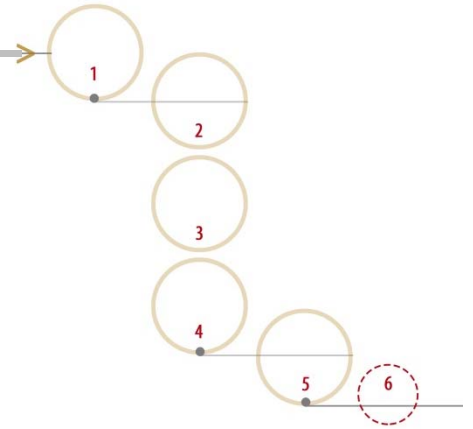




CHAPTER 6

CONCLUSION



“Nature holds the key to our aesthetic, intellectual, cognitive and even spiritual satisfaction”

Dr. Edward O. Wilson, American environmentalist and researcher.

Chapter six is a conclusion to this dissertation. It commences by giving an overview of the study. The identified problems, aims, objectives and theoretical investigations are contextualized within a programme and context. The overview furthermore addresses the main theoretical ventures, their spatial intention and the design development. The areas of focus in the dissertation are also specified together with the dissertations significant contribution towards the discipline of interior design. As an outcome of the dissertation, a number of interior design principles and strategies which encourage sustainable living are expressed. Lastly, recommendations for further design iterations and studies are stated.

6.1

OVERVIEW OF THE STUDY

This dissertation addressed two aspects which is that of sustainable living and the creation of influential experiences within interior environments. This problem and approach originated out of a concern with healthy living and sustainable environments within the social context of the restaurant industry. Theoretical undertakings with regards to a redefinition of food, the eating process and sustainable living practices, developed a conceptual restaurant approach named, *the Inside*, which defined attributes for creating an eating experience. The programme was specifically placed within the urban context of the Maboneng precinct, Johannesburg CBD, as it holistically address the problem with the notion of urban farming. It furthermore developed a holistic retail concept, brand and interior environment identity based on sustainable principles. With the implementation of various design concepts, iterations and principles, it is established that sustainable living can indeed be encouraged within and through our interior environments.

The design development focussed on four areas namely, the kitchen interface, the seating configurations, the interaction platform and indoor farming systems. All of these areas focussed on sustainable and experiential principles, which was based on the event ontology philosophy by Alfred North Whitehead (1978). It establishes a process oriented view, where objects such as food or an interior environment, does not merely exist. This concept linked to the trending farm-to-table concept, and how the farming process will be accessible in an interior environment. It developed a transparent spatial quality which exposes all the processes of growing fresh produce, consumption and waste within the restaurant kitchen and seating areas. It deliberately encouraged user interaction with the eating process. It influenced sustainable material choices, joinery and adaptable qualities, such as the innovative material joining detail and elements with Xanita x-board.

A significant contribution of this dissertation is the establishment of guidelines and the meaning for experiential design, contextualised within the interior discipline. Theoretical principles and specific spatial strategies are defined for the design process. The meaning of an interior experience consists of two aspects, considering both the principles of user experience and experience design. User experience outlines the specific emphasis on how to create and consider specific psychological needs, behaviours, habits and patterns of the occupants. Experiential design on the other hand views an interior as a story, an intangible spatial journey with a series of interactions and sensory explorations, narrated by the designer. In creating various spatial experiences and meanings, the process oriented view concept will be realized.

It is established that the way users live is directly linked to their interactions, dominantly visual and touch, within their interior environments. As interior designers it is necessary to address and educate the matters of sustainability, by creating an influential and experiential memory for the user to attain.

6.2

OUTCOMES

It is established that a number of interior design principles and strategies does encourage sustainable living:

- The designer must create an intentional design concept and environment which is set in and around sustainable principles, considering aspects such as materiality, electrical approaches and recycling systems. The design is formulated as an integrated whole of sustainable principles, which will holistically encourage this way of living.
- The users must interact with the interior and its various processes, elements and products. It is furthermore established that the senses of touch and vision engage users the most in order to adapt the message of the interaction.
- The users must be connected to various phases of the interior processes. This is achieved by transcending the boundaries and thresholds within the interior to make more of the concealed spaces visible.
- An educational value added to the interior makes the experience more significant than just merely functional.
- Sustainable living is suggested within the forms and frameworks of the interior. The perceptions of the forms are intangible qualities such as: growth or growing elements, community involvement and education on seasonality and local productions.
- The experience must be regenerative to be sustained and internalized by users.

6.3

CONTRIBUTIONS

This dissertation made the following contributions towards the discipline of interior design:

- The design of the proposed programme introduced integrated farming systems within the interior environment. These indoor farming systems connect the users to the production phase of the eating process, referring to “the farm”. It aims to make this process accessible to the occupants within the space.
- Sustainable attributes are attained with the various designed interior experiences, movements, views, sensory and spatial interactions. The design elements and details aim to educate the users on sustainable concepts, principles and materiality.
- The dissertation attributes experiential design guidelines and the implementation of a process oriented view in interior environments. It significantly contributes towards sustainable notions and practices within the discipline of interior design.

6.4

RECOMMENDATIONS

The design allows for further iterations and studies such as:

- This dissertation must be seen as a baseline study for the implementation of urban farming within an interior environment. Integrated farming systems and its detailing can be further developed and implemented within other interior environments and programmes.
- The proposed urban framework for community integration and regeneration as well as the proposed programmatic sustainable systems (water, waste, produce supplies and production) should be further developed and technified.
- There is an opportunity for a design investigation and programme which specifically address the problem of food security in urban environments.
- Further interior design ventures will be the exploration of sensory specific eating concepts within the proposed programme or the development of the proposed roll-out retail stores. The programmes must build on sustainable development concepts and implement the established experiential design strategies.

6.5

CONCLUSION

As conclusion to this dissertation and an overview of the study is given. It highlights the departure point, problem statement, aims, objectives, intentions, theories, spatial development and qualities of the *Green (Inside)* dissertation. It is established that the way users live is directly linked to their interactions within their interior environments. It also specifically states the established guidelines for experiential design, achieved by the dissertation investigation. The various outcomes, contributions and recommendations for further studies conclude this study.

