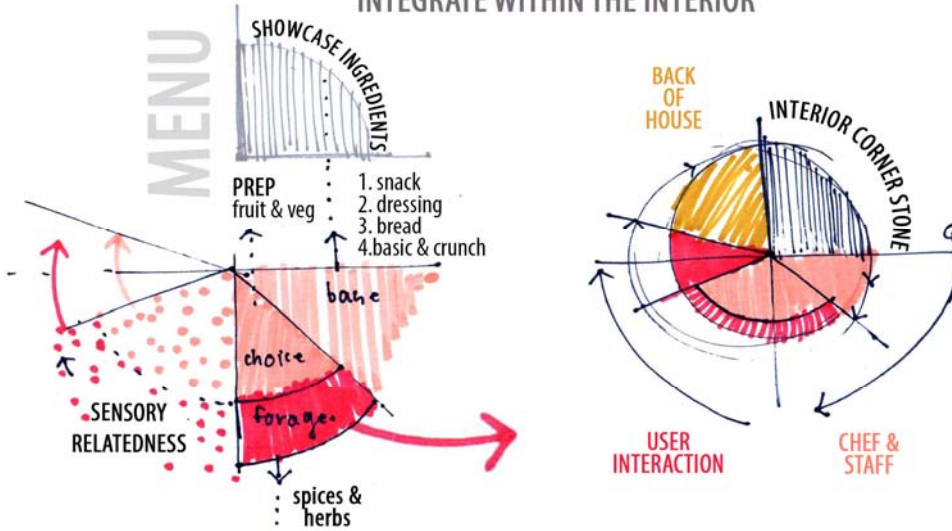


Diagram 4.1.3: Conceptual menu development with interior farming systems

4.1.3

SPATIAL JOURNEY THROUGH THE INTERACTION OF THE PROCESS ORIENTED VIEW

The interior will seek to create an experience, a memory, portrayed in a spatial journey (refer to 3.4.3). In order to accommodate various types of users, the interior will comprise of two routes. Each route will have a different speed, to accommodate both the users in a hurry or those who intend to spend time in the space (diagram 4.1.4). The routes will be either personal and bespoke or shared and related.

The objective is for all the users to equally perceive the essence of the experience, which is an accessible interaction with the process oriented view of eating. Together with various design strategies (refer to 4.4.2.3), a centrally placed demarcated zone will further assist in this task. All the users, irrespective of their route, will interact there in a creative and expressive manner (refer to 4.7.3).

THE INTERIOR: SPATIAL JOURNEY

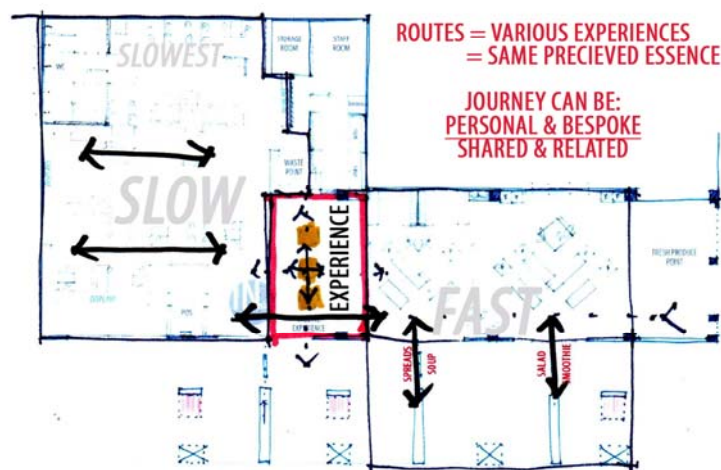


Diagram 4.1.4: Movement of the two spatial routes and the centrally placed interaction platform

The spatial journey is designed around the view of the eating process. The intent manifests in the growing of organic produce. By exposing the growing of food, a different approach towards the eating process is created. It is an opportunity for users to engage with the eating process on intangible levels (refer to diagram 3.4.2 & 3.4.4). The four levels of engagement are:

- Sensory: touching, seeing and smelling of herbs and food. The tasting and sounds of people talking or dripping water from the indoor-farming systems during consumption (refer to 4.5).
- Related quality: comparing one to what others choose to eat and the sharing of herbs. Be involved in the food preparation and waste cycle.
- Personal: making a choice based on a preference, norms or a conscious consideration.
- Perceptive: change the idea of eating, by exposing the before (growing) and after (waste) life of food.

On a macro scale, the interior is divided into various zones for the three identified processes of eating to take place in (diagram 4.1.5). These phases; production, consumption and disposal/distribution, must be connected spatially, as they are interdependent on each other. By showcasing the lifecycle of the eating process within the interior environment, the user will engage in the entire process.

PROCESS ORIENTED VIEW

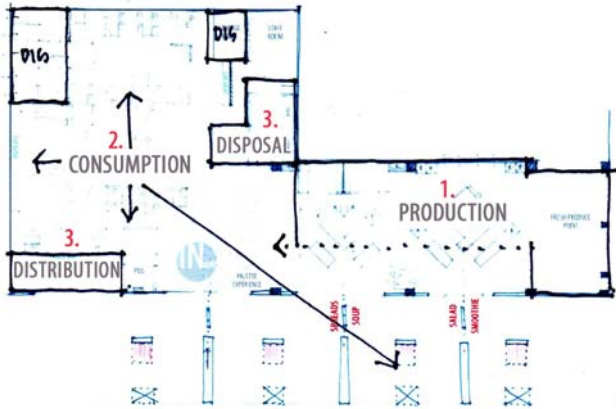
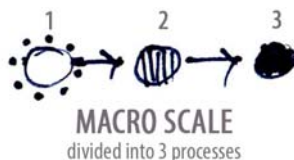


Diagram 4.1.5 Macro scale spatial implementation of the processes of eating

INTERACTION PATTERN



MICRO SCALE

3 processes occur continuously with user interaction
CURTAILMENT: repeated actions become habit

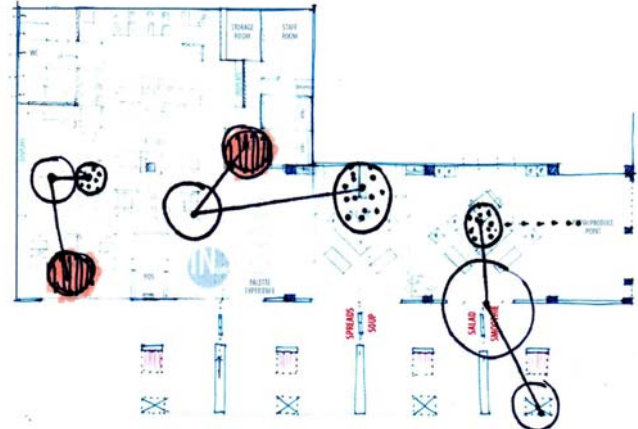


Diagram 4.1.6: Micro scale implementation of the processes, create an interaction pattern

The users will also engage with the three processes on a micro and intimate scale (diagram 4.1.6). The users will constantly interact and go through the processes, by means of small movement or views. On a psychological level, this repeated pattern of the process will create a habitual sense within the user, encouraging them to internalize the interior experience (refer to diagram 3.4.3).

4.1.4

CONCEPTUAL IDEAS FROM THEORIES

The following concepts are further drawn from both the organic movement and the changing kitchen.

1. Organic eating utilizes what the earth is offering, without altering the natural occurrence, inspiring a seasonal palette. (Figure 4.1.4.1: *Colours of seasonality* (Cameron, 2014)).
2. A transparent quality (Figure 4.1.4.2: *Ingredients turned into a product* (Bricco, 2011)).



4.2

BRAND DEVELOPMENT

4.2.1

LOGO

The restaurant is named; *the Inside*.

It directly links to the title of the dissertation, questioning whether people live green and sustainably within the interior environment. It also refers to internalization (implementation) of strategies towards the practice of sustainability within the environment and the human body.

A logo is developed (*diagram 4.2.1*), as the restaurant will relate to the users as a specific brand. This brand image will be expressed on the menu, packaging, façade elements and some interior elements. An iterative exploration of the logo was based on three requirements, namely:

- Represent something inside, referring to an interior quality.
- Suggest either the user or the environment as an image of sustainability.
- Graphically refer to growth or a lifecycle.

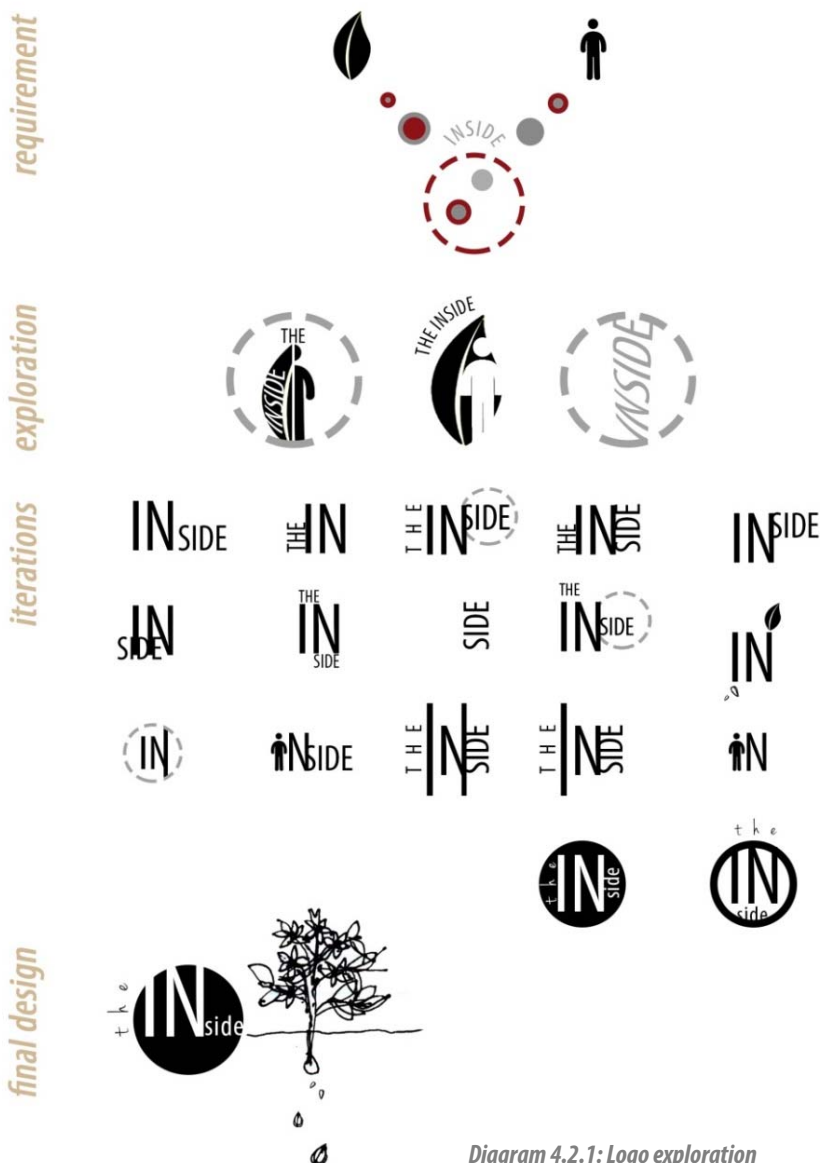


Diagram 4.2.1: Logo exploration

4.2.2

MENU & PACKAGING DESIGN

The menu is based on seasonality. Considering the range of organic produce possibilities, it will also be limited to four categories, namely: smoothies, salads, soups and spreads. A predefined palette of the season will be designed by chefs for the users to choose from. Both the base and choice of ingredients will be pre-prepared, as it creates simplicity in the operation of the kitchen. After receiving the chosen palette on a designed service board (figure 4.2.1), the users must finish the order by foraging for the herbs or spices within the interior farming systems. Suggestions for foraging are indicated with a colour, but it can also be per preference of the user.

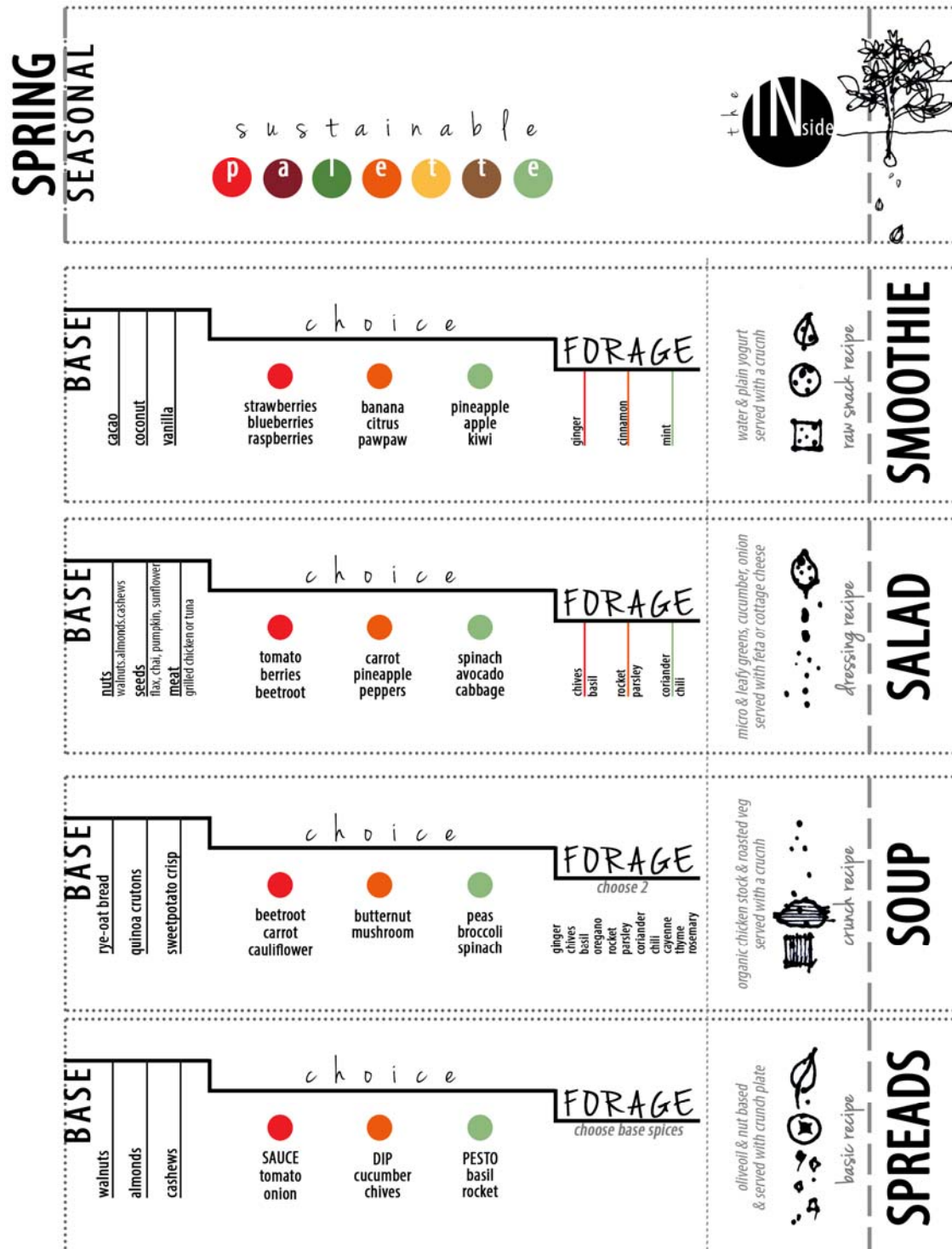


Diagram 4.2.2: Menu design

An envelope, with the same character as the menu, will be handed out upon exit at the point of sales (*figure 4.2.2*). It will have a seasonal recipe on and carry seeds within. It intends to encourage users to grow their own produce, educate users on the ingredient of what they eat while inspiring them to self-prepare these meals at home. A paper-bag is also designed for take away meals (*figure 4.2.3*). It resembles a transparent quality to see the elements within.

The bespoke service board, menu and packaging are branded items, handcrafted by the community and joined with methods of sewing and staples (*refer to diagram 4.7.1.B & 4.7.1.C*).



Figure 4.2.1: Image of the service board



Figure 4.2.2: Image of the envelope with recipe and seeds



Figure 4.2.3: Image of the paper-bag packaging

4.2.3

LOOK & FEEL

The interior intervention will complement the character of the **urban context** of Maboneng (refer to section 2.4.1). It will furthermore implement theoretical approaches and **transparent qualities** based on the principles of the changing kitchen. The joinery will aim to **express the process, methods and lifecycles** of the materiality. The lifecycle will be heightened by implementing **adaptable features**.

The interior look (diagram 4.2.3) will be an interplay between **industrial and natural materials**; both expressed in a raw and honest state (refer to diagram 4.7.1.C). Details will be emphasised with different materials with exposed joints, communicating the process to the users. A creative quality will be expressed within these connecting details. **Neutral colours** will form a backdrop for the seasonal palette, emphasising the colours of the food. Some walls will be painted warm **red**. It will psychologically influence the user behaviour, as it **encourages energy, excitement and strength** (Wright, 2008). The space is further illuminated with cool white task lighting, warm white mood lighting, and **vibrant pink grow lights**. The lighting strategies add to the **liveliness** of the interior space, directly relating to growth and activity.

Green will be emphasized in the interior with the growing herb systems as well as neutral greens of ceiling panels and a bright green to emphasize the exposed duct system.

The interior feel will be based on the different **textures of the materials**, such as the wood and cork within the table and the brown paper of the menu. Various senses will be accentuated by interacting with the surfaces. The addition of loose elements, such as edible cutlery, will heighten the exploration.

The trend of healthy eating and sustainability supports this raw, exposed and organic approach. This **exposed approach** lends itself to transparent qualities, to see what is happening where and how.

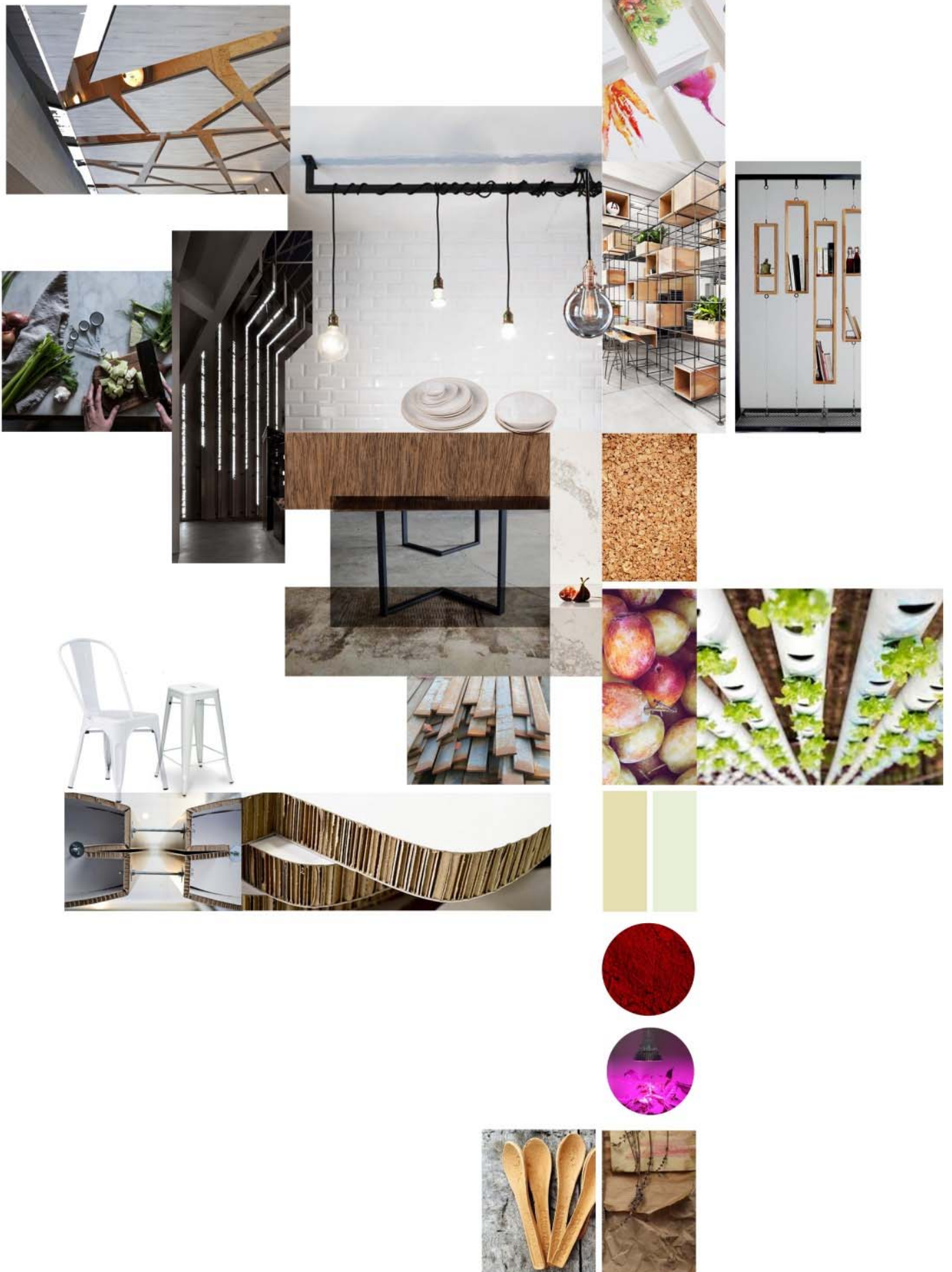


Diagram 4.2.3: Look & feel moodboard

4.2.4

CONCEPTUAL REQUIREMENTS OF THE PROPOSED PROGRAMME

The interior design of a service facility must satisfy a number of functional and aesthetic requirements. Thereafter the design in itself will showcase the operational style and the desired consumer behaviour of the specific foodservice facility (Lawson, 2008: 17.4). Based on the concept of the proposed programme, the following aspects are required for *the Inside*.