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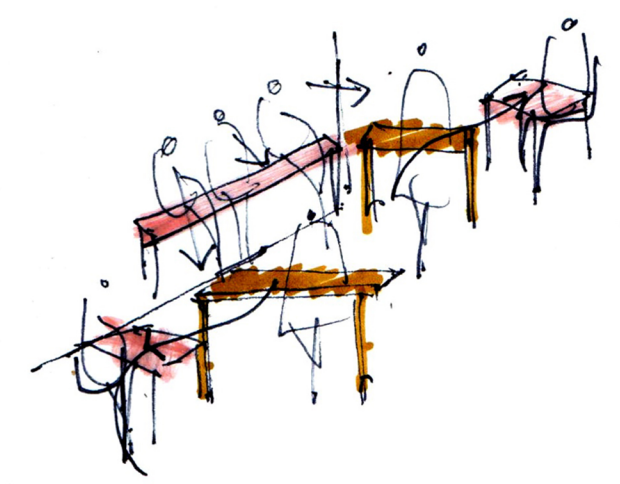
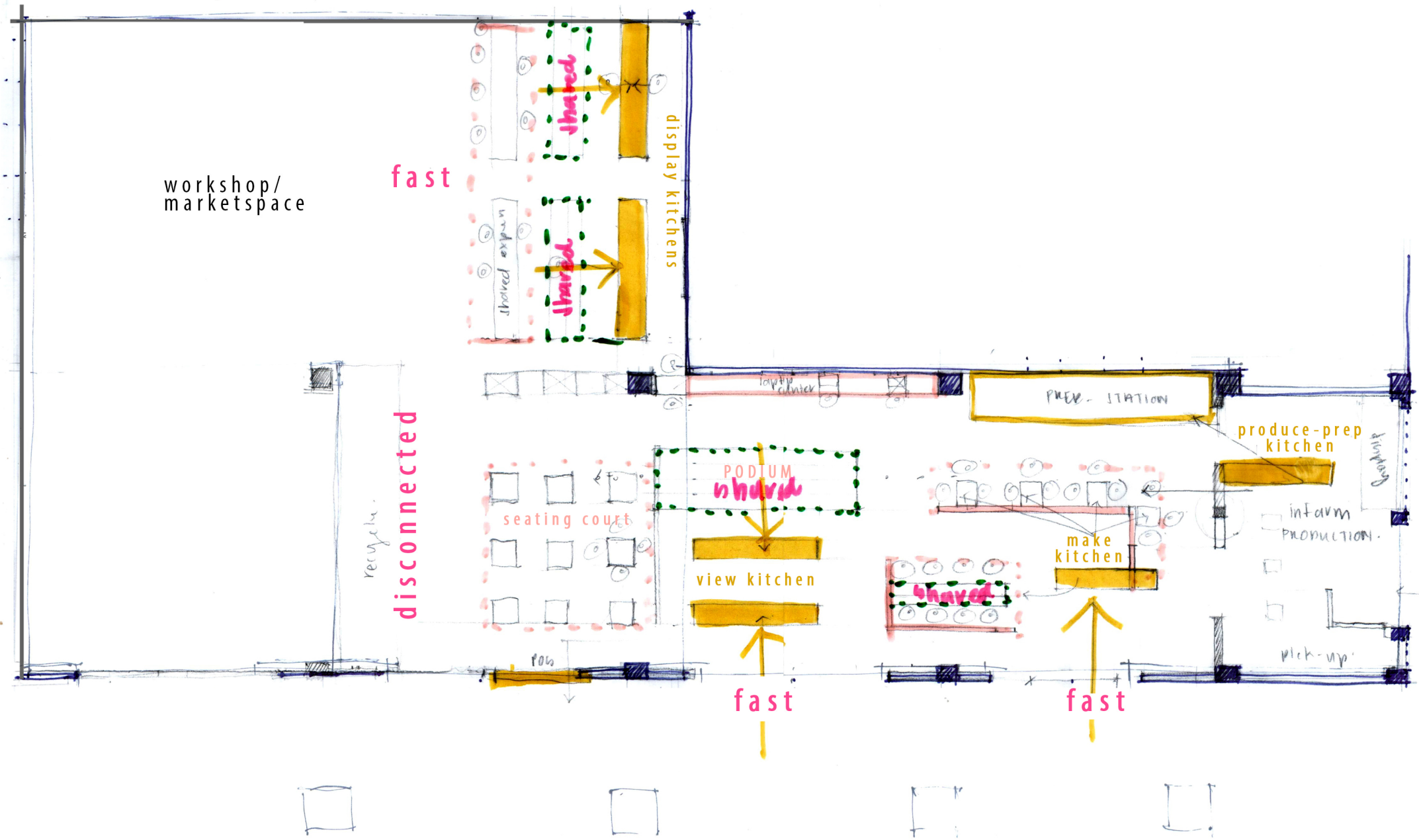
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APPENDIX A

EXPLORATION OF THE LAYOUT



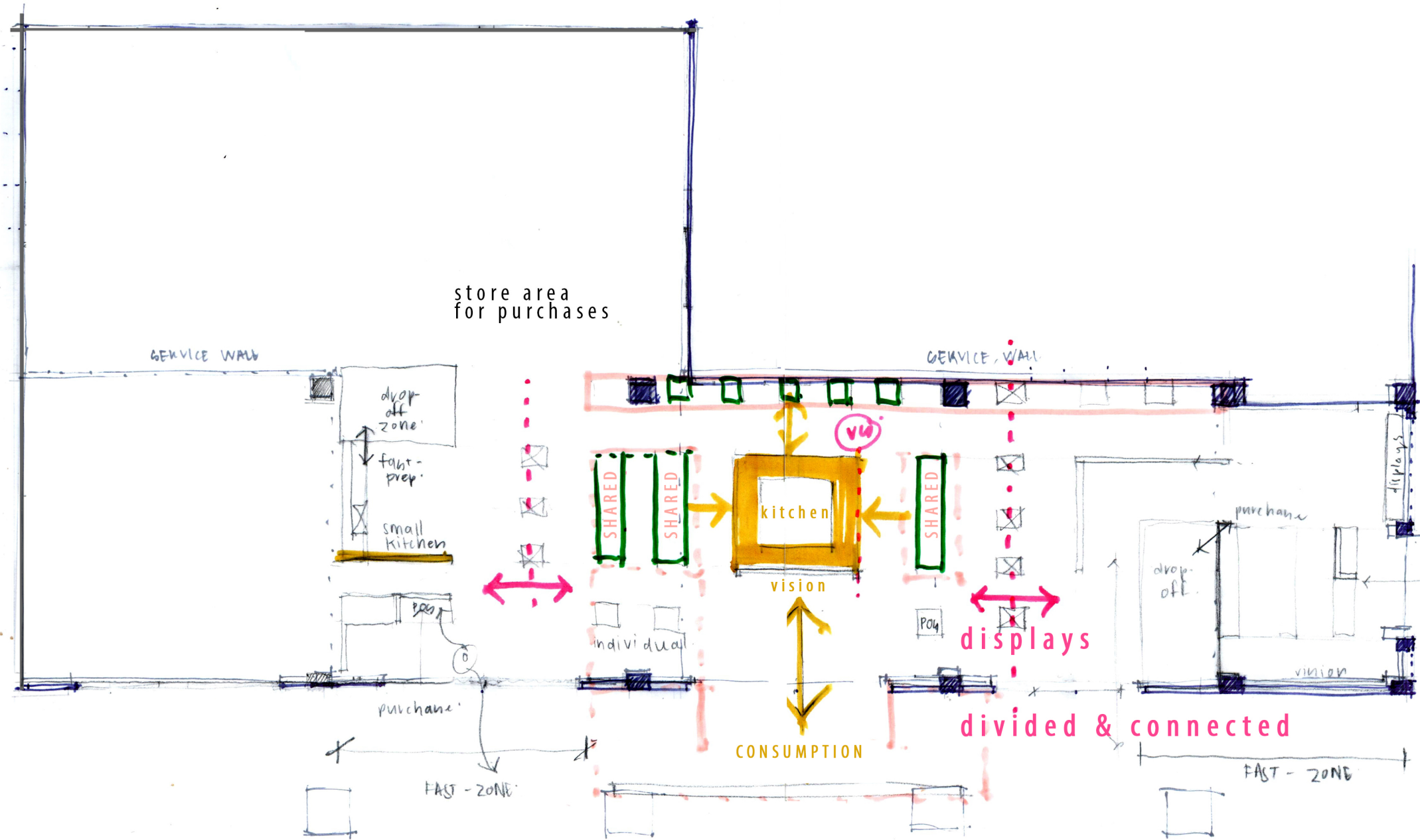
In this layout a frequent flow of the production to consumption process is practiced to be witnessed by the users. This constant exposure involves the users, but creates a complicated interior.