4.2.4.1

OPERATIONAL STYLE

The Inside intends to showcase all processes of the eating experience of a restaurant, in a raw and organic theme. This intention can be achieved by exposing specific back of house functions such as preparation and waste areas. It is important to consider the functionality of these exposed spaces, as it can be unorganized, noisy or even seem like a production-line of processes.

To create efficient and controlled flow between these exposed areas, it has to operate as a finishing kitchen (Lawson, 2008: 17.9). This type of kitchen specializes in lighter meals in a simplistic manner. A majority of the ingredients are prepared before service and only finished to order. It does not require factory type productions or bulk quantities in wide varieties. The kitchen area can be reduced in size and equipment but requires a broader area for various preparations.

A designed menu will inform the extent of preparation (*refer to 4.2.2*). Preparation areas of *the Inside* require the following characteristics to function optimally;

- Separated and grouped according to the task and type of preparation
- Stationary worktop which is also adaptable to suite various needs
- Easily accessible and equipped with storage for the elements to use during the task
- Direct access is required between storage and preparation areas

4.2.4.2

CONSUMER BEHAVIOUR

The exposed quality of both the kitchen processes and the consumption and waste processes, will seek to educate the user. Their behaviour will be determined by their perception of the interior experience, attained through the brand and story of the restaurant (*refer to 4.4.2.3*). Users and staff will interact in a combination of both counter and table service. The user will also interact individually with the space when they forage and finish their own meals. The sensory experience (*refer to 4.5*) intends to translate into specific knowledge about seasonality, processes and methods of food-preparation, lifecycles of materials and lastly recycling strategies.

4.3

COMMERCIAL KITCHEN REQUIREMENTS

Restaurants and other food facilities which provide items for user consumption, are labour intensive services. In order to develop such a service according to standards, specific requirements must be met. Planning, organizing and designing then take place accordingly.

Requirements are set to fulfil three roles in the design process (Lawson, 2008: 17.1), namely:

- Determine and seek labour efficiency of the service.
- Create standards and sizes to follow when designing the layout. The layout will suggest specific movements which will showcase the processes of the interior and the different functions within the environment.
- Technical development of the programme.

4.3.1

CLASSIFICATION

Requirements will be implemented by classifying the intended service. *The Inside* is classified as a mid-market type of restaurant, as it is defined by a limited menu with a food speciality in organic and raw produce. This type of restaurant requires between 80-100 seats, a spatial allowance of 1.5-1.8m² per seat and a kitchen area of 0.6-0.7m² per seat (Lawson, 2008: 17.9).



CLASSIFICATION

**MID-MARKET RESTAURANT
LIMITED MENU
FOOD SPECIALITY
80-100 SEATS**

space allowance: 1.5-1.8 m²/seat
kitchen area: 0.6-0.7 m²/seat

minimum
requirement: 0.6 x 80 seats
= 48 m²

The programme with its required spatial allocation per occupant can also be defined. It is a combination classification, with reference to SANS (SANS Part A, 2010: 43):

- Low risk commercial service (code B3): Non-industrial processes require 1 person per 15m².
- Entertainment and public assembly (code A1): A space for eating or recreational activities requires 1 person per 1m² in the case of loose seating.

It is the intent to fulfil both of these requirements within the design (*refer to section 4.4.3*).

4.3.2

SPATIAL REQUIREMENTS FOR MOVEMENT

All restaurant operations involve overlapping processes between the production, service and customer areas (Lawson, 2008: 17.2). The relation between these spaces and their various attributes has been considered (*diagram 4.3.1*).

These requirements are iterated on by grouping the processes into three movements. Important aspects and processes, with reference to the proposed programme, have been highlighted.

4.3.2.1

MOVEMENT 1: Receiving/deliveries and storage

Different types of deliveries are considered. It is either dry goods or cold ingredients. Dry storage requires utility shelves and cold storage is needed for fresh produce. Different types of cold storage to consider are under counter, roll-in, walk-in or glass door refrigeration. For *the Inside*, the fresh and daily perishable ingredients must have direct access to preparation areas. To also suggest a transparent quality, the different types of storage must be considered as a way of display.

4.3.2.2

MOVEMENT 2: Preparation, cooking and assembly/service

The sizes of the cooking areas depend on the amount of preparation done prior. The different types of cooking together with the required equipment, determine the grouping of cold, dry, wet or hot stations. These areas are centrally grouped in order to designate a specific area for this function. The following grouping strategy is considered for the proposed menu of *the Inside*;

- GROUPING 1:

The two fresh produce stations are grouped as wet and cold areas. A water area is included for the washing of the produce. Refrigeration units are fitted along a wall behind the stations. These stations are zoned with the smoothies and salads service areas. Both areas require cold storage with direct access to the perishable ingredients.

- GROUPING 2:

The soups and spreads service areas are grouped together. They comprise of a combination of wet and dry elements. Both services contain hot elements which require electricity for cooking and ovens for baking. They will both make use of the prepared produce in the adjacent grouping 1.

The assembly of meals must consider the intended flatware, dishes, glasses, trays and cutlery to be used. These elements must be accessible to the kitchen staff, service waiters and chefs.

The seating service areas are the main encounter of any restaurant facility. For *the Inside*, it is proposed to accommodate either people on the go or for a sit-down service.

4.3.2.3

MOVEMENT 3: Cleaning and waste

Cleaning can be either the washing of dirty equipment or chemical cleaning. The areas in which to do so and the storage for the cleaning equipment must be considered. These areas must link to waste management, where bins are required to either recycle, sort or dispose used elements. It requires direct access between the service, waste and cleaning areas. Only the cleaning area will be back of house.

4.3.2.4

CONCEPTUAL MOVEMENT

The transitions between the abovementioned three movements can be manifested in various spatial manners. Possible movements, based on the type of seating interaction during the eating processes, are explored (*diagram 4.3.2*). The intent of the movement concept is expressed diagrammatically. The aim is to create a new way of interaction by combining various movements (both social and individual). These ideas will be iterated within the exploration of the layout (*refer to section 4.4.2*).

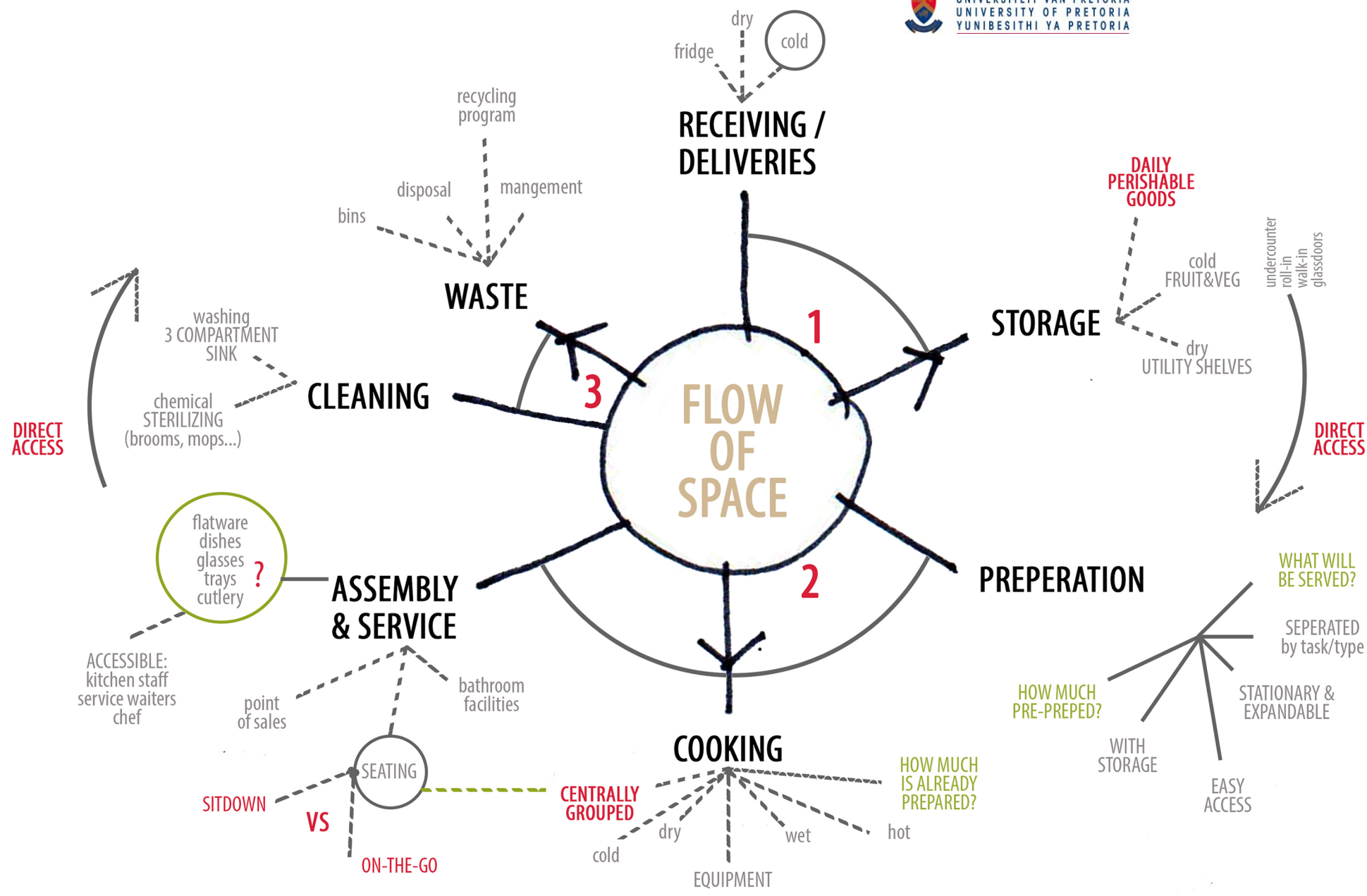


Diagram 4.3.1: Requirements and considerations for a commercial kitchen, (Created by the author of this dissertation with reference to (Lawson, 2008: 17-2, 17-3))

MOVEMENT

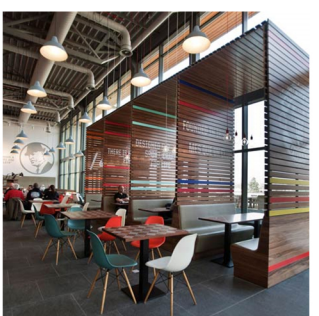


GAMSEI cocktail mixology bar, Munich, by Buero Wagner

Figure 4.3.A: Podium seating (Dodo, 2011)
PODIUM SEATING & CENTRAL WORKSPACE
strip boundary between guest & barman
=INTERACTIVE EXPERIENCE

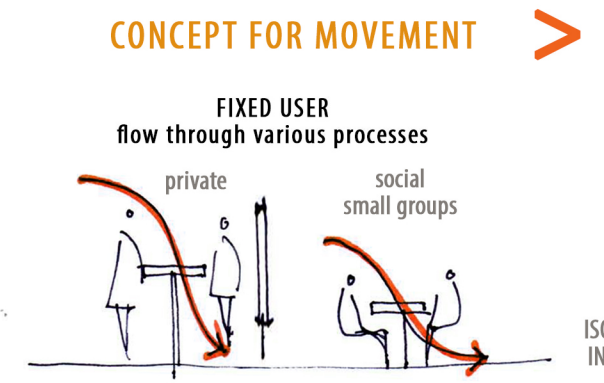


INFORMANT



NIKE EMEA headquarters canteen, Netherlands, by UXUS

Figure 4.3.B: Booth seating (Archdaily, 2014)
DIFFERENT SEATING IN SOCIAL HUB
Individual tables/counters
= vast interaction vs.
Timber-slatted booths
semi-enclosed & cozy = private interaction
=PERSONALIZED EATING EXPERIENCE



INTENT > AIM

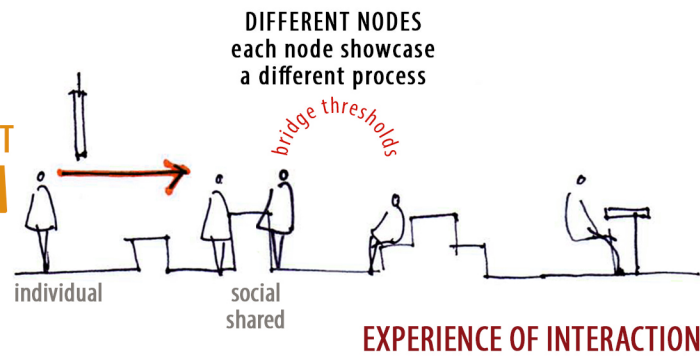


Diagram 4.3.2: Concepts for movement between processes, (Created by the author of this dissertation with reference to (Dodo, 2011)(ArchDaily, 2014))

4.3.3 SPATIAL REQUIREMENTS OF THE PROPOSED PROGRAMME

After considering the classifications and requirements of a finishing kitchen in conjunction with the function of the menu, the minimum required square meters for the various spaces are determined (diagram 4.3.3, with reference to diagram 4.1.2). The areas are based on standard ergonomic design for kitchen spaces to function in (Lawson, 2008: 17-8 - 17-10). The proposed amount of staff and their circulation area within the kitchen is also indicated. The indoor urban farming systems (discussed in section 4.1.2) and the proposed interaction platform (discussed in section 4.1.3) are integrated within the production and service areas.

Circulation areas for users within the kitchen area have not yet been considered. These witness areas will connect the kitchen and eating processes. The ratio of kitchen to circulation space must be implemented within the design development.

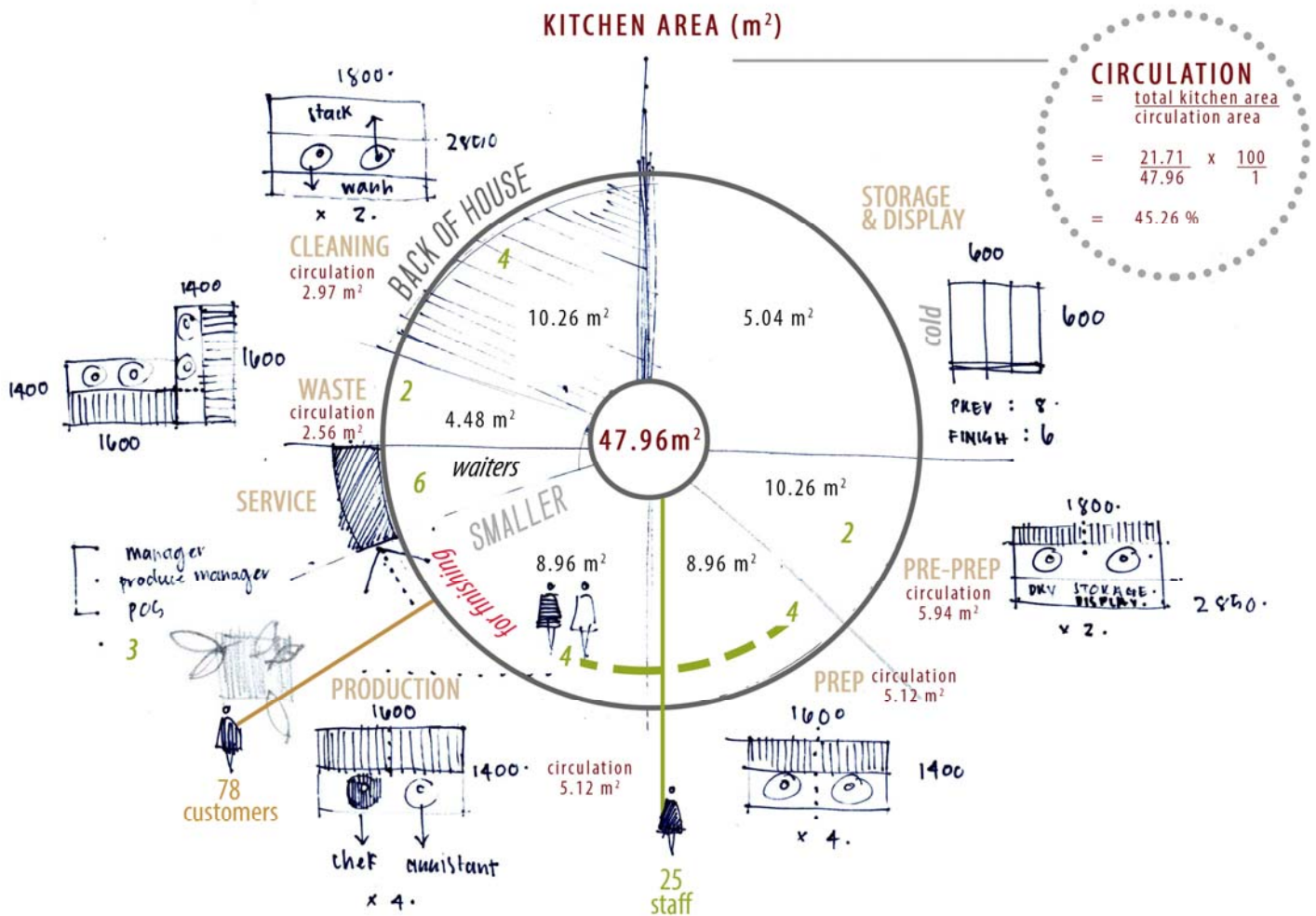


Diagram 4.3.3: Spatial exploration of the proposed programme based on ergonomic spatial requirements (Created by the author of this dissertation with reference to (Lawson, 2008: 17-8 - 17-10))

4.4

SPATIAL LAYOUT

4.4.1

PROGRAMME LIST

A programme list is compiled to define the required areas and elements within the proposed interior (*diagram 4.4.1*). The list is based on the process-oriented-view theory (*refer to section 3.2.1*). It is divided into the three phases of the eating process namely; production, consumption and distribution/disposal. The list indicates the distinct programme in the phases, the movement between the processes as well as overlaps and variations between them. As conclusion to the programme iteration, the following reflections are made.

- The programme is enriched by suggesting strategies for the movement of produce in or out of the restaurant. It connects the surrounding context and community to the programme. *The Inside* becomes a place where fresh produce can be contributed or exchanged
- Both the production and consumption phases require a worktop interface. In order to connect these phases, the interface design must express the same design details and characteristics but be changeable to adapt for a different purpose.
- All three phases require storage. The interior character of exposure can be translated, when it is established that the storage can become the display as well.
- In line with the farm-to-table vision (*referred to in sections 3.2.1 & 3.2.3.1*) the users must be educated on where fresh produce come from, lifecycles of materials, processes in the kitchen or recycle strategies. All three of the phases must display or communicate information.
- The golden thread of the programme is to connect it with the farm (seeds) and growing.

In essence, two overlapping elements will be explored within the layout. They are the worktop interfaces and various methods of display/storage. It is also important to consider the seating as an integrated part of the entire process. All of these explorations will showcase flexibility and changeability of the space.

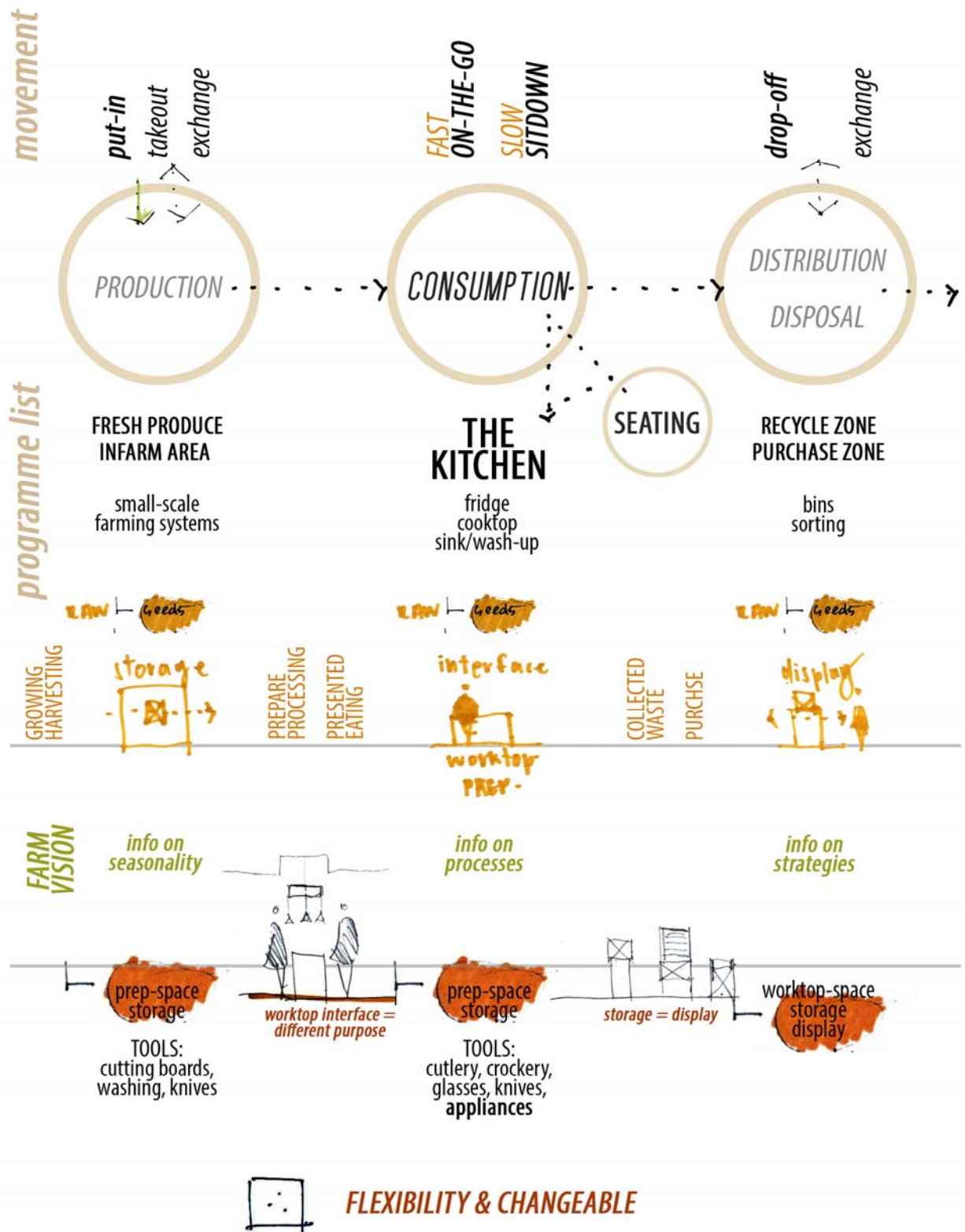


Diagram 4.4.1: Representations of the proposed programmes, requirements and intentions; divided into the three phases of eating

4.4.2

EXPLORATION OF THE LAYOUT

Various iterations of the layout were explored and tested. The iterations implemented concepts of the investigated theories (*refer to chapter 3*). Analysis took place with the use of the following key:

KEY  kitchen  seating  witness
by user  movement

Following the analysis, each layout is named and described in one sentence. After each exploration a reflection of positive and negative comments are stated.

The exploration is divided into three iteration- stages, namely:

- Iteration 1: the exploration of initial thoughts (Appendix A, pages A1-A4)
- Iteration 2: detailed design approach with the application of requirements (Appendix A, pages A5-A8)
- Iteration 3: final considerations of placements and movements

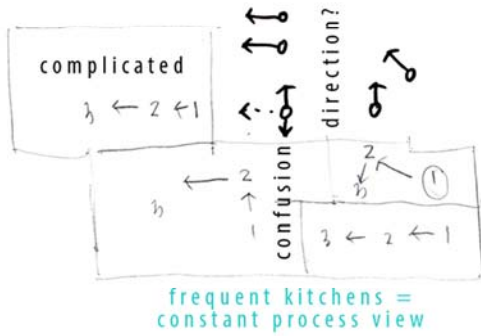
As a summary of the entire process, simplified diagrams which showcase the essence and unique characteristics of each individual exploration are compiled (*diagrams 4.4.2.1 & 4.4.2.2*). Reflections and comments on the iteration-stages conclude the exploration. The summary used the following key:

KEY *Name*
SUMMARY OF ITERATION  essence of iteration
highlighten in blue

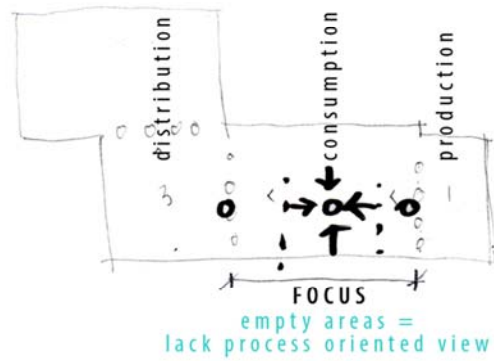
4.4.2.1

ITERATION 1: SUMMARY

multiple kitchens
VARIOUS ACTIVITIES

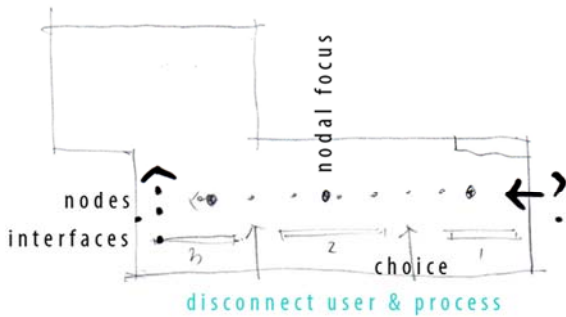


central kitchen
THE FOCUS ON CONSUMPTION



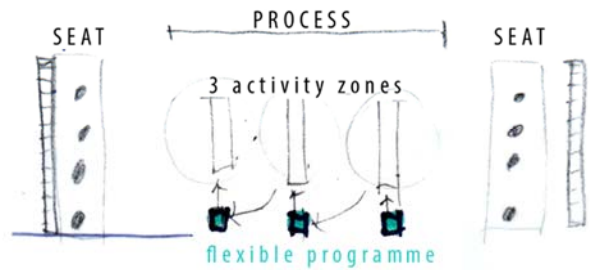
3 nodes

DIRECTIONAL ACTIVITY



2 systems

THE WORKTOP & THE FEATURE



REFLECTION

a process oriented movement is practiced yet lacks simplicity in the spatial quality

consider:

*flexibility of the worktop or display
integrated seating*

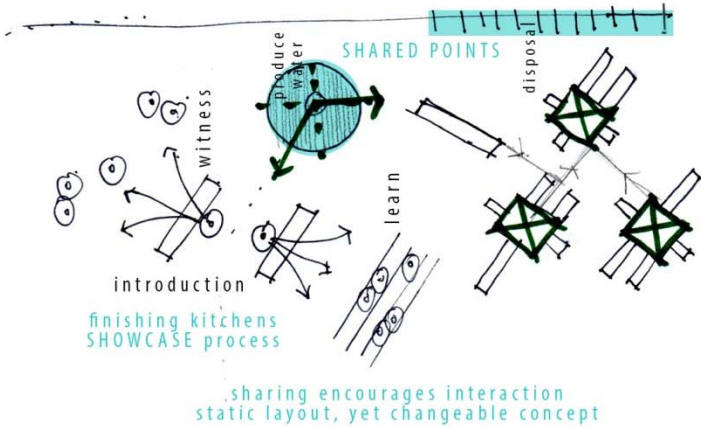
Diagram 4.4.2.1: Summary and reflection on iteration 1

4.4.2.2

ITERATION 2: SUMMARY

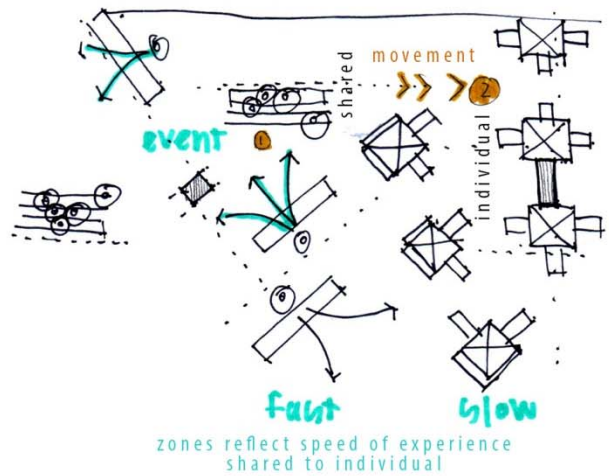
sharing structure

NODES SUPPORTING THE STORY



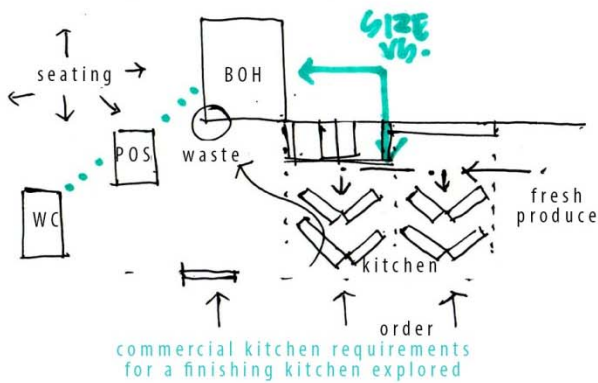
seated to speed

DEMARCATED MOVEMENT ZONES



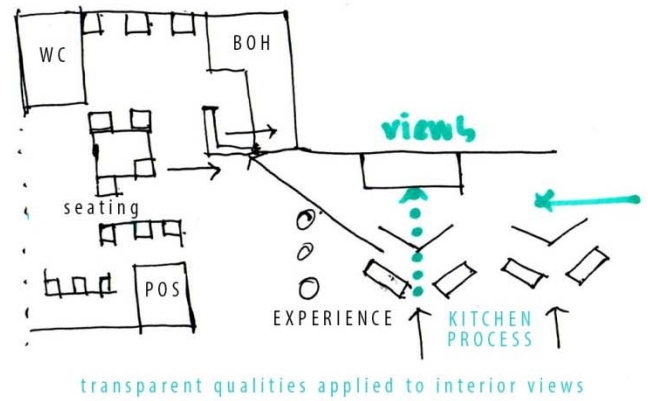
technicalities

REQUIREMENTS & CONCEPT



process orient view

MENU DESIGN APPLIED



REFLECTION

demarcated zones are designed but still propose to be both changeable/adaptable and inviting

intimate user encounters are not yet defined
various views, connections and thresholds need to be expressed through sharing principles or details
the story of the movements and senses are unclear

Diagram 4.4.2.2: Summary and reflection on iteration 2

4.4.2.3 ITERATION 3

This section defines the final development of the spatial layout. Conceptual ideas are explored with various sketches (*diagrams 4.4.2.3.A & 4.4.2.3.B*). As result of the shortcomings in iteration 1 and 2 the following aspects are addressed:

- A. Define the story of the interior.
- B. Finalize the layout.

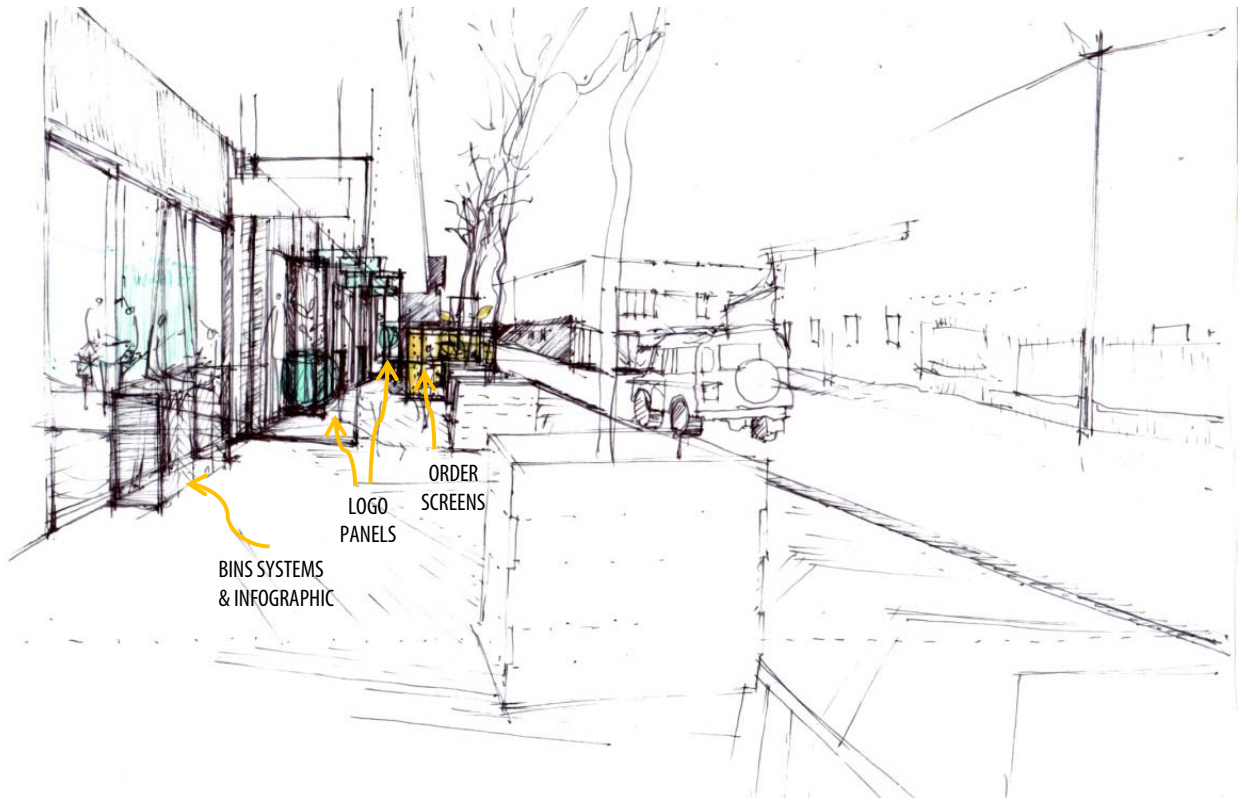


Figure 4.4.2.3.A: Sketch representing exterior urban façade intervention

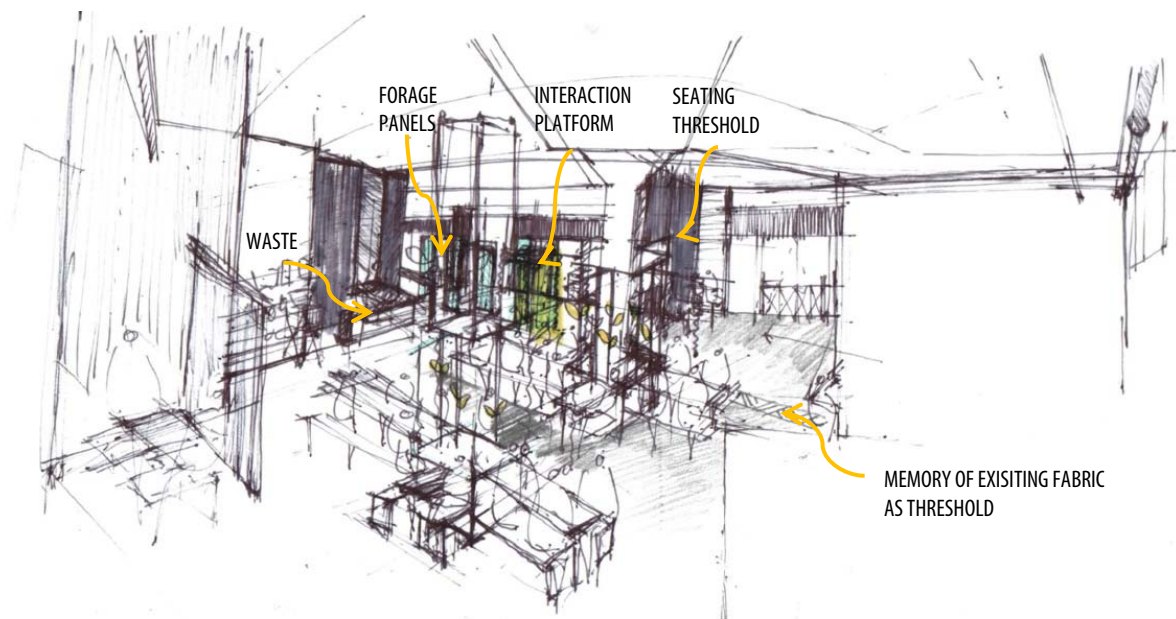


Figure 4.4.2.3.B: Sketch representing interior seating area view



STORY

MOVEMENT OF THE EXPERIENCE

See intervention on the exterior by means of logo-facade panels. Panels act as a branding element.

- 2 Receive a menu from a staff member when entering the defined exterior space.
- 3 Move to discussion area. In this zone the users will decide and place orders on a digital station. (The order will be based on a colour palette as seen in the seasonal menu).
- 4 Move into the interior through either of the two access routes. At this *threshold* the programme will be introduced by walking through digital representations of the act of growing. The user's senses will be enticed witnessing displays of the various seasonal ingredients.
- 5 Pick-up the order from the defined finishing service interface, demarcated with signage. The user is encouraged to witness the preparation process, with transparent views towards the pre-prep, prep and fresh produce stations as well as the emphasized service wall (with equipment).

CAPTURE THE ESSENCE:

ELEMENTS WHICH DEMARCATÉ FORAGING & EATING IN A TRANSPARENT AND RAW WAY

Sit-down (slow service, yellow) users will receive a service board,
On-the-go (fast service, pink) users will receive a paper bag.

- 6 **ACCESSIBLE INDOOR FARMING**
An infarm zone with vertical farming systems, to forage for the finishing herbs to complete their order (as indicated in the menu). These systems are also integrated into the seating area.

INTERACTION PLATFORM

A seasonal art installation for user-interaction (upon exit).

- 7.1 **FAST SERVICE:** Exit. Can sit down in outdoor seating area.
- 7.2 **SLOW SERVICE:** Seated to a type (distinct in function, look & feel). During consumption users will interact with other people and the farming systems, whereafter used elements will be taken to the open waste and back of house area for recycling. Exit.
- 8 Point of sales.
Receive a seasonal recipe and seeds, to encourage sustainable eating and urban farming at home.