There are multiple movements and no demarcation of zones or connections. The movements are fast paced in their directionality.

Another aspect is the lack of the last process of disposal.

multiple kitchens
VARIOUS ACTIVITIES

Diagram 4.4.2.1 (A)



The central kitchen creates a focus on the process of making. Shared seating is applied around the kitchen to further emphasize the process.

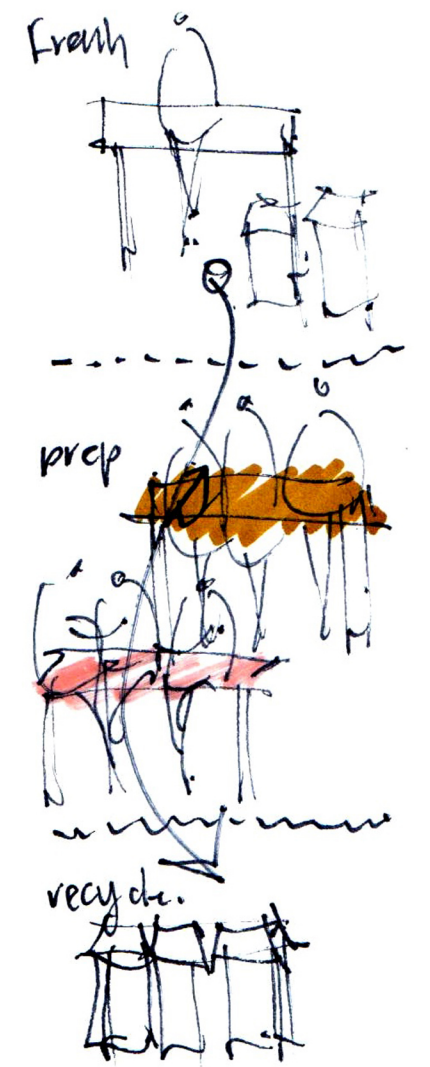
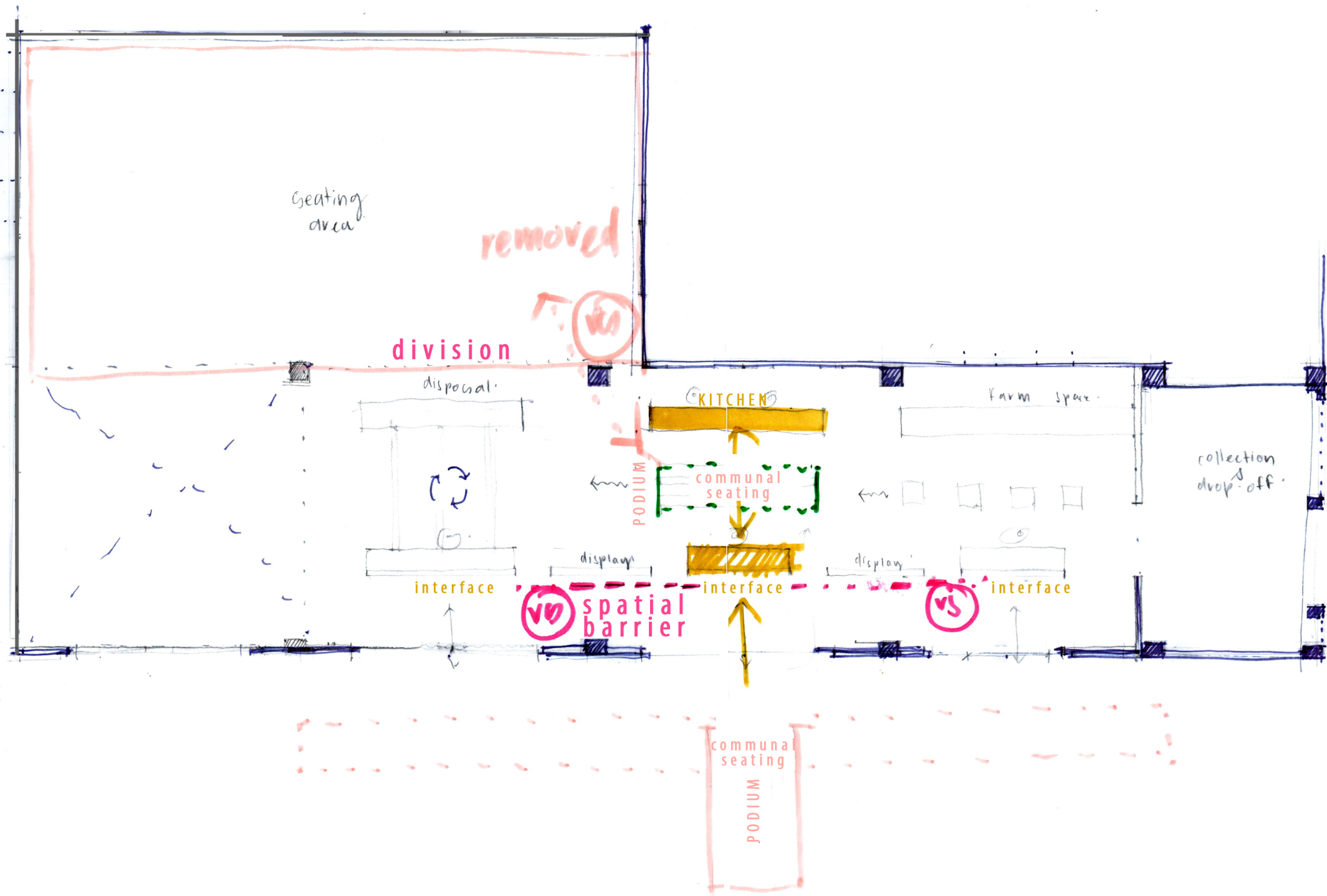
The zone is proposed to be divided but also connected through displays. This result into empty interior areas if only the kitchen zone is occupied.

To conclude, this layout is too static and the seating lack in quantity.

central kitchen

THE FOCUS ON CONSUMPTION

Diagram 4.4.2.1 (B)



By implementing 3 nodes for users to go through in the interior, directionality (flow) of the processes is witnessed.