Intended user engagement and sensory interaction towards and within the space.

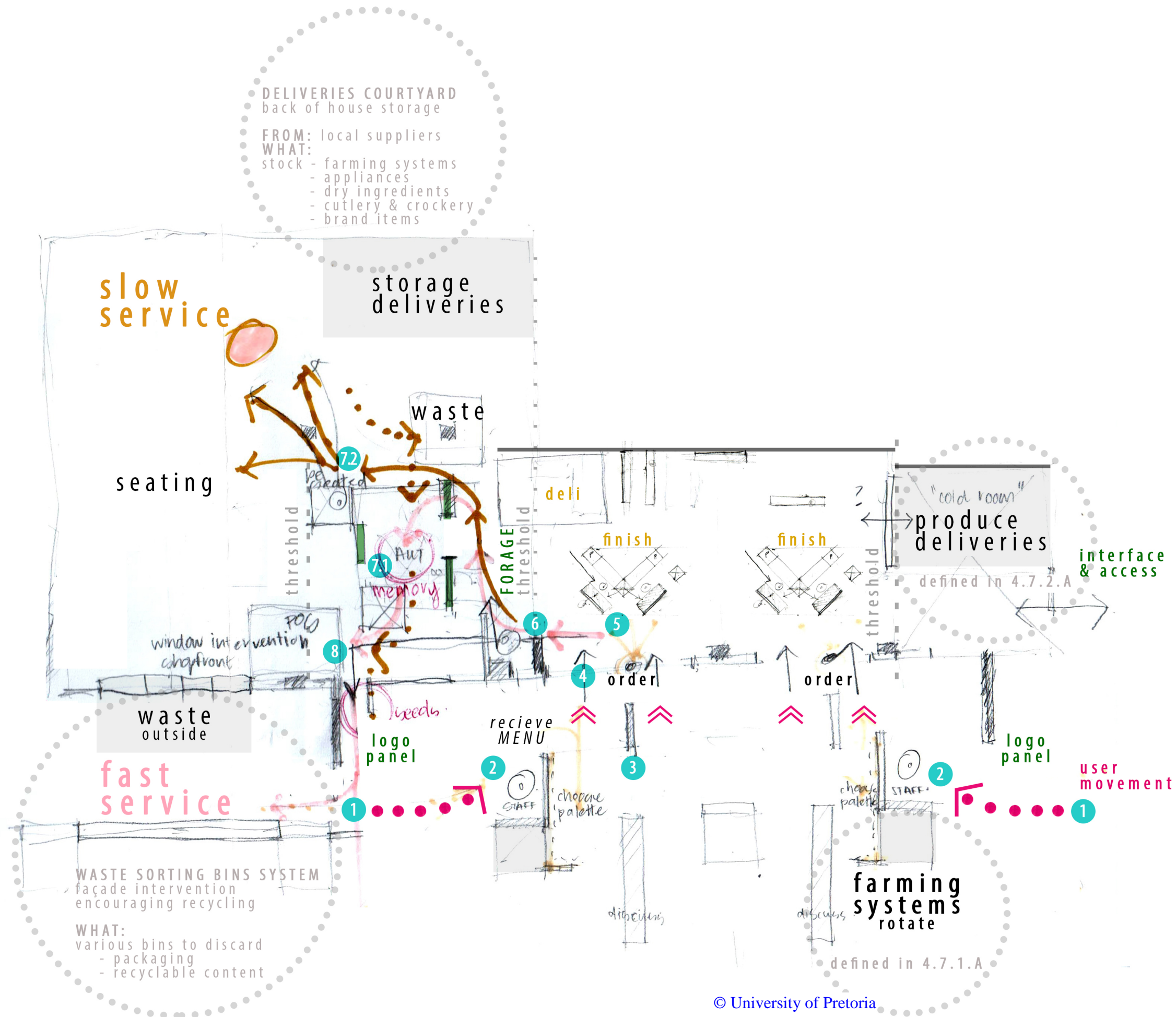
SYSTEMS

Contribute to the operation of the restaurant (separately zoned but integrated).

witness indoor application of a vertical farming system

ACCESSIBLE & CONNECTS USER TO THE PRODUCTION PROCESS OF EATING

Requirements:
- rotate tubes to outside
- water articulation & growlights



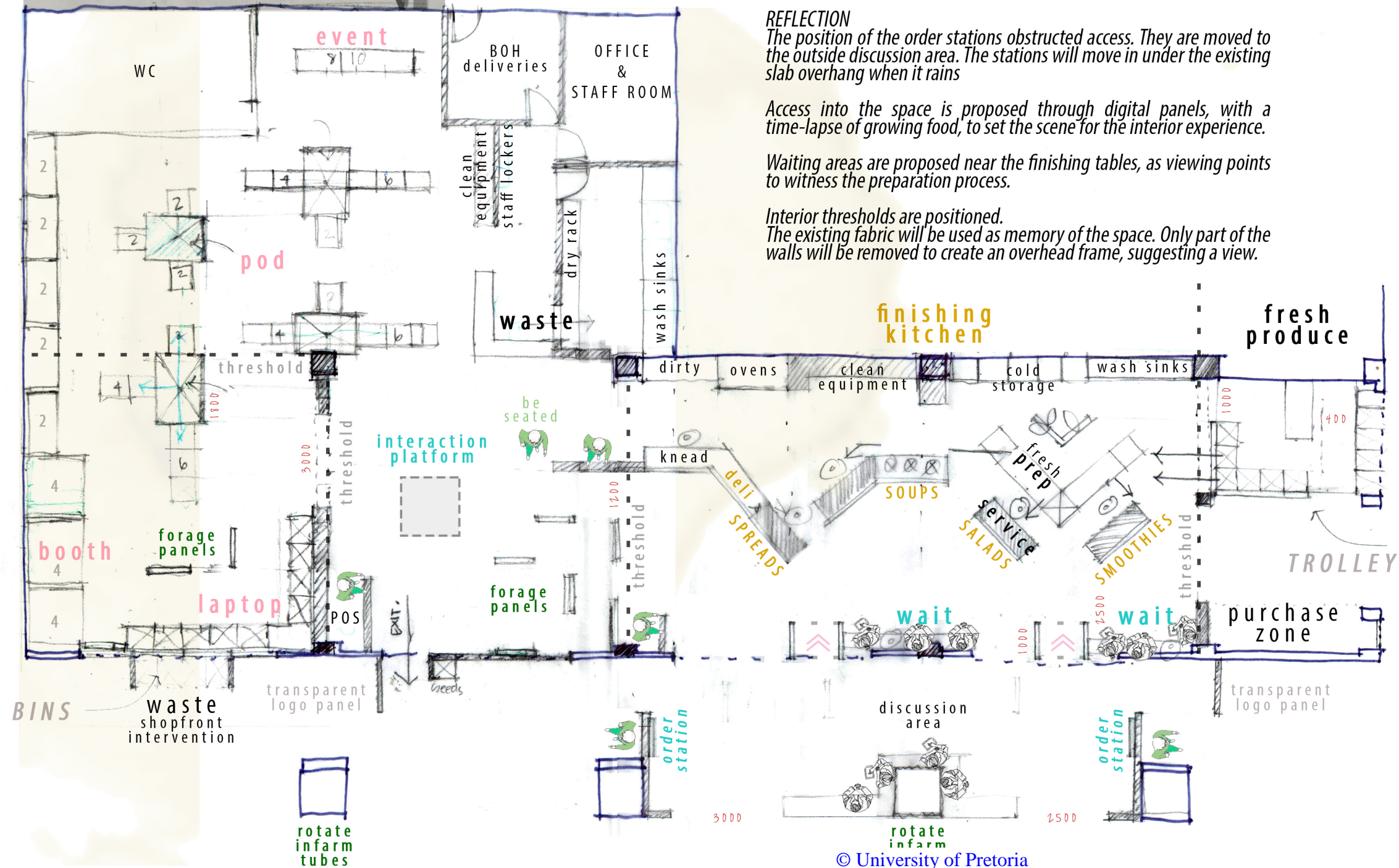
The story will be captured by considering both the movements and the sensory interactions (refer to 4.5). The intended series of movements are illustrated and described.

This iteration also defined four systems which will contribute to the operation of the restaurant. The systems are defined (demarcated in grey).

NOTE: A sequence of vignettes visually illustrates the movements of the story (refer to chapter 5).

the story
MOVEMENT OF THE EXPERIENCE

Diagram 4.4.2.3 (A)



REFLECTION
The position of the order stations obstructed access. They are moved to the outside discussion area. The stations will move in under the existing slab overhang when it rains

Access into the space is proposed through digital panels, with a time-lapse of growing food, to set the scene for the interior experience.

Waiting areas are proposed near the finishing tables, as viewing points to witness the preparation process.

Interior thresholds are positioned.
The existing fabric will be used as memory of the space. Only part of the walls will be removed to create an overhead frame, suggesting a view.

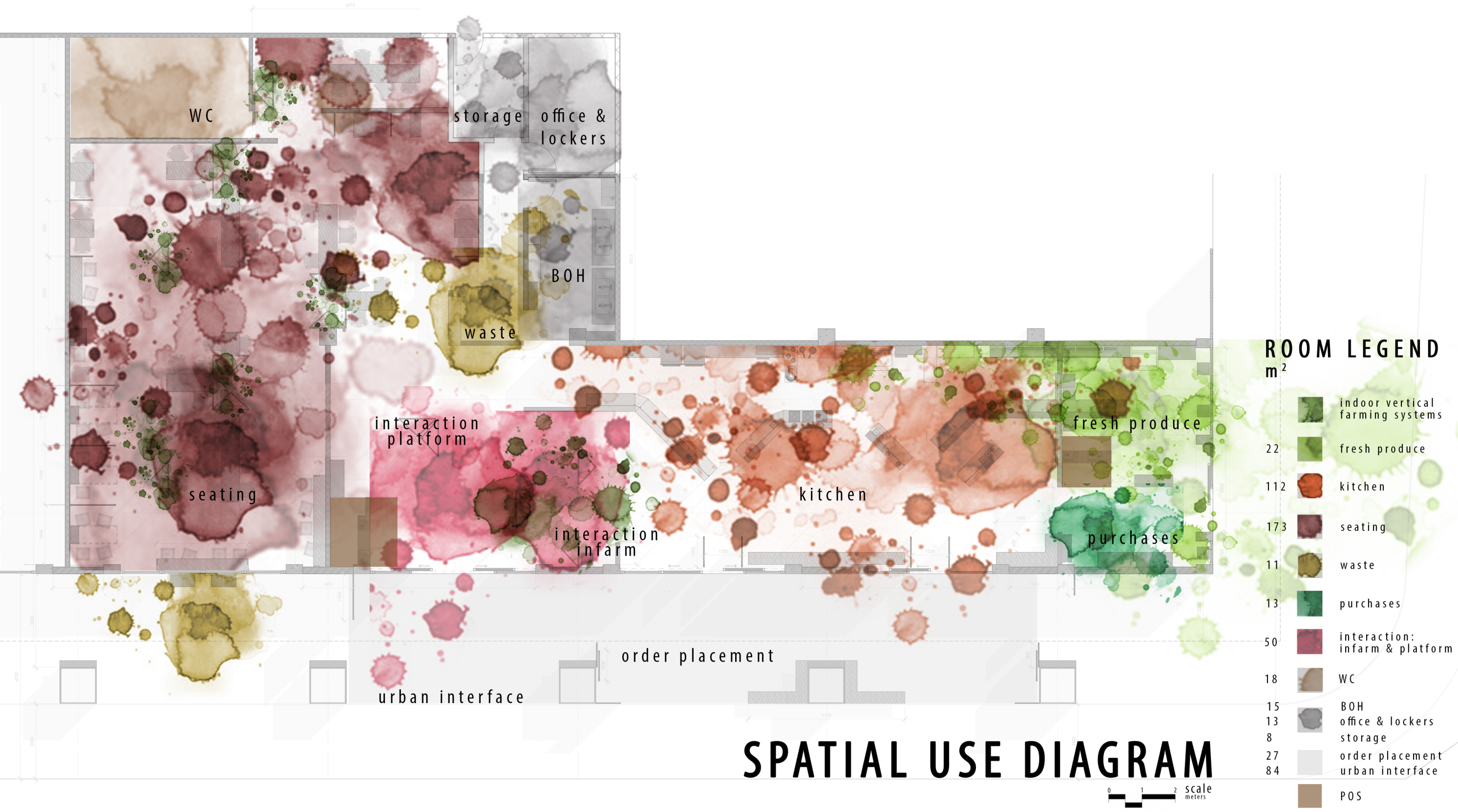
The spatial layout of the kitchen is revisited as it was too static and linear. Interesting angles will create a more dynamic space. The following aspects were also considered; the movement of the staff, proposed grouping of the kitchen functions and the placements of services against the structural wall.

Four seating types are proposed, namely; pod, booth, laptop and event. The size, table height, chair type and environment in which the table is placed, will define the type of seating.

This iterative process is concluded with a spatial use diagram (diagram 4.4.2.3) and a demolition sequence (diagram 4.4.2.4). The layout is finalized in Chapter 5.

final layout

Diagram 4.4.2.3 (B)



SPATIAL USE DIAGRAM

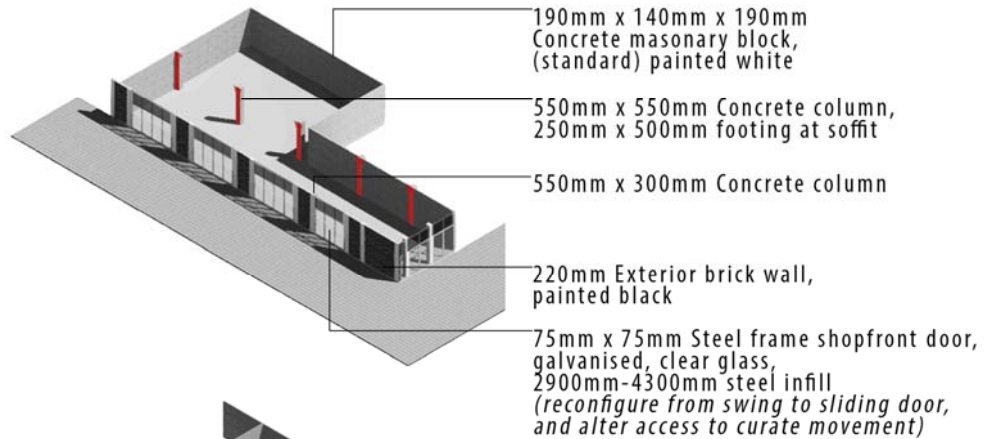
0 1 2 scale meters

SPATIAL USE

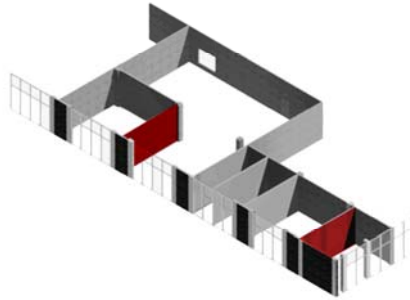
Diagram 4.4.2.3:

DEMOLITION SEQUENCE

1. EXISTING FABRIC PRESERVATION

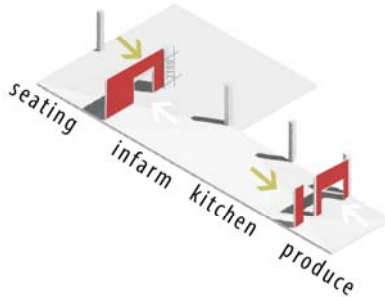


2. STRIPPING BACK EXISTING WALLS ENABLING WORKS



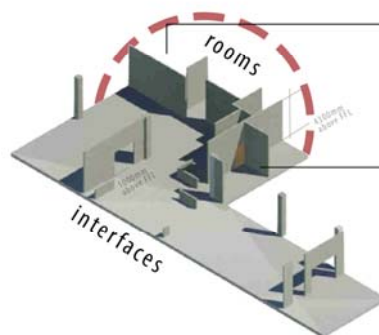
Remove the interior walls which prevent conceptual ideas and implementations.

3. MAKING GOOD TO CREATE VIEWS & THRESHOLDS RECONSTRUCTION



Partial demolition of existing walls, creates both a memory of the existing fabric as well as views and thresholds between the different spaces.

4. NEW WORKS FOR THE PROPOSED INTERVENTION



Drywall partitioning for WC, material repurposed as found on site, height: 2300mm

190mm x 140mm x 190mm Concrete masonry block

heights: 1000mm from FFL, POS, waste and staff interfaces

4300mm internal walls, from floor to ceiling

Diagram 4.4.2.4: Demolition sequence for the proposed programme (Interpreted by author based on the degrees of alteration (Scott, 2008))

4.4.3 REQUIREMENTS

Analysis of the final layout and design proves to achieve and exceed the spatial requirements (refer to section 4.3). The various spatial areas of the kitchen, the proposed number of kitchen staff, the occupancy number of the seating area and the circulation space of the users within the kitchen area are illustrated (diagrams 4.4.3.1 & 4.4.3.2 with reference to diagram 4.3.3).

The high percentage circulation space for users within the kitchen area supports the process oriented view notion. Users are encouraged to dwell in this space, in order to witness and engage in the preparation processes.

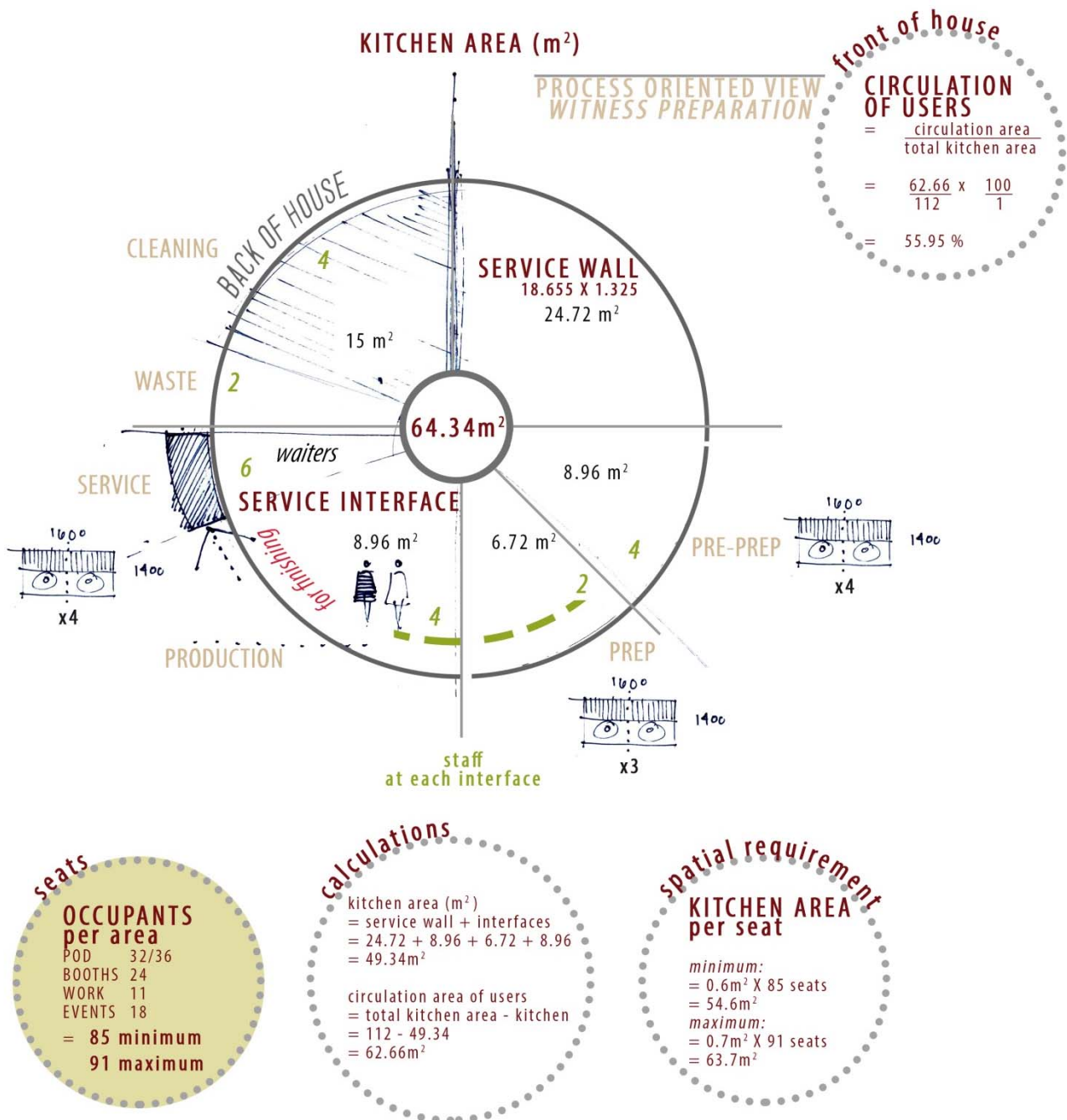


Diagram 4.4.3.1: Illustration with calculations, indicating how the proposed programme achieved spatial requirements



CLASSIFICATION

**MID-MARKET RESTAURANT
LIMITED MENU
FOOD SPECIALITY**
80-100 SEATS

space allowance: 1.5-1.8 m²/seat
kitchen area: 0.6-0.7 m²/seat

minimum
requirement: 0.6 x 80 seats
= 48 m²



ACHIEVED

**MID-MARKET RESTAURANT
LIMITED MENU
FOOD SPECIALITY: RAW & ORGANIC**
85-91 SEATS

seating area: 173 m²
space allowance: 173/91 seats
= 1.9 m²/seat

kitchen area
total: = 112 m²
(staff & user interaction areas)

minimum
requirement: 0.6 x 85 seats
= 54.6 m²

kitchen area: = 64.34 m²



Diagram 4.4.3.2: Summary of the minimum requirements achieved

4.5

THE SEQUENCE OF SENSORY INTERACTIONS

The movement and different concepts of the sensory interactions are defined. The layout curates the sensory experience and heightens at certain points of the consumption process. A deliberate spatial purpose for interaction is created through the methods of the interventions. The differentiations of the senses will constantly engage the user with the story (referred to in iteration 4.4.2.3.(A)) and the essence of the proposed programme (refer to section 4.1.3).

The intended sensory experience is illustrated (diagram 4.5.1).



Diagram 4.5.1: Conceptual illustration of the sensory experience

The perceptions of the various senses are divided into three strategies, described as; to expose, to share and to interact (*diagram 4.5.2*) (refer to a visual illustration in *diagram 4.5.1* and an explanation of the sensory experience in *diagram 4.5.3*). These strategies entail the following:

- EXPOSE
The initial encounter with the interior and the various interfaces introduces the senses **individually**. It exposes the three phases of the eating process in a sequence.
- SHARE
With the movement to the seating and service area, all of the senses will be engaged in a **shared** yet intimate way. The success of the experience relies on the connection of the spatial quality, design elements and the people occupying the space.
- INTERACT
The users will interact within an **expressive** interaction platform upon exiting. This spatial zone symbolically encapsulates the essence of the programme.

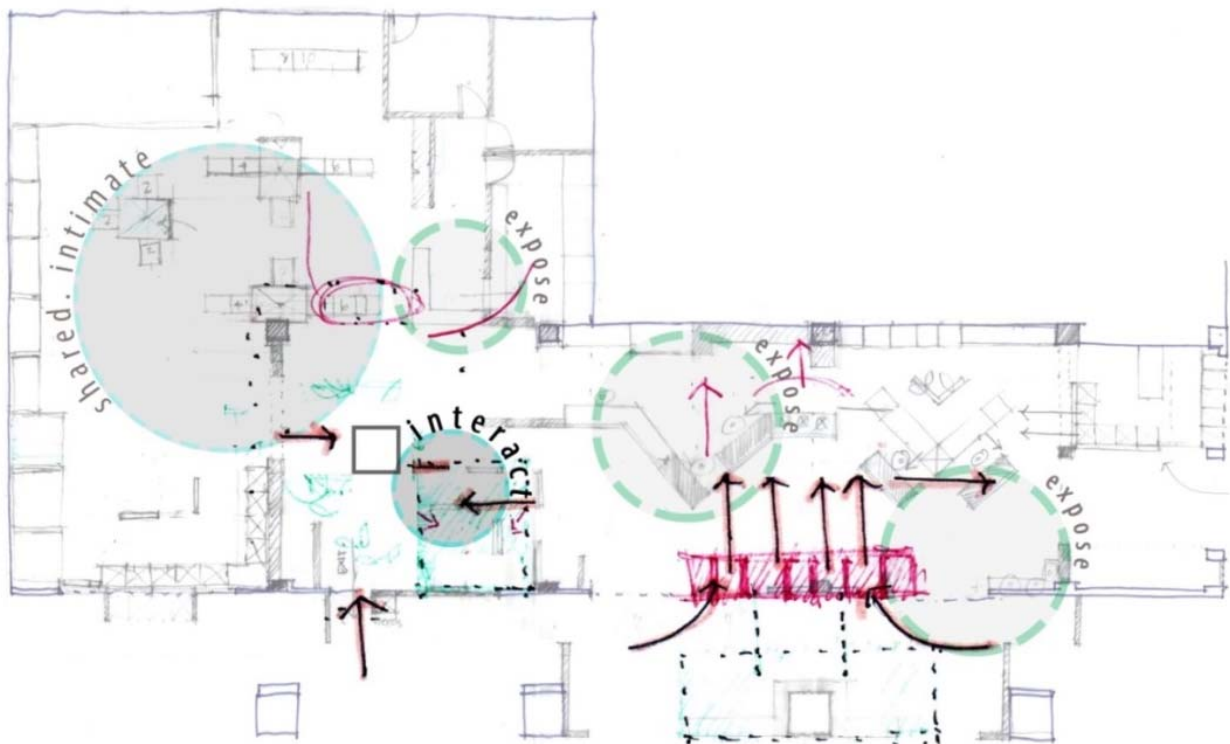


Diagram 4.5.2: Three strategies of the sensory experience



With approach to the intervention on the urban façade, users will touch the menu and order screen while amongst vertical urban farming systems.



When entering the interior thresholds users will be visually enticed.

Elements of growth will stimulate the concept of the programme. Growth is represented in the digital panels with a time-lapse of growing plants as well as in the structural forms of the exposed preparation and service interfaces. The neutral backdrop will emphasize the seasonal colours of the produce.



Supplementary to the prominent visual quality, users will smell earthy scents of the raw produce and the aromas of the preparation of food.



After the user has witnessed the process of their order at the service interface, they will move through the infarm-area. They will touch and engage with the indoor farming systems by foraging for herbs.



Upon exit, users will engage in the interaction platform, by being expressive.

All of the senses will be heightened in the seating area. It is positioned around the indoor farming systems to directly engage the eating process with the growing process.



Taste is introduced in the seating area
Taste will be enhanced by:

- mood lighting and strategies
- seeing emphasized colours of the seasonal palette in the meals
- the demarcation for the crockery
- smelling the food aromas
- touching of herbs
- engagement with the edible cutlery

The combination of people talking, crunchy elements being chewed, the sip from cups and the dripping water from the farming systems will lastly express natural sounds.

Diagram 4.5.3: Explanation of the sensory interactions, experienced individually and shared

*“All the senses, including vision, can be regarded as extensions of the sense of touch – as specialisation of the skin. They define the interface between the skin and the environment”
(Pallasmaa, 2005:42).*

Spatial meaning is primarily expressed by both seeing and touching. The sense of touch captures the programmes’ concepts for a sustainable lifecycle (diagram 4.5.4). Visual connections of the brand identity, materials and different lighting types will create the mood. These connections will portray a sense of transparency and changeability to link with the programme’s process-oriented-view concept. The interfaces as well as the touching of the farming systems will enhance the user interaction.



Diagram 4.5.4: Conceptual illustration emphasizing the intended user interaction experienced through touch

4.6

MATERIALITY AND DESIGN

The detailed design departed with a stance towards materiality. Materials will be implemented in different ways throughout the space, yet portray a distinct interior language. The interior language is inspired by both the character of the context (*refer to 2.3.3 & 2.4*) and the brand image (*refer to 4.2*).

With direct relation to the process-oriented theory (*refer to 3.2.1*), a material is also defined by its process. This refers to the manufacturing of the material, which influences the ergonomics, perception and most importantly the aesthetic look and feel of the material.

The processes of materials can be divided into shaping, joining and the surface (Ashby & Johnson, 2010: 99). The desired aesthetic identity and the environmental impact of the process and material applications must also be considered (Ashby & Johnson, 2010: 131). Each of these processes together with the required character of the programme will be discussed (*diagram 4.6.*).

4.6.1

SHAPING

The shaping of materials is very complex. It requires various attributes such as heating and moulds, usually applicable to manufactured materials (Ashby & Johnson, 2010: 99). The shaping process will therefore not be considered for the proposed programme. The programme seeks simplicity in its materials, without altering its natural state too extensively.

4.6.2

JOINING

This process refers to the assembly of materials. Joining is an expressive quality, either invisible or prominent, implemented for a functional or decorative purpose (Ashby & Johnson, 2010: 99).

The proposed programme will aim to expose joints, which will make the process of the fixing method visible. This quality is defined by the concept of showcasing the entire eating process, translated as the joining of the material elements in this instance. It will further support the programme with its raw character. The exposure of joints also creates the opportunity to showcase craftsmanship. The details will express the specific identity of the crafter and match the creative identity of the context, as definition of the interior identity.

4.6.3

SURFACE

Different surfaces and finishes express a defined aesthetic quality. It also creates a specific perception. A surfaces can be articulated in its' colour, reflectivity, texture and feel. Surfaces are implemented to communicate either a tactile or a visual quality (Ashby & Johnson, 2010: 99).

Surfaces will be used as both a method of communication and wayfinding device within the interior. Different surfaces will spatially manifest the different thresholds or interfaces. The different floor articulations and patterns will subtly guide the users within the space. With regards to the interfaces, interplay between solid and transparent materials will reveal the function and processes.

Various textures for the users to interact with, such as material differentiations, patterns, protruding joints or voids, will also contribute towards the sensory exploration of the eating process (Ashby & Johnson, 2010: 323) (*diagrams 4.7.1.B & 4.7.1.C*).

The aesthetic quality of the proposed programme seeks a natural yet industrial look and feel. A combination of natural materials, such as wood and cork, will be used in contrast to steel. It is important to portray its lifecycle by means of its aging and patina.

4.6.4 REQUIREMENTS

To fit the sustainable approach of the programme, the lifecycle of the materials must be considered (Ashby & Johnson, 2010: 12-13). The lifecycle can be divided into the same three phases as stated in the process-oriented-view theory (*refer to 3.2.1*), essentially considering both the production and disposal of materials. The material certification will further assist in this task.

The materials criteria require the following aspects:

- Natural and renewable materials will be used. This approach fit the raw stance of the concept. It will minimize energy utilization and by-products disposed during manufacturing.
- Adaptable and simplistic qualities are required for the use of the materials. By prolonging the function of the materials in various manners, the lifecycle will be extended.
- It is important to consider the recyclability of materials. To minimize the environmental impact, it is proposed to primarily re-use reclaimed or recycled materials such as metals and natural elements of wood and cork. Glass and plastics are high in recyclability but have a negative environmental impact. They will therefore only be implemented on small scales for their transparent surface quality.

The joining of these materials must also portray an environmentally sensitive approach. It is suggested that methods such as sewing, rivets, staples and threaded fasteners fit this requirement (Ashby & Johnson, 2010: 280-283). These methods also complement the aesthetic identity by portraying craftsmanship and structural qualities (*refer to the exploration in diagram 4.7.1.C*).

An innovative material use will be explored within the design development. It is the use of Xanita x-board, a recyclable honeycomb cardboard, as a structural core material (*refer to diagram 4.7.1.C, seating detail 2 & 3 in chapter 5, and appendix B for specifications*). The material is furthermore proposed for the signage panels (*refer to kitchen interface detail 2*), and as medium to create the interaction concept (*refer to interaction platform*) and as a lighting luminaire for the grow lights (*refer to infarm detail 1*).

To further prolong the disposable materials of the programme, such as the packaging or organic waste, a recycling system is proposed (*refer to section 5.4.B*). A simplistic shopfront intervention will encourage the sorting of waste into four groups, namely; plastics, glass, natural and metals. The system will function as a self-sorting and drop-off service. It will further enhance the community of the urban context, by acting as a buy-back scheme or collection point for informal recyclers.

MATERIAL OF A PRODUCT

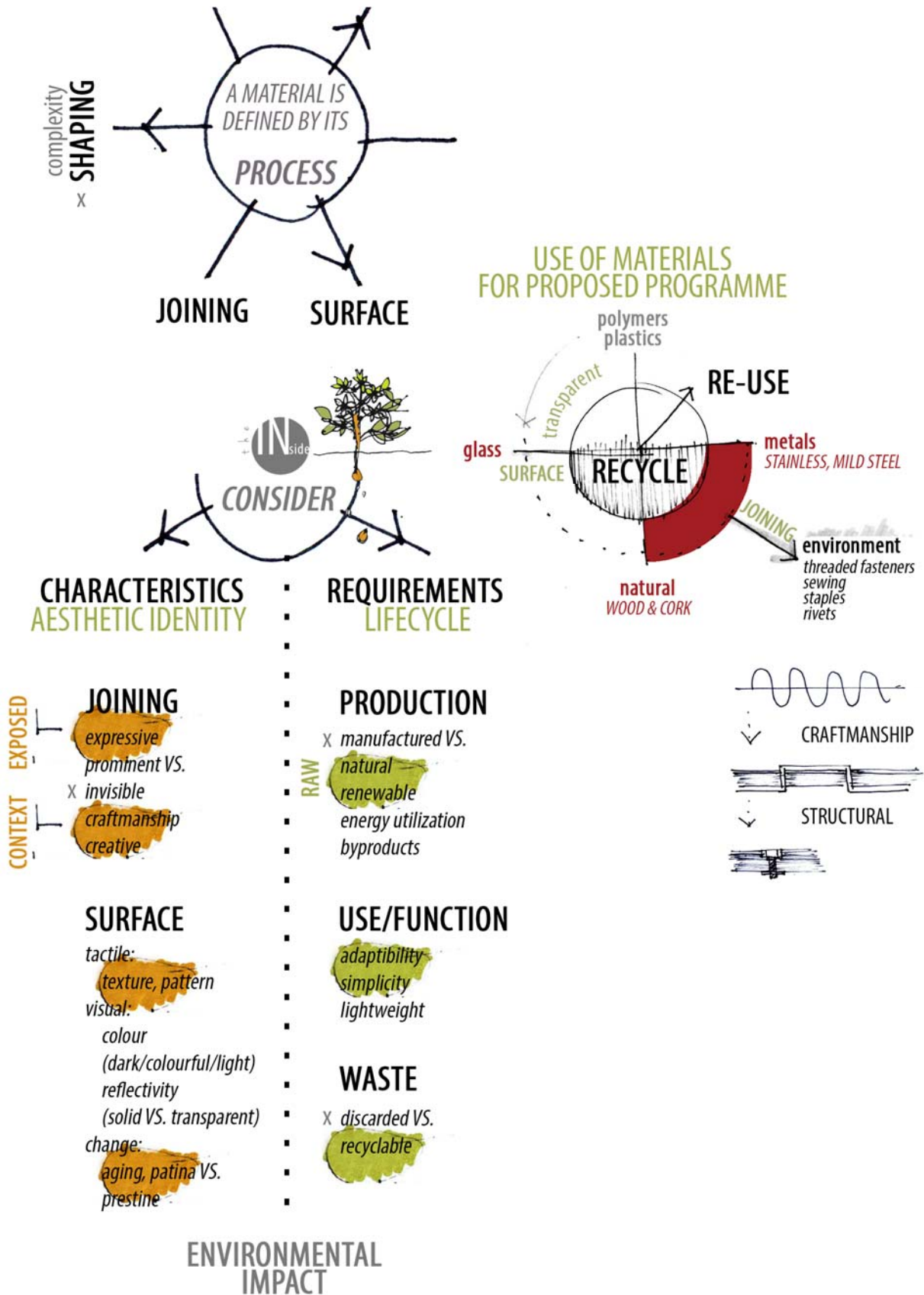


Diagram 4.6: Exploration of material characteristics and requirements

4.7

THE DESIGN DETAIL FOCUS

An outline of the design focus is compiled (*diagram 4.7*).

The experiential focus of the proposed programme identified the areas for detailed design development. The elements and concepts for the spaces are generated and explored, where after it will be defined and detailed through technical development.

DESIGN DETAILS

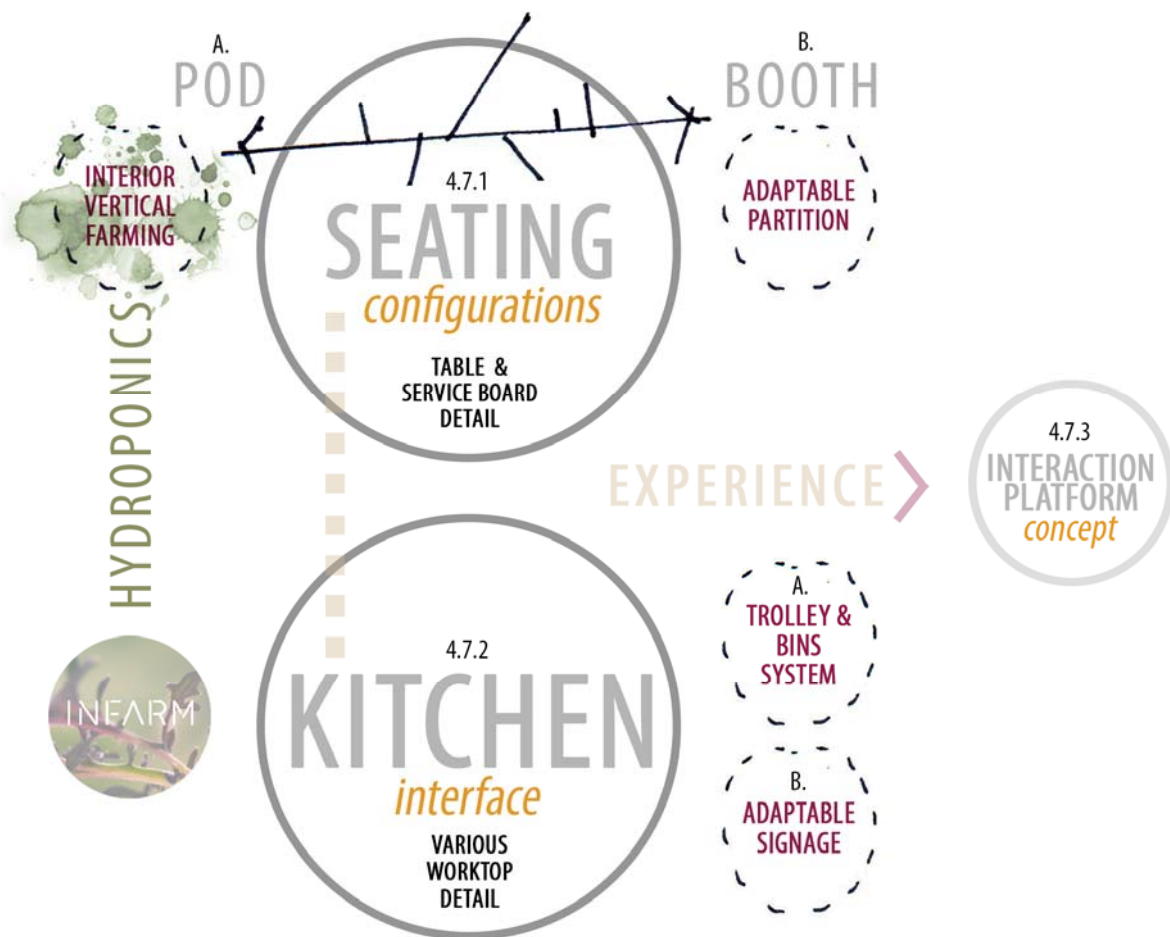


Diagram 4.7: Outline of the design focus

4.7.1 SEATING CONFIGURATIONS

Different types of seating and their articulations are explored. The pod and booth configurations are conceptually developed (*diagram 4.7.1.A*).