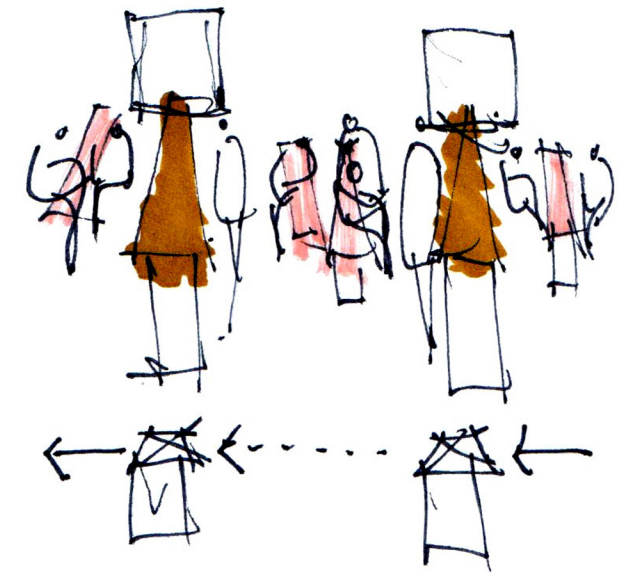
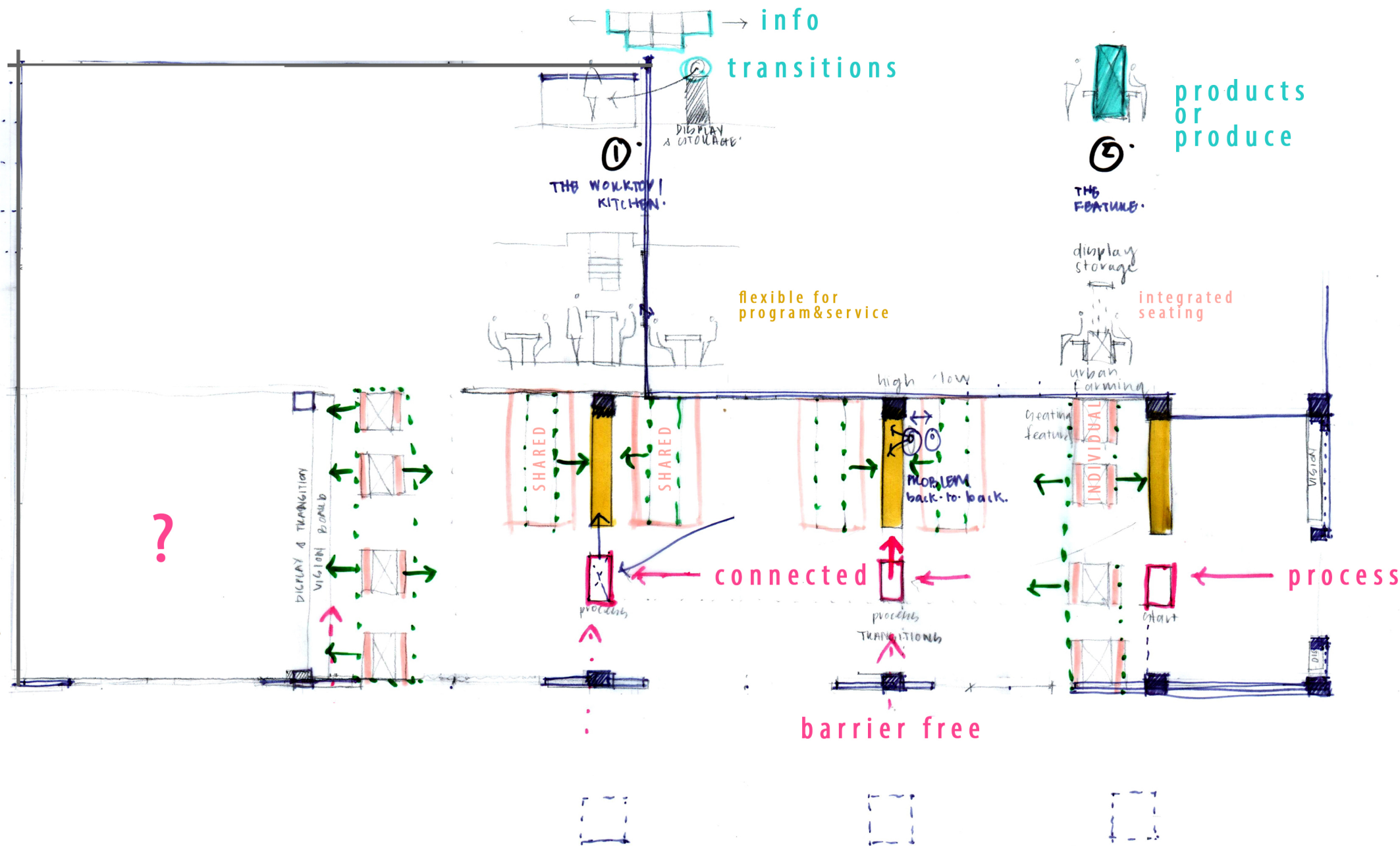
Contrasting this quality, the placement of the interfaces creates spatial barriers which conflicts the movement.

In this iteration the seating is also removed from the process which divides the users from the process.

3 nodes

DIRECTIONAL ACTIVITY

Diagram 4.4.2.1 (C)



This layout implemented a flexible worktop. It lends itself to a process oriented view by suggesting transitional spaces/installation between them.

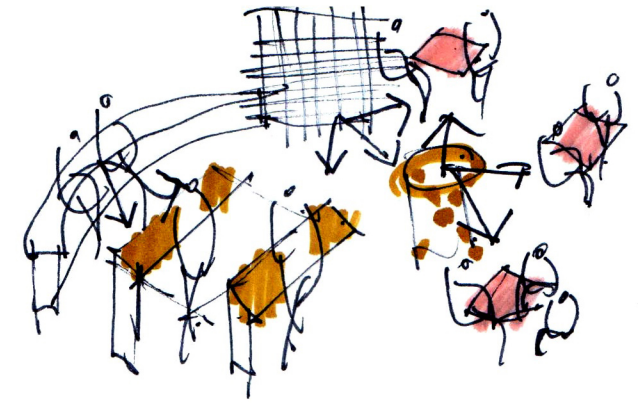
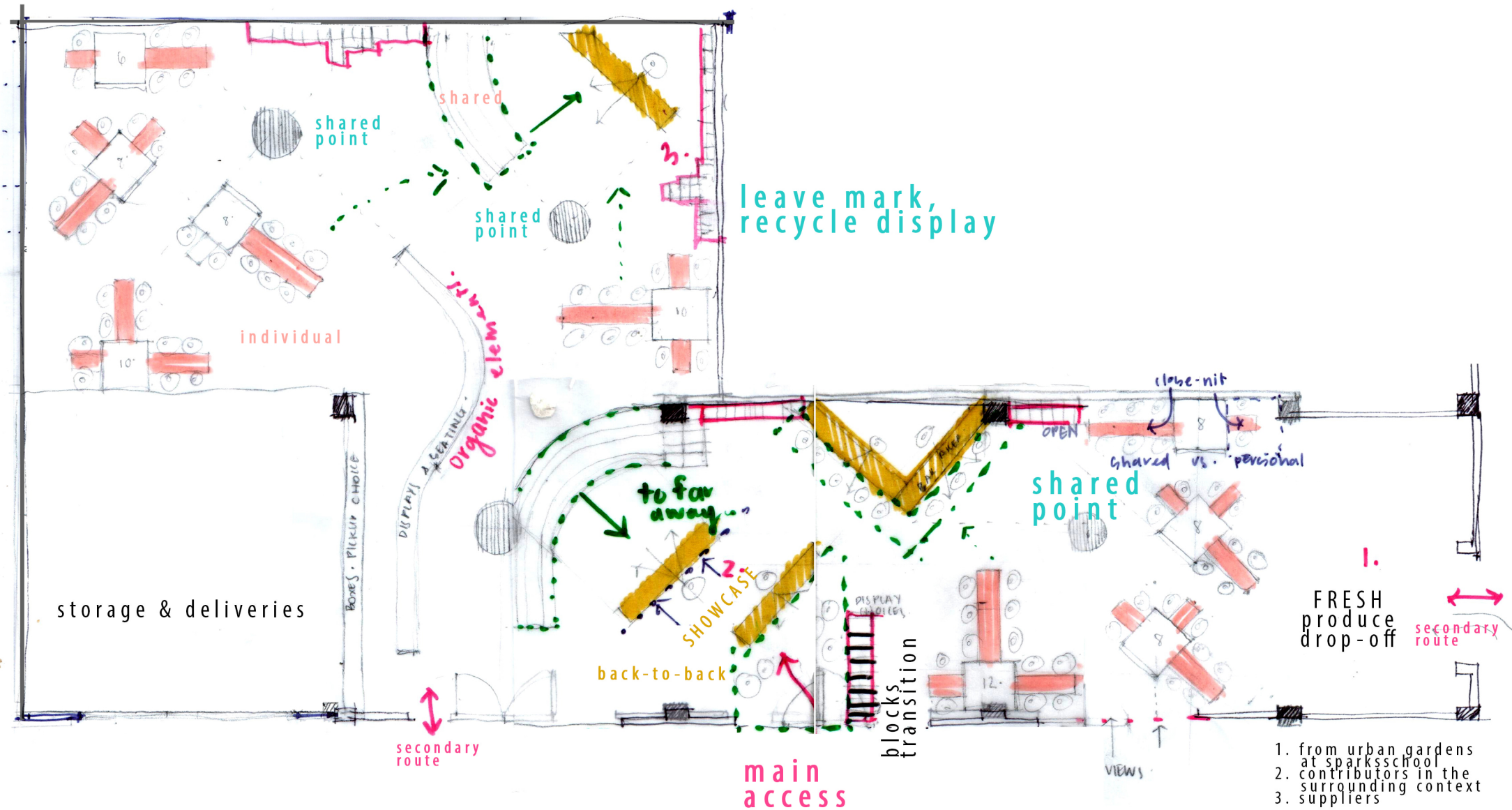
It also implemented integrated seating features around the worktop zones to make it a part of the process.