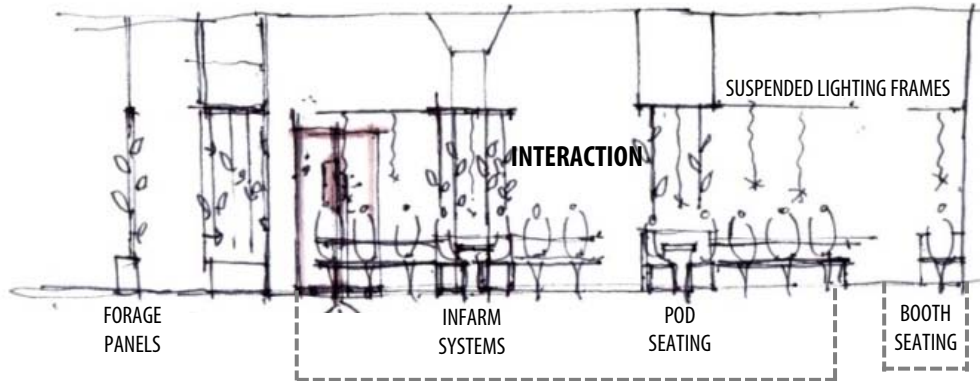
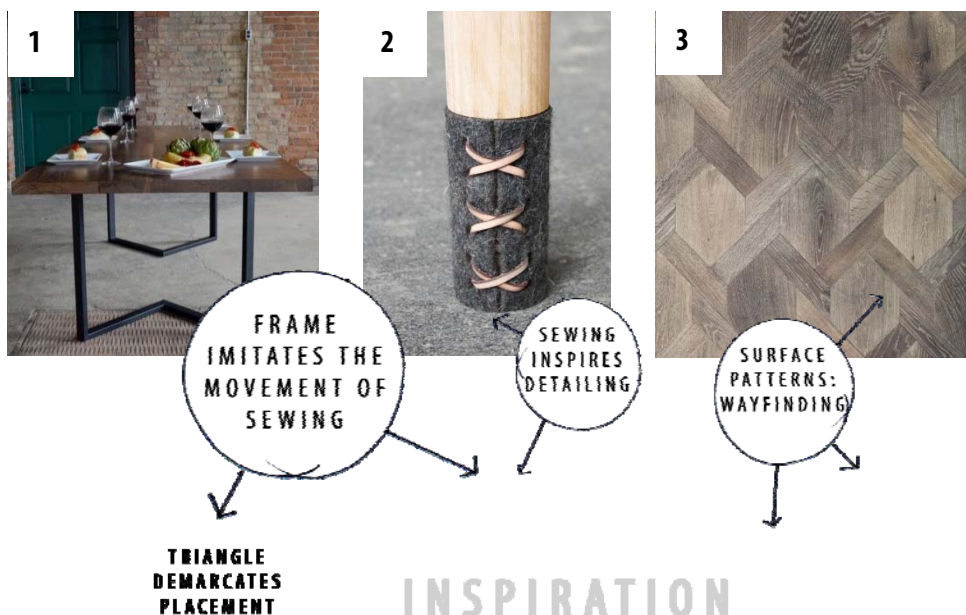


Diagram 4.7.1A: Sectional diagram of seating configurations and infarm systems

The seating exploration commenced by conceptualizing a frame and a table. It was further defined into metal and wood when considering the material use. As part of the dissertations' investigation, both the surface material and the joining of elements must suggest a sustainable method (*refer to 4.6*). The concept of sewing was adopted as a creative yet sustainable joining method to resemble, implement or take inspiration from. It informed the details. The following images were used as inspiration;

1. The structural frame of the table imitates the movement of sewing (going in and out). The triangular form of the frame makes the support stronger. It will also be used to demarcate the table placement (*Figure 4.7.1.1: Table frame support (MapleCityFurniture, 2012)*).
2. An application of sewing inspires detailing (*Figure 4.7.1.2: Sewing detail (Erz & Co, n.d.)*).
3. The resemblance of a sewing pattern inspires the finishing of the surfaces. Patterns can be used as an indication for wayfinding (*Figure 4.7.1.3: Floor tile pattern (Shastri, 2014)*).



The two seating configurations are conceptualized (*diagram 4.7.1.B*). Both seating areas will implement a screening system to create an intimate eating area with the perception of privacy. The areas will be further articulated with the ceiling and various lighting strategies (*Chapter 5*).

The user experience will be attained in the interface of the table surface and the aiding tools of the eating process. The table and the service board concepts are generated to embody the experience in both of the configurations. These detailed elements will also represent the specific brand intent.

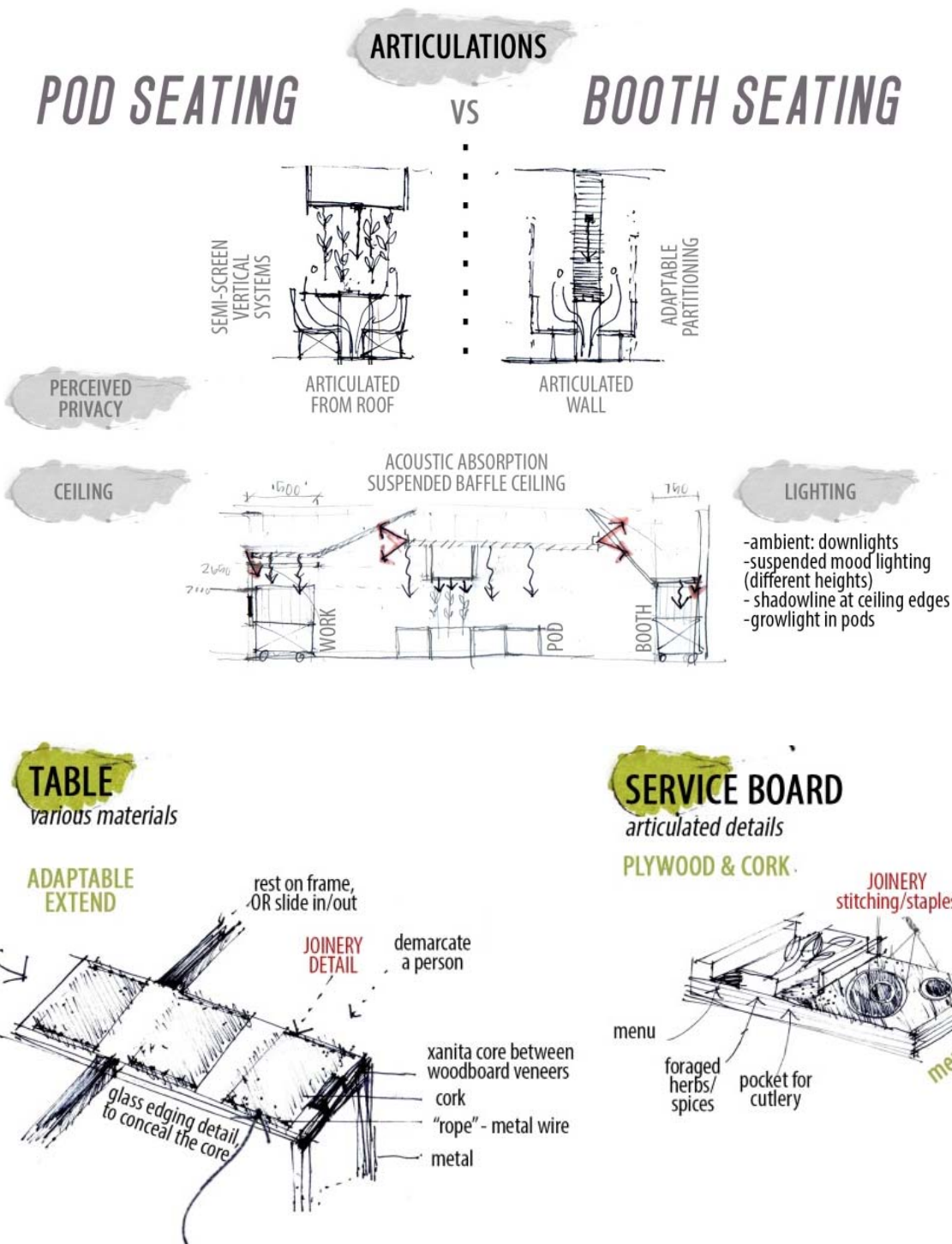
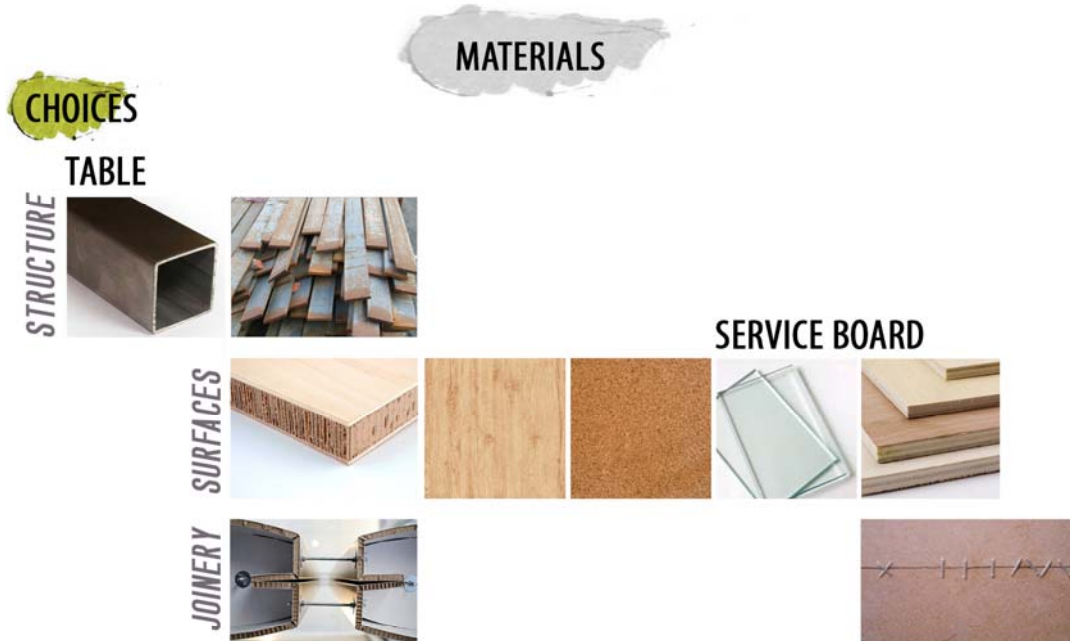


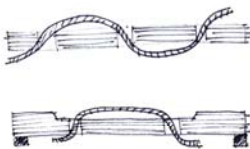
Diagram 4.7.1.B: Different articulations and similarities of the seating configurations

The look and feel for both the table and the service board are proposed (*diagram 4.7.1.C*), considering the material choices, structure, surfaces and methods of joinery. The joinery of the frame structure, the table surface and the service board will be developed. The proposed materials choices as well as the details will be iterated (*Chapter 5*).

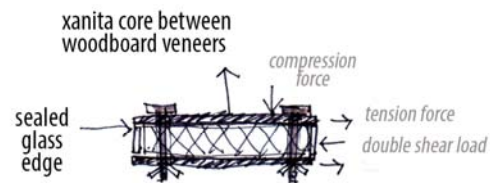


JOINERY DETAILS

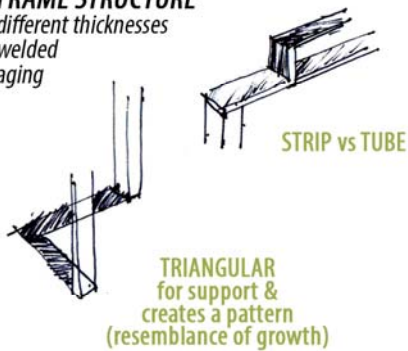
APPROACH TO JOINERY: GENTLE
function with clamping force
non-toxic/no adhesives
threaded: movement of in and out



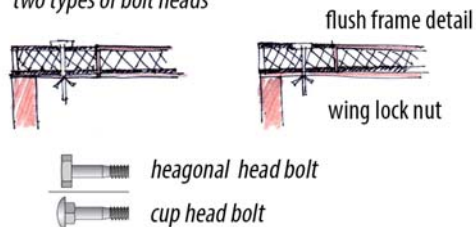
SURFACE TOP OF TABLE
different materials
double lap joints
bolted & knock down fixing



FRAME STRUCTURE
different thicknesses
welded
aging



BOLT DETAIL
standard OR countersunk
two types of bolt heads



SERVICE BOARD
translate the joinery approach
staples detail



Diagram 4.7.1.C: Material choices and joinery details for the seating configurations

4.7.1.A POD SEATING CONFIGURATION

The contribution to the discipline of interior design is integrated farming systems. These systems will form the feature element of the pod seating configuration (*diagram 4.7.1.D*). It will also be implemented as loose foraging panels.

The pod seating configuration refers to tables placed around a frame structure. The farming systems, proposed as hanging vertical hydroponics, will be placed on a suspended frame structure within the pod area. It intends to make the growing process accessible and part of the eating process. It will also function as a semi-screened partitioning device between the tables.

The systems will be developed in terms of its placement, materiality, water articulation and the use of grow lights. It must also explore adaptability in its method of joining. The pipes must be able to dismantle and rotate to the outside or within the interior, to meet the lighting demands of the herbs. The pod seating in itself will be adaptable by making one of the tables expandable.

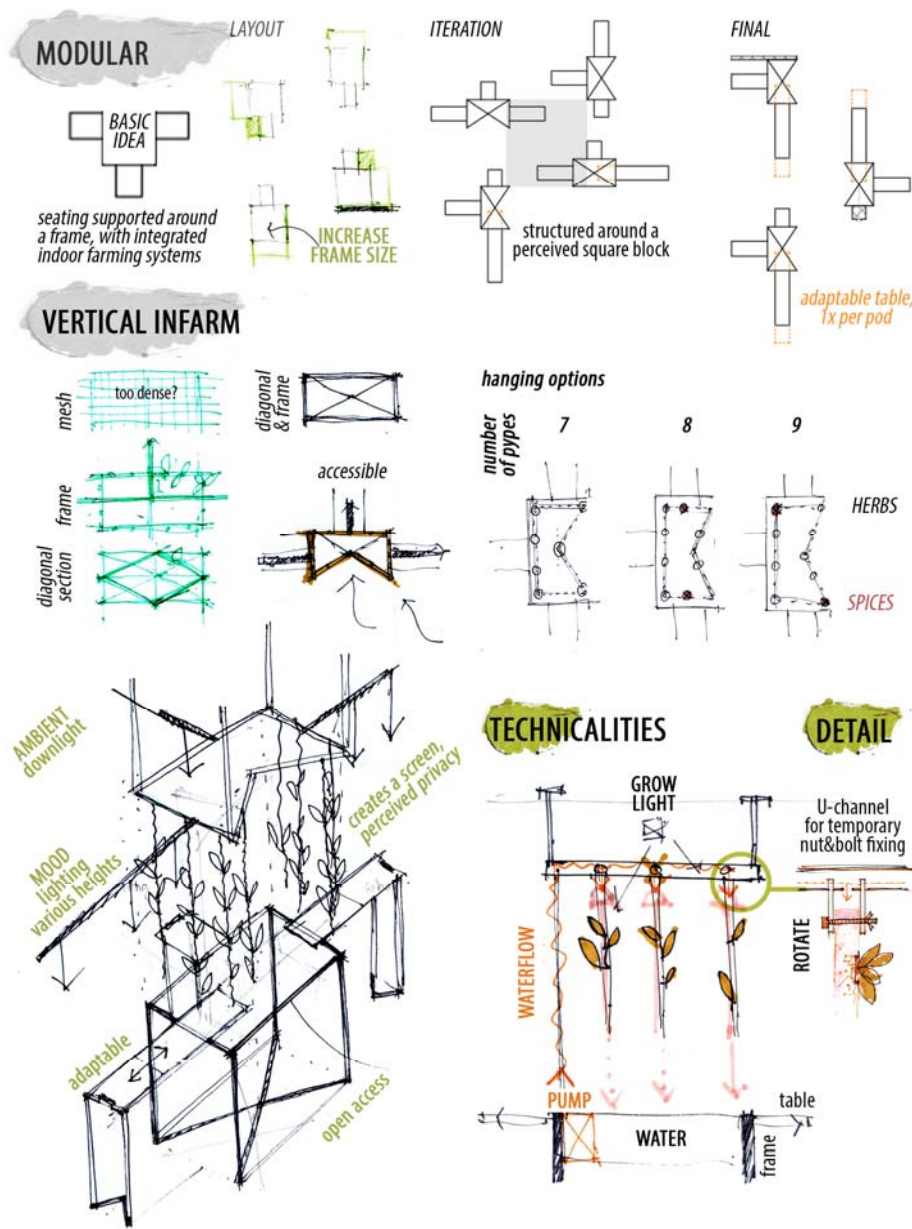


Diagram 4.7.1.D: Conceptual exploration of the pod seating configuration

4.7.1.B BOOTH SEATING CONFIGURATION

The booth seating configuration refers to semi-enclosed areas (*diagram 4.7.1.E*). It will implement adaptable partitioning panels. The panels will create a perception of privacy, make the space more intimate, assign various functions to the space and lastly make the interior spaces expandable. The panels will act as pin-up boards, designed to be personalized by the user. It will be used for either information to educate on sustainability or for creative work and drawings during meetings

Two types of booths are intended namely: the work booth or the standard booth. The work booth will be articulated with an adaptable table, to make the space more functional for creative brainstorming or digital discussions. The standard booth will function as an intimate area for discussions.

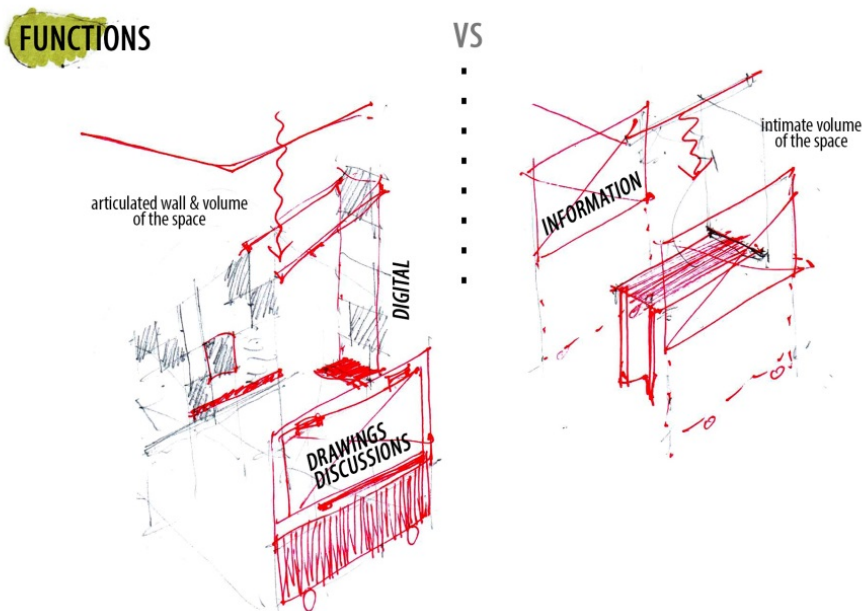
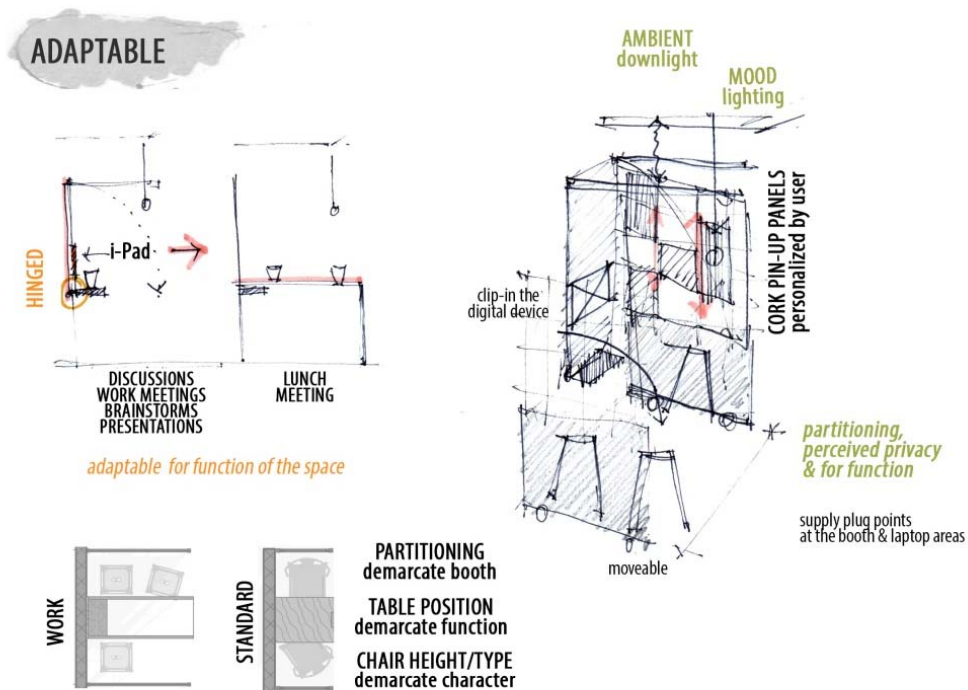


Diagram 4.7.1.E: Conceptual exploration of the booth seating configuration

4.7.2 KITCHEN INTERFACE

The concept of the worktop interface in the kitchen areas are proposed (*diagram 4.7.2.A*). Overhead suspended lighting elements, will be explored above each work station. The various electrical and water services in the kitchen will also be resolved.

The worktop will be used for the pre-prep, prep and finishing stations. The stations will be articulated in different manners and adapted for the required function.

The following characteristics are considered for the interface:

- Transparent surface quality, to make the processes visible.
- Hygienic, durable and water-resistant surface materials.
- Simplistic design for efficiency and to be used for various functions.

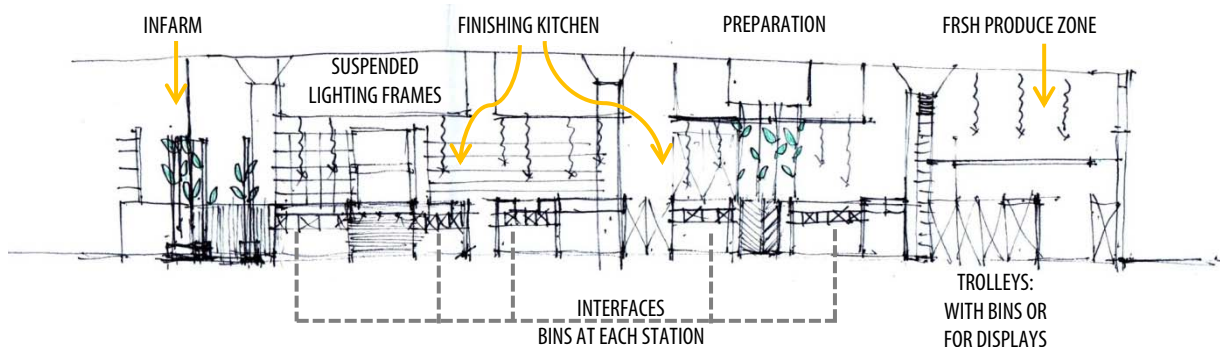


Diagram 4.7.2.A: Sectional diagram showcasing the kitchen interfaces and their articulations

An initial concept for the design was explored in a maquet (*figure 4.7.2*). It comprises of a surface and loose containers, referred to as bins. The bins will be moveable and modular in size but different in surface materials and the amount of sides open. The placement of the transparent surface will showcase the elements; fresh produce, waste or equipment; contained within the bin. The bins will be accessed from two stations, depending on the open side of the bin.

The function of the interface is:

- The staff members must have a flat area to prepare produce or meals on.
- Prepared produce is stored in open-sided bins, placed on a cooling element (*diagram 4.7.2.E*).
- The waste off-cuts will be deposited into a separate closed-sided bin.
- The clean or dirty equipment will also be stored in the bins.

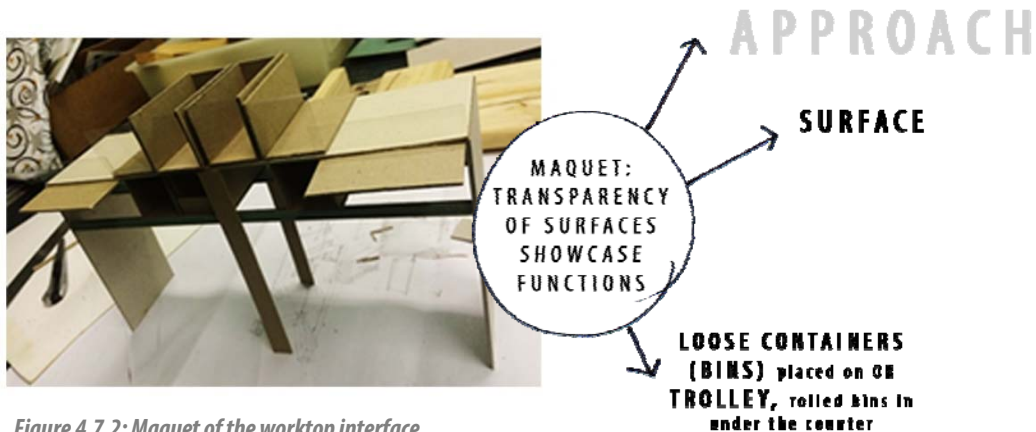


Figure 4.7.2: Maquet of the worktop interface

The worktop interface of the kitchen is explored in its function, form and articulation (*diagram 4.7.2.B*). The various interfaces are arranged in groups, demarcated with a frame structure. The frame will act as wayfinding device, function to emphasize the volume of the interior, connect the floor and soffit surface and lastly house the electrical connections within (*diagram 4.7.2.D*). Task lighting will be applied in different ways onto the frame. The ceiling and the wall panelling on the service wall behind the stations will enhance the spatial quality, placing emphasis on the movement within the kitchen.

A transparent quality is created with the interface arrangement (*diagram 4.7.2.C*), grouping the production and consumption processes. The use of glass screens and the height difference for the display of the raw ingredients furthermore articulate the translation of the two processes.

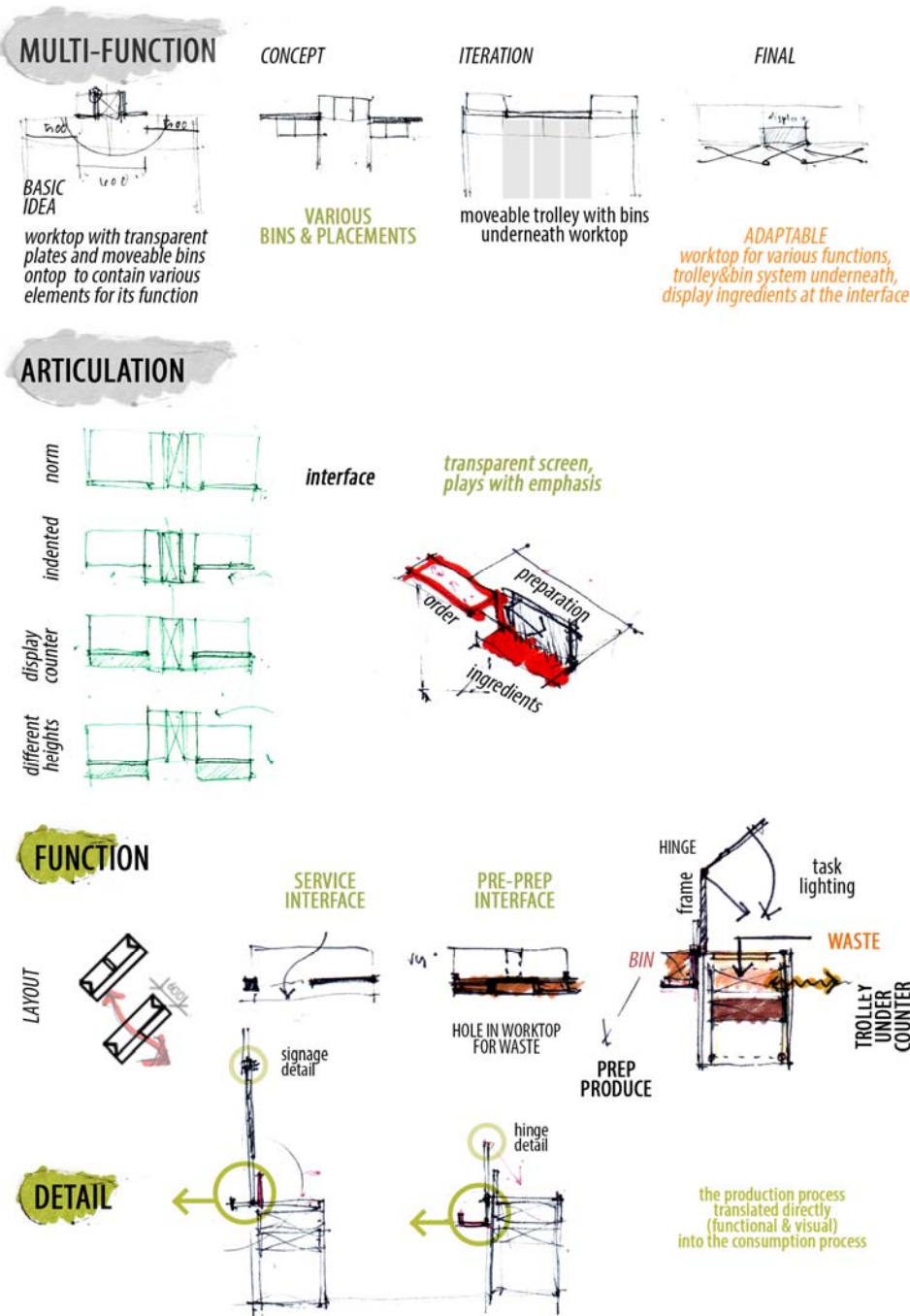


Diagram 4.7.2.B: Conceptual exploration of the kitchen interface

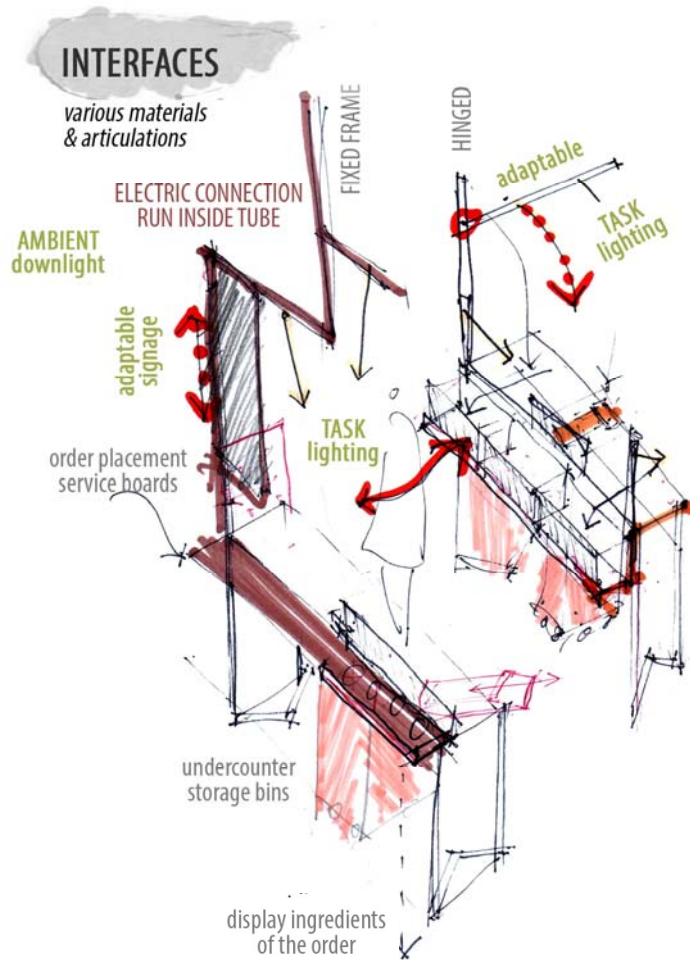


Diagram 4.7.2.C: The arrangement and concept of the kitchen interfaces

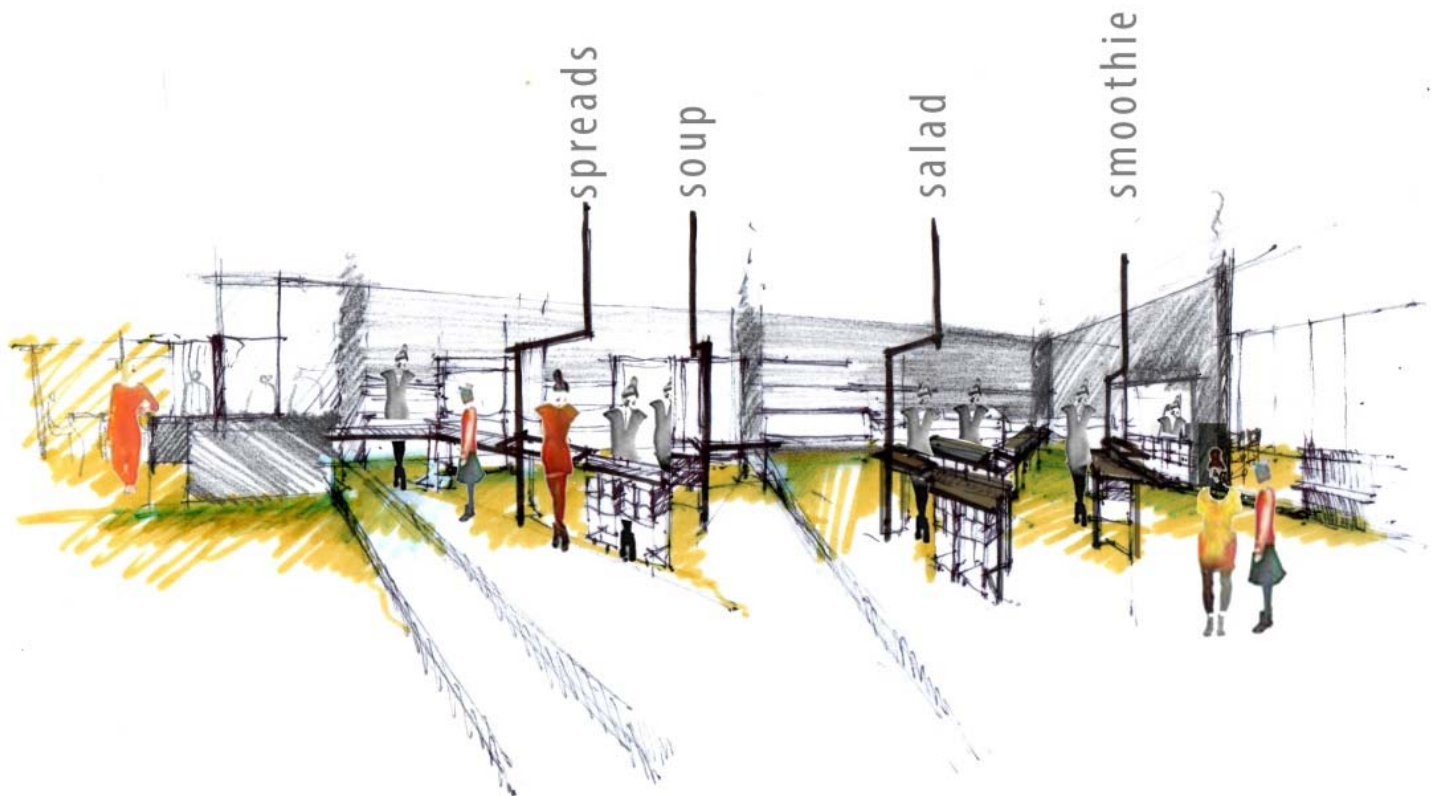


Diagram 4.7.2.D: Diagrammatic illustration of the kitchen articulation and its transparent quality

Systems have been proposed to contribute to the operation of the restaurant (*diagram 4.4.2.3. (A)*). Two systems were introduced to support both the function and demarcation of the various kitchen interfaces (*diagram 4.7.2.E*). These systems have separate applications and requirements but a similar design language. Both systems are dynamic and adaptable, to change in time or in its placement within the interior. A concept for each system is proposed.

4.7.2.A TROLLEY & BINS SYSTEM

Adaptable and moveable trolleys are introduced. The trolleys will hold the various bins used (*diagram 4.7.2.E*). It will assist to receive or exchange the fresh produce needed for the restaurant service. The produce will be from either the proposed urban farm at Sparks School, community farms in the surrounding urban context or from local suppliers in close proximity.

The bins will furthermore support the function of the interface at which it is placed, by either rolling in under the worktop or as freestanding element. The trolley in itself is seen as a functional element which changes the interior environment over time. It can be placed in specific areas to create a barrier, act as a form of display or for storage.

4.7.2.B ADAPTABLE SIGNAGE

A signage panel will be implemented onto the structural frame at each service worktop interface (*diagram 4.7.2.E*). It acts as a spatial wayfinding device by demarcating the various groups of the meals to order. The panel is joined in a structural yet gentle way, in order to be adaptable to change according to season or when the function of the interface intends to change (*refer to kitchen interface detail 2*).