This layout connects the concept but lacks in practicalities, not considering spaces for pre-prep, prep and deliveries.

2 systems

THE WORKTOP & THE FEATURE

Diagram 4.4.2.1 (D)



This iteration implements centrally placed shared points. Seating areas will be structured around these points. It encourages user engagement whilst going through the transitions of the space.

A valuable exploration is the idea of the kitchen. It resembles a stage for the food process to be showcased on. A supplemental secondary "bar" interface was also implemented next to the kitchen.

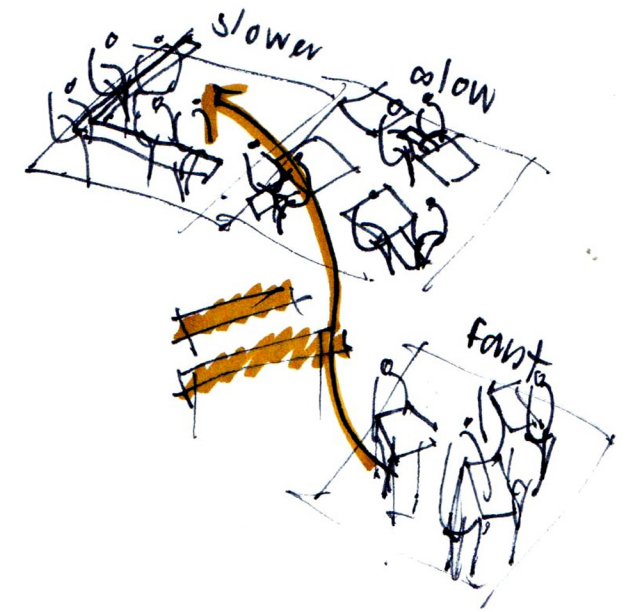
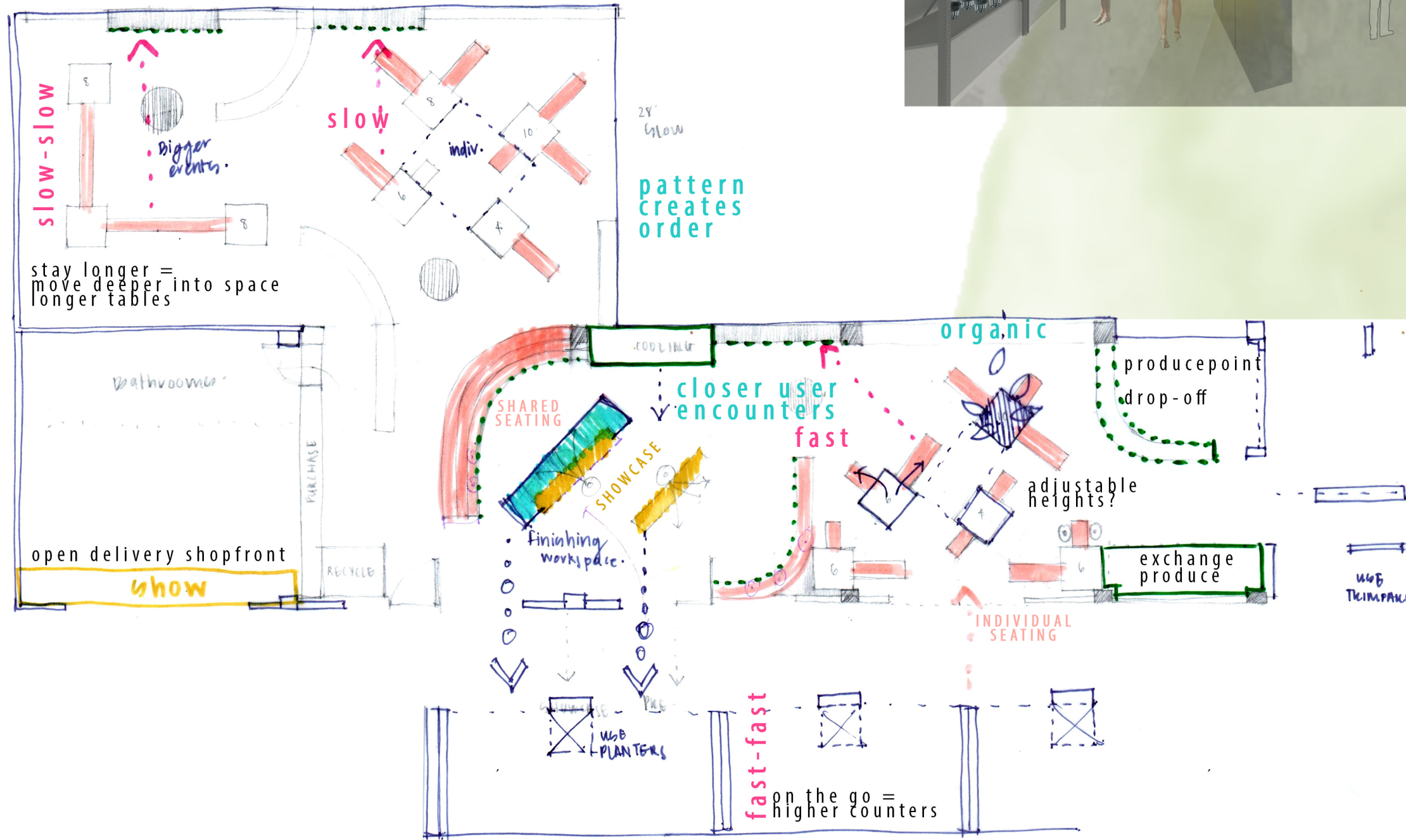
The movement of the user is considered. Organic curved seating and display elements make the movement less static and linear. Main and secondary access points are defined. The idea of the produce zone is also defined.

Various negative aspects occur. The layout disconnects the 3 processes. The kitchen areas are not grouped. Back of house was not considered.

sharing structure

NODES SUPPORTING THE STORY

Diagram 4.4.2.2 (A)



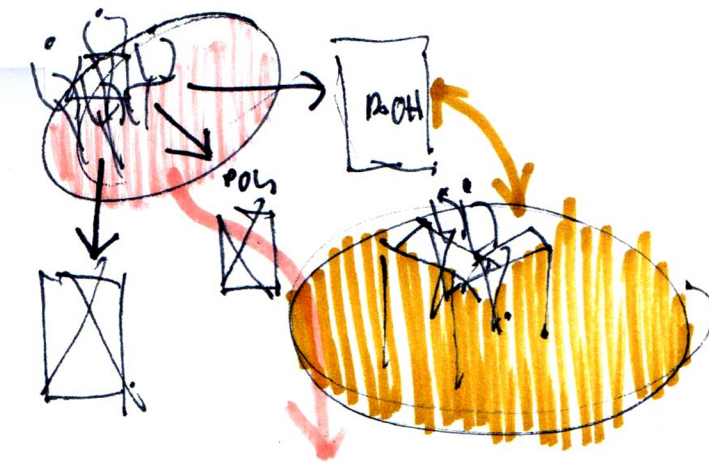
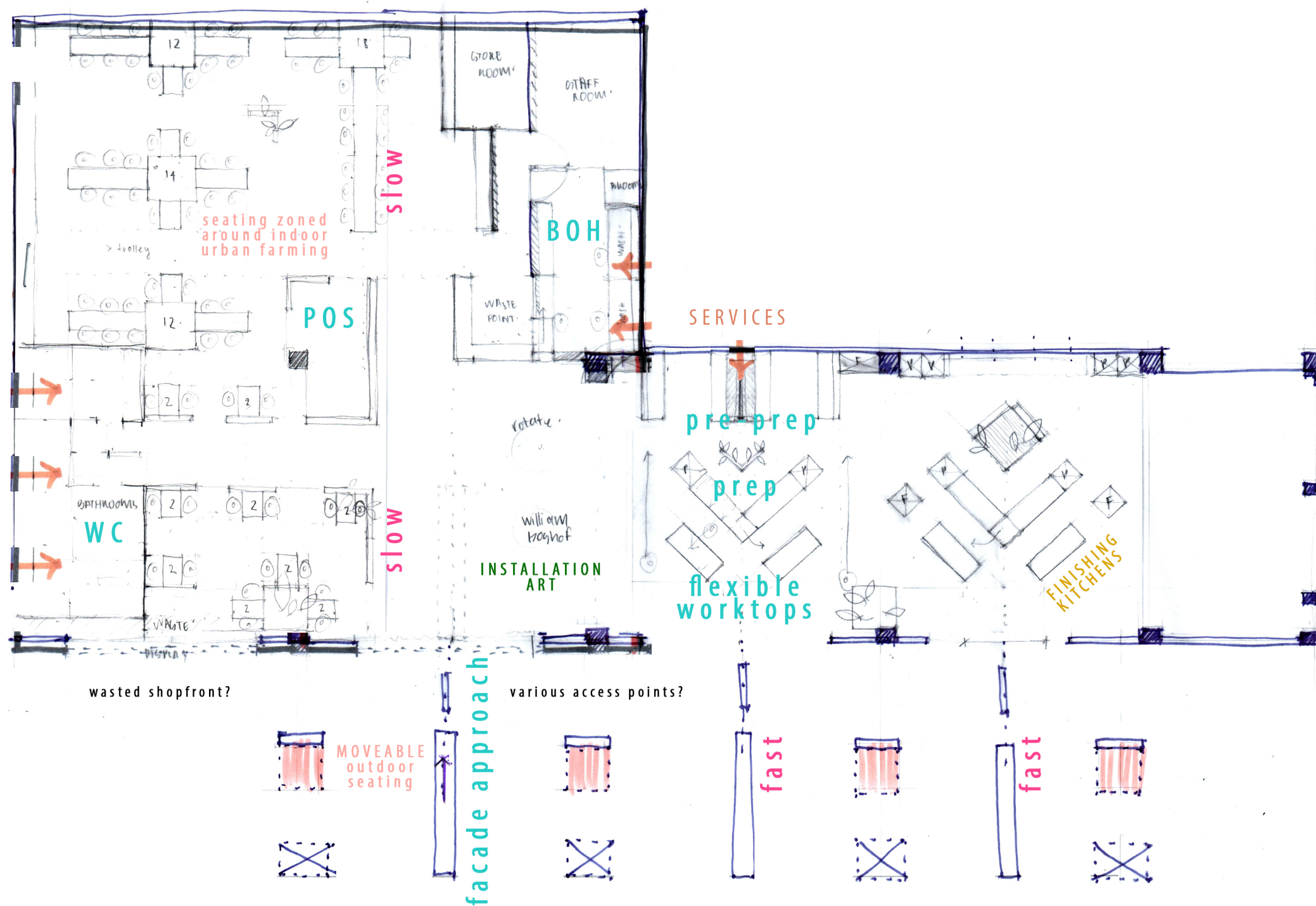
More organic elements are introduced in the form of indoor urban farms. These implementations create more user encounters with the spatial concept of people involved in the growing aspect of food. Playing on the aspect of growing, the implementation of patterns in the layout of the seating creates order. It allows for spatial demarcations, each assigned with various "seating speeds".

Use of the last shopfront as a display space.

Although the kitchen and prep-spaces are visible, it is still too little to meet the requirements and too far removed from the users.

seated to speed
DEMARCATED MOVEMENT ZONES

Diagram 4.4.2.2 (B)



A more detailed approach is taken towards the layout. Various table sizes are organized and integrated with the urban farming systems. The concept for a finishing kitchen is explored. It defines the kitchen as a series of pre-prep, prep and finishing worktops. Together with this specification, specific sizes and groupings of certain functions according to commercial requirements are applied.

In addition, a point of sales, back of house and ablutions are added. In this layout the seating is placed in a defined area. A valuable approach is also the integration of the urban façade, to emphasize the intervention and lure the users in from the outside. A central point for an experience in the form of installation art is proposed.