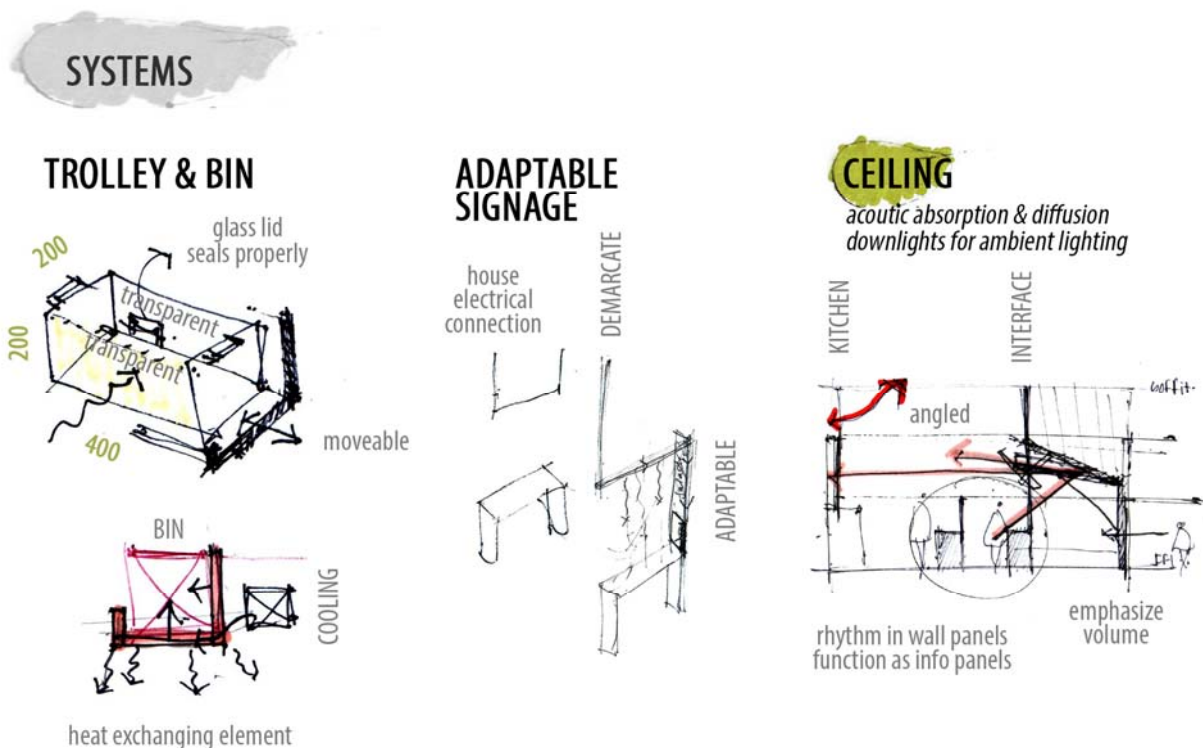


Diagram 4.7.2.E: Conceptual exploration of the systems supporting the function of the kitchen

4.7.3

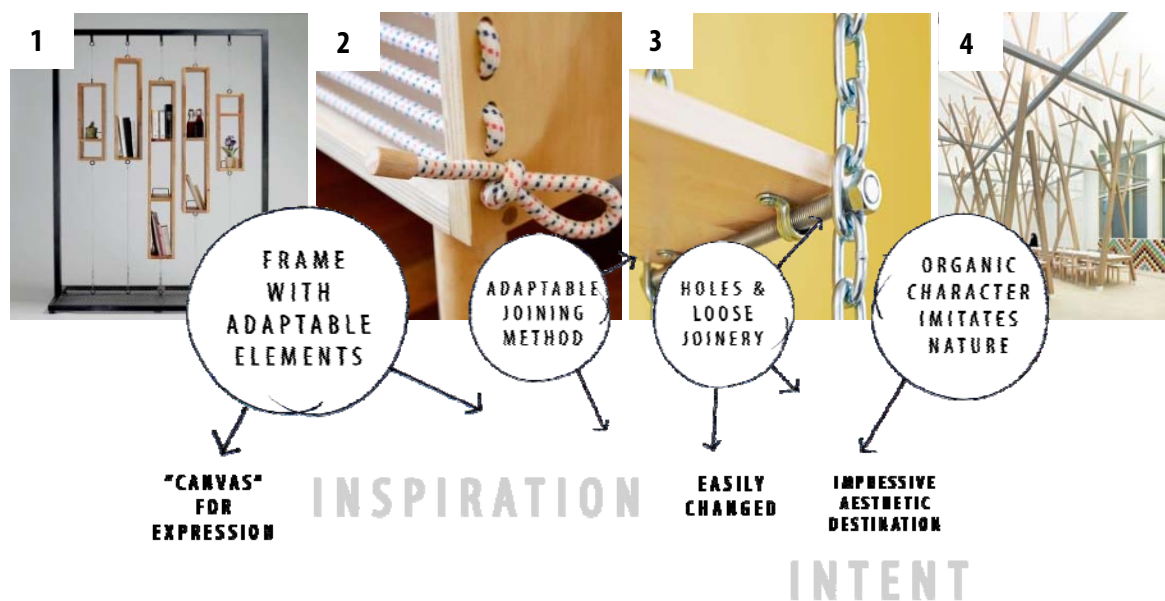
INTERACTION PLATFORM

An additional intervention is a central area for user interaction. The intention of the platform is to engage users with the process of growing in a creative manner., creating an intangible memory when the user's expression becomes a part of the bigger whole of the installation. Conceptual scenarios of the installation and what it can become are explored.

This area must be changeable in order to adapt to the various concepts. Concepts are generated over seasons, by various artists within the context. It is proposed that parts of the installation moves into the surrounding urban context when it changes over season. It will contribute to the creative nature of the Maboneng precinct while intriguing people of *the Inside* brand.

The following images were used as inspiration for the intent, form and materiality of the platform:

1. The platform will act as a blank canvas for an installation. It will spatially manifest when populated with the expressive medium (*Figure 4.7.3.1: Adaptable frame* (Nam, 2014)).
2. Rope and holes are used as an adaptable surface or joining method. This detail resembles a sense of sewing and lends itself to a transparent quality whilst creating a semi-permanent screen (*Figure 4.7.3.2: Adaptable rope detail* (Gonzalez, 2015)).
3. Holes and loose joinery creates an opportunity for change of a structure (*Figure 4.7.3.3: Adaptability of fasteners* (Lowe's, n.d.)).
4. The platform will imitate nature an abstract way (*Figure 4.7.3.4: Aesthetic and organic pole structure* (Archdaily, 2012)). Adaptability will imitate growth when the users interact on it.



The initial conceptual exploration used natural food colours for staining. Final proposals for the seasonal concepts as well as the form of the platform will be expressed within the technical development.



Figure 4.7.3.5: Images of the conceptual exploration using food colour for staining

4.8

INTENDED SPATIAL MEANING

‘Any building for humane purposes should be an elemental, sympathetic feature of the ground, complementary to its natural environment’

Frank Lloyd Wright.

As conclusion to the design development, various spatial experiences are dependent on the intended and perceived meanings.

Semiotics refers to the study of meaning. Meaning is found in signs, which resembles both an apparent functional meaning and a secondary intangible connotation (König, 2015). An interior environment can be seen as a series of signs. The signs are constructed to create a specific spatial expression which transfers meaning. The experience of these expressions and meanings are usual intangible aspects which is dependent on the intention of the designer and the interpretation of the user. Signs can take form within the branding or products of the space.

The various interior elements and their meanings, both functional and symbolic, are defined in the table below. The intended and intangible meaning of the proposed interior environment is the representation of growth. Users are encouraged to associate with nature and its growing lifecycle.

WHAT IT IS <i>The physical form or structure.</i> <i>The interior element/artefacts</i>	WHAT IT DOES <i>The function of the element</i>	WHAT IT MEANS <i>The associations and symbolic use of the element</i>
URBAN FACADE		
Shopfront intervention, infographics & façade panels (sandblasted)	Locates the intervention. Indicated with activity and with the brand logo. Gives information.	The transparent materiality introduces the quality of the interior identity. Act as a wayfinding device by indicating the access points.
Interior threshold panels with a time-lapse of growing elements	Introduction into the space.	Digital equipment suggests a contemporary approach. The growing scenes of the time-lapse resemble the essence of the proposed programme, by engaging the user with the process of production.
INTERIOR INTERVENTIONS		
Infarm: Vertical hydroponics systems	Houses the fresh produce, growth takes place within the interior environment.	Brings the user close to natural elements within the interior. Users engage with the growth process during the consumption process when it is witnessed or touched. Witness nature as a closed-looped and self-sustaining lifecycle.
Grow lights (pink)	Helps the plants grow without adequate daylight.	Mimics sunlight. Vibrant and warm. An artificial element resembling the “feel” of a natural element.
Adaptable frame installation <i>(interaction platform)</i>	Aesthetic art piece and central point for interaction.	A living organism, the core and seed of the space, where growth takes place.

Table 4.8.1: Spatial meanings of the urban façade and interior interventions



KITCHEN INTERFACE (diagram 4.8.2)		
Angled ceiling, entering <i>the Inside</i>	Acoustic absorption.	Connect the outside to the inside. Resembles growth as something that opens–up. The movement from the intimate and individual panels to the shared and vibrant kitchen area emphasizes the kitchen as the centre. Also resembles the process of food – it starts small (various parts), grows, matures and transforms into an order.
Floor pattern of the aluminium strips & thresholds (memory of the old fabric)	Indicates movement into the specific user areas.	Subtle wayfinding device. Different elements resemble transitions through the eating process.
Waiting areas	Seating areas: - wait for the order - witness the preparation	Breakaway space within the interior, as within nature. Decluttered and simplistic space to breath in.
Ceiling and wall panels	Creates rhythm and depth. Wall panels secondary function as info panels.	Aesthetic support to the programme, as it resembles a pattern of growth. Emphasizes areas of importance.
Signage panel and kitchen interface structural detail	Demarcates the area. A wayfinding device. For electrical connections within the frame.	Create a rhythm as in nature. Makes a connection between the roof and floor which resembles the route of growing organisms. The adaptable signage latch onto the frame structure, mimicking the connective network of nature.
Kitchen interface (height difference, transparent screen)	See and collect the order.	Emphasize how and with what ingredients the meal is prepared. Heighten the experience of the service board by showcasing the end product of all the processes.
Moveable trolley and bin	Contain produce, waste, crockery or appliances.	Allows the space adapt and change (grow), to where it is needed.
Exposed task lighting	Illuminate the preparation surface to serve meals.	Emphasize the choice of produce. Focus on the vibrancy of the organic raw produce used within the orders.
Seasonal palette VISUAL	The structure for the menu and its orders.	Connects the user with the specific lifecycle of nature, by emphasizing what nature offers for our well-being
Foraging panels for herbs TOUCH	Spatial element where users interact, to get various spices and herbs.	Users are urged to make their own choices, based on preference (the choices are predefined and limited). This encourages users to make their own healthy choices and meals. Users engage organically with living elements (organic produce). The natural source is removed and used as benefit (for the body), implying the co-existence of natural elements.

Table 4.8.2: Spatial meanings of the kitchen interface

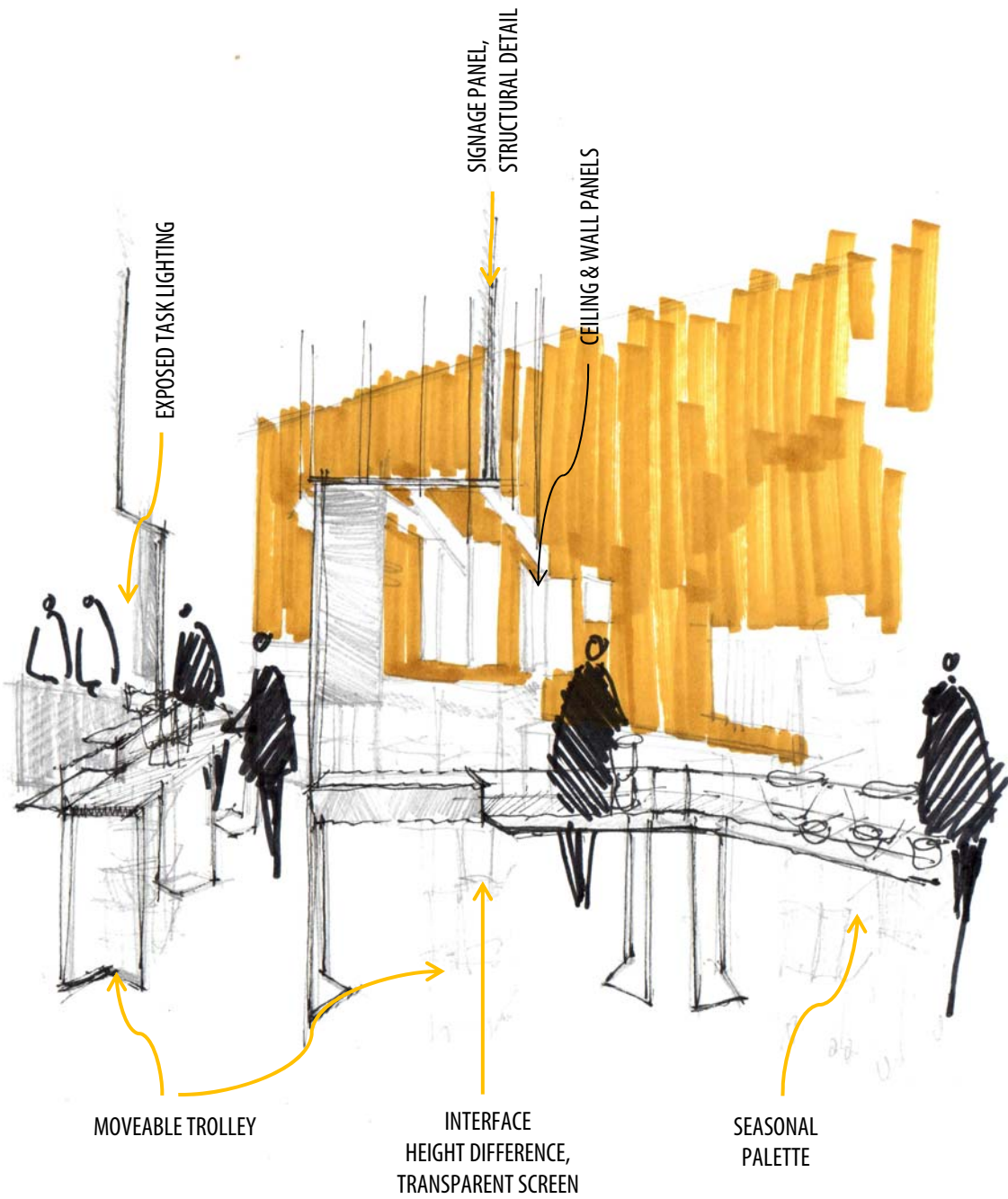


Diagram 4.8.2: Kitchen interface elements



SEATING CONFIGURATIONS (diagram 4.8.3)		
Exposed steel frame elements	Structural support of the table or for the hanging indoor farming systems.	Support system, the base for growth. Patina (aging) showcases the lifecycle and change of natural elements.
Wood surface with bolted joints	Table which is used for eating (functional element).	The sense of craftsmanship in the joinery detail showcases the process of making. It is also a gentler approach to the joinery of different materials.
Cork surfaces (on the table)	Demarcate the seating portion of a user.	Restricts the movement of the service board on the table, while the tactile difference resembles the unevenness of natural elements. It also creates a visual barrier between the various users at the table.
Suspended mood lighting	Intimate feeling, warm. Relaxed environment.	Demarcates the seating areas activity. The exposed light sources seem organic with the different lengths resembling rhythms of growth.
Baffled ceiling	Acoustic absorption.	Creates rhythm and articulation, which supports the excitement and rhythm of the eating experience. Exposes the service above.
Cork surface (booth partitioning)	Pin-up board and partition (functional element).	The board is reusable and adaptable, resembling the same offering as natural elements.
DETAILS DURING CONSUMPTION		
Service board	Carry the order of the user.	The board details form part of the brand image. The demarcation of the order and the elements on the board emphasizes the ingredients. This enhances the eating process and the experience of the individual. Interaction with fresh produce, the crockery and cutlery is encouraged.
Staples joint	Connects two surfaces.	The joints resemble an imprint into natural elements in a gentle way (not a manufactured or processed method).
Wonkiware crockery	Used to plates up the meals.	The products are made of organic material, linking it to the earth. Creativity is resembled in the form and shapes of the handcrafted products.
Edible cutlery (spoon)	Utensil for eating.	Consuming the entire product without waste. A process oriented view is translated into the use of this element.

Table 4.8.3: Spatial meanings of the seating configurations

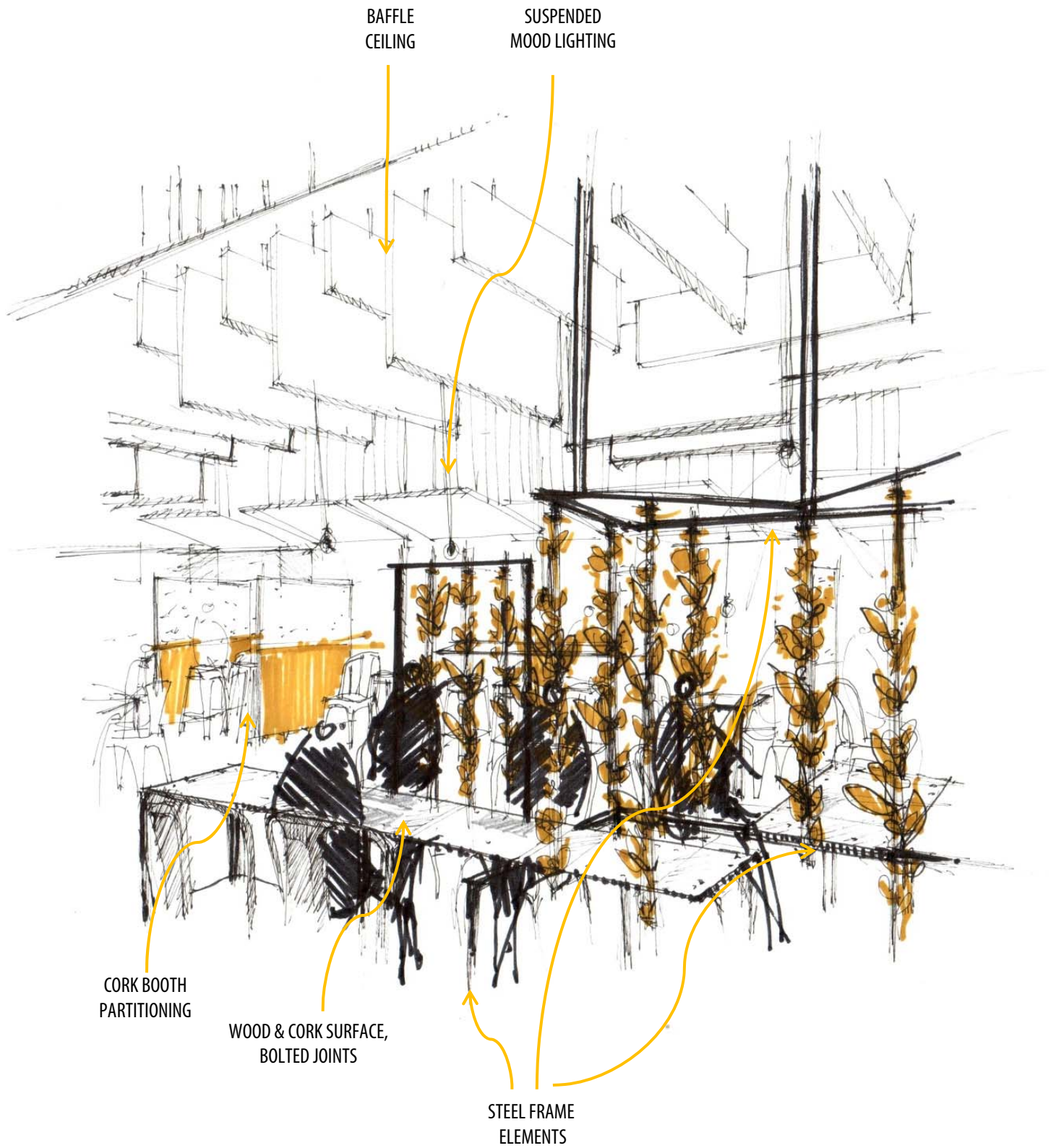


Diagram 4.8.3: Seating configuration elements

4.9

CONCLUSION

In this chapter the proposed concepts and theories were interpreted to inform all the design decisions. The design furthermore considered the requirements of a commercial kitchen.

The process oriented view theory and the organic movement informed the proposal for setting all the processes on display. This concept then translated into a transparent spatial quality informing the operational style of the programme, as a finishing kitchen. Principles of the changing kitchen furthermore supported this style as it desires central placement and simplified processes.

A brand was developed for the programme to compliment the transparent spatial quality. The menu is inspired to function around a seasonal palette, with various preparation interfaces and indoor farming systems which showcase the seasonal ingredients and how they translate into the orders. The users are encouraged to interact with the systems before and during the eating process, by foraging for herbs and spices.

It was recognized that the spatial intent must connect all the phases of the eating process, by communicating growth of organic produce in this urban context. It must also display back of house processes and waste areas for users to engage in and to create an educational value. A series of interior movements and a programme list defined this intention, from where it developed through an iterative layout process. It established the various interior thresholds and areas namely; the kitchen, foraging panels, seating and the interaction platform. Concepts and qualities of the above mentioned identified areas were explored.

As conclusion to the design development, the sensory interactions and the intended intangible spatial meanings of the materials and interior elements were defined. These interactions, predominantly with the senses of seeing and touching, create the story and experience which influence the users' way of living.

Technical development of the general layout, identified design details and the programmatic systems and frameworks follow in the next chapter.