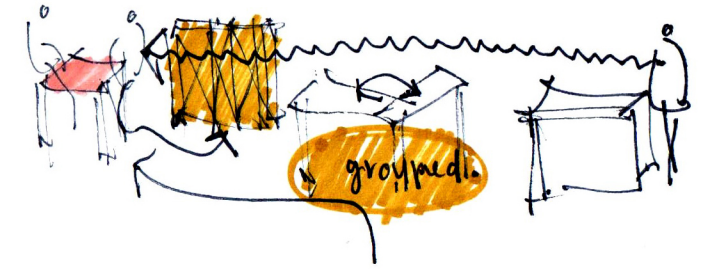
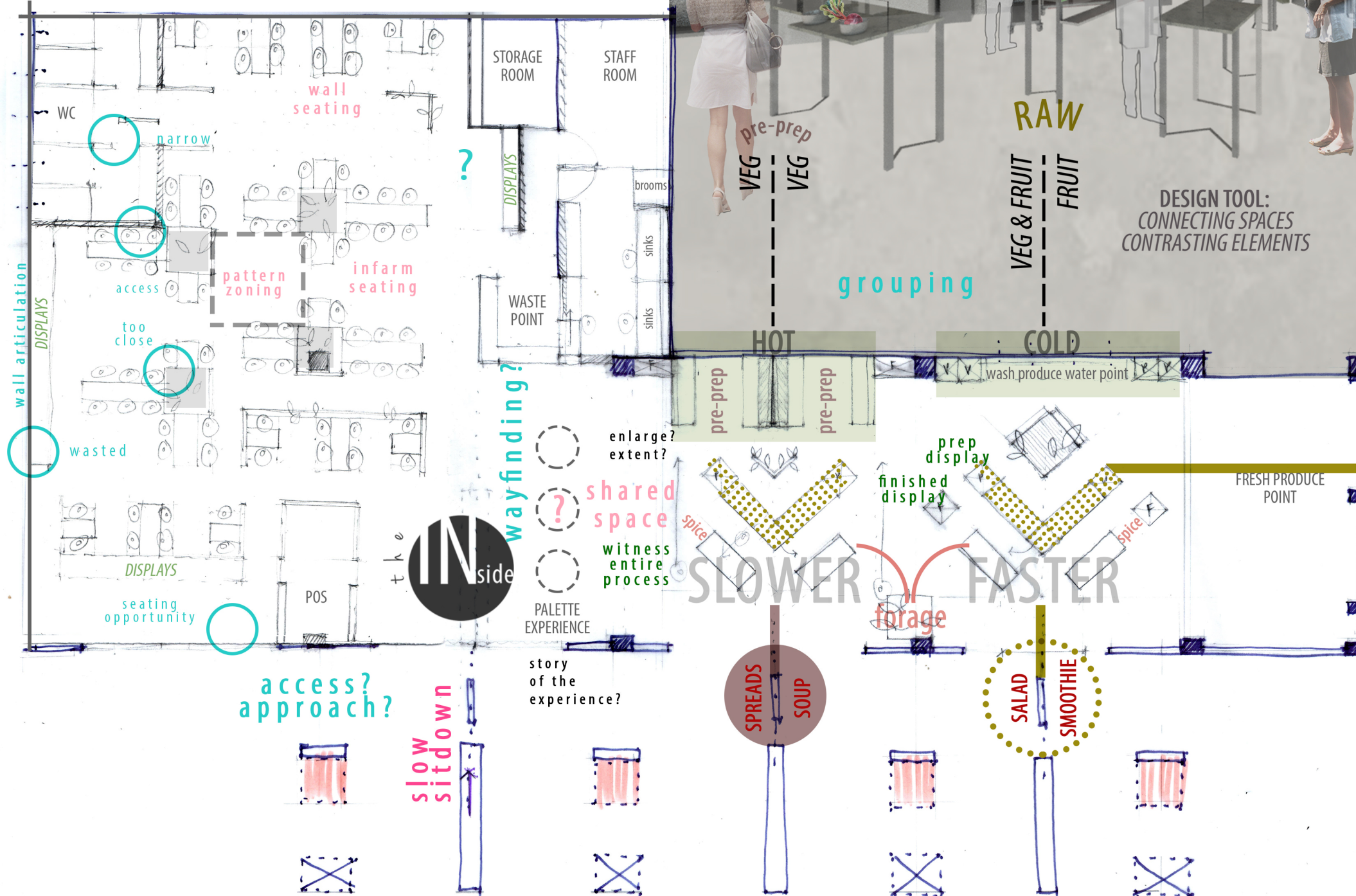
The access into the interior and the movement within is still un-directional. This can be explored through wayfinding principles or with specific access points.

technicalities

REQUIREMENTS & CONCEPT

Diagram 4.4.2.2 (C)

explore different types of seating:
consider loose chairs



The menu design for the intervention was established (refer to 4.2.2). It was necessary to determine the style of the operation in order to define the spatial requirements and grouping. Clarity from the menu led to the adjustment of the layout to fit the programme's different needs. The finishing tables are also grouped according to similarities.

With specific focus on materiality of the worktops, the exploration of transparent qualities will create interior views. The views will link the concept of farm-to-table (produce to consumption & waste) in a spatial manner. Applies access and views to the back of house.

The central point for an experience is explored further. It proposes three platforms for three conceptual experiences to take place on. Each platform will be a display, focussing on the three phases of the eating process.

Due to the linear nature of the layout the interior seems like a production line, which effects and weakens the quality of the experience. Various access points and interior routes exist. Wayfinding principles need consideration.

process orient view

MENU DESIGN APPLIED

Diagram 4.4.2.2 (D)

APPENDIX B

XANITA X-BOARD

a natural fibre based composite board consisting of recycled kraft core sandwiched between printable white liners

PRODUCT RANGE



ATTRIBUTES

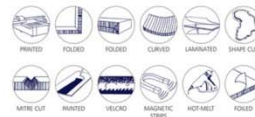


What is Xanita Board made of?

Xanita Print has a high crush strength paper core and is manufactured from post-consumer recycled paper and sugar cane waste. Specialised coatings and the selection of key raw materials ensure optimum board stability.

100 % upcycled
non-toxic
recyclable, repulpable, reusable
lightweight & load bearing
easily flatpacked
labour saving
versatile

- Printed – UV inkjet or screen
- Upholstered
- Laminated
- Painted
- Pressed with decorative foils
- Mitre cut
- Shape cut
- Folded
- Curved
- Photo-mounted
- Fastened with Velcro, magnetic strips or hot-melt adhesive



APPLICATION



- ✓ Point of purchase displays
- ✓ In-store seasonal decorations
- ✓ Exhibition stands
- ✓ Pop-Up Shops
- ✓ Exhibition furniture
- ✓ 3D Lettering & signage
- ✓ Ceiling Beams and bulkheads
- ✓ Gondola ends
- ✓ Header boards
- ✓ Standees
- ✓ Podiums & Plinths

POSSIBILITIES:
JOINERY &
CRAFTSMANSHIP

• BLIND MORTICE & TENNON SEQUENCE



• 90 DEGREE CORNER DETAIL



• FULL MORTICE & TENNON SEQUENCE



• 180 DEGREE CORNER DETAIL



• SLOT SEQUENCE INTERLOCK



• 45 DEGREE V-MOTION JOINT SEQUENCE

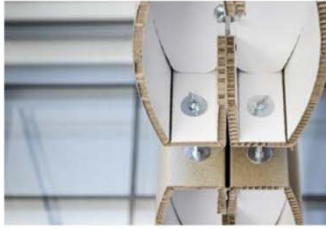


• SLOT SEQUENCE INTERLOCK WITH TENNON

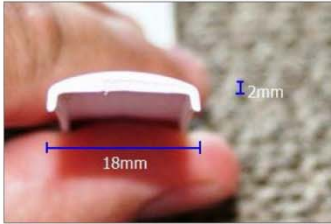


(Xanita, 2016)

PROPOSED ACCESSORIES



The crafters will be supplied with the following accessories when developing the concept of the interaction platform



PVC Flexible "C" Section Edge Band

Semi-permanent structures.

Code: XAC-001

Description: Black or White 6mm, 8mm, 10mm, 12mm or 16mm

Minimum Quantity: 200m



Xanita PVC Screw

Semi-permanent structures.

Code: XAC-002

Description: Black, white or clear 52mm (long) 30mm (short)

Minimum Quantity: 1000 per type



Xanita PVC Screw Driver

For fastening and unfastening of PVC screws.

Code: XAC-003

Description: Black only

Minimum Quantity: 3



M6 Bolts + Wing Nuts & Washers

Attaching return sections of Xanita Board.

Code: XAC-008/1 | XAC-008/2 | XAC-008/3

Description: M6 Wing nut, M6 x 32mm washer/ M6 x 50mm galvanized hex.

Minimum Quantity: 100



Adjustable Gripper Hanger with Loop

For suspended structures.

Code: XAC-013

Description: No.2 Gripper with loop end & 5m cable.

Minimum Quantity: 20



M6 Eye Bolts

For suspended structures.

Code: XAC-014

Description: To fit M6 spring nut.

Minimum Quantity: 20



PROPERTIES

Appearance	The surface of the material is free of blisters, foreign matter, marks, etc. The colour and finish is a commercially acceptable match to the customer approved master sample.		
Printability	<ul style="list-style-type: none"> Both sides show the same visual surface properties as well as print performance. Excellent printability: solvent screen, UV digital and screen. 		
Board Thickness	<p>10mm, 16mm</p> <p>Other thicknesses available on request.</p>		
Board Sizes	<ul style="list-style-type: none"> 1220 x 1830mm 1220 x 2440mm 1220 x 3050mm <p>Special lengths available depending on quantity ordered. Up to 3600mm.</p>		
Stability	<ul style="list-style-type: none"> Excellent rigidity and stability under indoor humidity and temperature fluctuations. Excellent condensate and moisture hold out under varying conditions. 		
Eco-friendly	<ul style="list-style-type: none"> All components are classified as non-hazardous according to the EEC Hazard Classification. All components are not considered as chemical or biological hazards. No volatile carcinogenic decomposition. VOC (volatile organic compound) none to negligible—none less than 5 ppm X-Board Print is classified as fully repulpable in normal paper and pulping lines. 		
Fire Resistant	<ul style="list-style-type: none"> DIN 4102 and SANS 10177 approved. No toxic fumes when burned. Non-explosive. Low fire load rating based on low calorific value when burning. 		
Converting Temperature	<ul style="list-style-type: none"> Recommended application temperature range: 5° and 45° Recommended room temperature for CNC cutting: 21° ± 3° 		
Physical Properties		Weight	Crush Strength ASTM C473 – 03
	10mm	2,2 kg/m ²	90 ton/m ²
	16mm	2,4 kg/m ²	90 ton/m ²
			Flexural Strength ASTM C473 – 03
			39 kg
			55 kg
Climate Resistance	Test		Results
	Low Temperature Resistance Exposure to -5° C for 48 hours.		No visible changes
	High Temperature Resistance Exposure to 70° C for 48 hours		No visible changes
	Humidity Resistance ASTM C473: Vertical exposure in humidity cabinet for 48 hours 90 % humidity and 40° C		No visible changes, deformation, warping, swelling or fungi growth.



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Head Office Paardevlei, De Beers Avenue, Somerset West 7130, South Africa
P.O. Box 407, Somerset West 7129, South Africa

For your closest Xanita Board accessories supplier, please contact one of our overseas distribution partners at xanita.com/distributors/

Xanita, 2016. Xanita. [Online]
Available at: <http://xanita.com/#>
[Accessed 12 August 2016].

APPENDIX C

GROWLIGHT SPECIFICATIONS

PROPERTIES
Lemnis Oreon Retrofit

Lemnis
Greenhouse Lighting

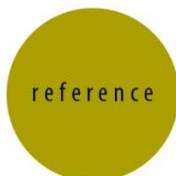
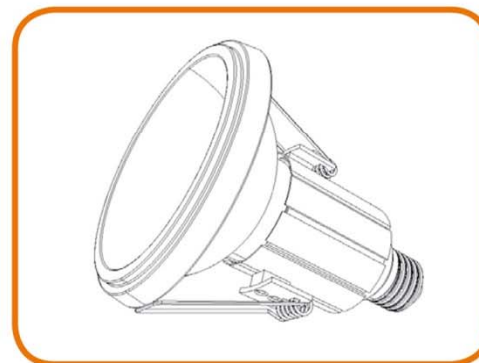
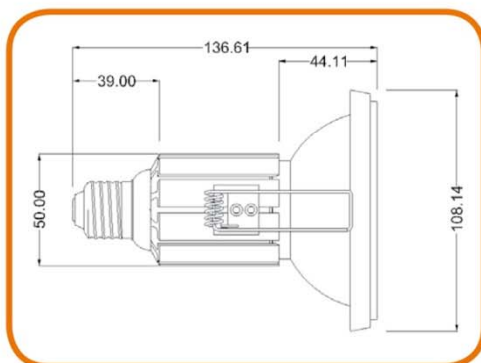


Technical data		
Power consumption	12	W
Input voltage*	230 / 50 Hz 110 / 60 Hz	V
Input voltage range	150 – 260 80 – 140	V
Power factor	0,85	
Maximum ambient operating	0 – 45 °C / 85% RH	
Storage	0 – 60 °C/ 85% RH	
Life (L70)	50.000	hrs
Fixture*	E27 BC22 E26	
Reflector	Diffuse Brushed Aluminum	
Body	Anodized Aluminum	
Weight	300	g
Ingression Protection	IP 54	
Size	136.6 x 108.1	mm
Lamp package	115 x 115 x 140	mm
Certifications	CE UL EMC IEC 61000-3-2 EN 55015 NEN 60598 – NEN 62301	

* Customers choice at order

Color possibilities		
Lemnis Oreon Color	Plant effect	Light output PPF (µmol/s)
Deep Red	Growth	22 µmol/s
Far-red	Stretching	16 µmol/s

Optical specifications		
Radiation angle	120°	degrees



Email correspondence:
NTL Lemnis South Africa,
Francois van Tonder



APPENDIX D

PERSONAL REFLECTION

seedlings



grow your own



window sill



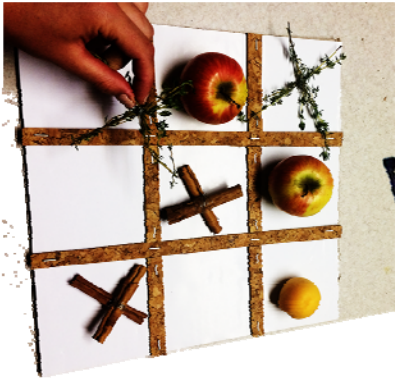
PROCESS ORIENTED VIEW



APPENDIX E

FINAL PROTOTYPES

INTERACTIVE PROTOTYPES



interaction platform:
"play concept"



bespoke
service board



edible
cutlery



process oriented view:
display of kitchen interface

LIGHTING PROTOTYPES

concealed growlight detail



various strategies



concealed task lighting (kitchen interface)



mood lighting (seating)