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Improving chances? A design strategy to improve health and wellbeing for marginalised people

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RESEARCH

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ABSTRACT

Background
There is a call for architects and designers to rethink what is meant by design for health. Therapeutic design in everyday settings is a growing area of concern

Aims
The authors aim to provide alternative ways of approaching the design of facilities or places that integrate the end-user as a collaborator in the evolution of design ideas in order to create places, which will support their wellbeing.

Methods
The research integrated a theoretical Model with creative practice as research before gaining insights from the end-users and provider of a case study, a day facility for people who are homeless.

Results
The results are twofold. Firstly a Socio-Ecological Design Model (SEDM) and secondly, insights into a designing supportive environments for people who are homeless as an example of a marginalised group.

Conclusion
It is possible to undertake a collaborative and informed process, which can act as a catalyst for positive change and challenge the current common processes to date.

Key Words
Wellbeing, socio-ecological design, therapeutic design

What this study adds:

1. What is known about this subject?
There is a contemporary shift in design attitudes toward creating everyday environments that facilitate wellbeing for people that this work adds to.

2. What new information is offered in this study?
The study proposes a new design strategy to address the design for marginalised groups in society.

3. What are the implications for research, policy, or practice?
There is a need to improve the quality of designs of places for marginalised people and for the integration of the end users' voices in the process.

Introduction

In the architect Tye Farrow's address[1] to the architectural profession, he emphasized the need to shift discussions regarding health and design from typologies (such as hospitals) to address all environments with an aim to generate environments that *cause health*. Although he recognizes that as a society we have come to accept design norms, which although deceptively neutral, in fact potentially cause 'disease, depression and/or boredom', his architectural practice adopts a five-prong approach so people are facilitated to thrive—to live life to their potential. The five principles of Farrow Architects are: nature (design involving natural elements); authenticity (design linked to something we recognize); variety (experiential and sensory diversity); vitality (spaces that are regenerative); and legacy (design as a lasting contribution to

health). Such philosophies resonate with the intention of us (the authors). The question arises: How can we—the design community, support services, and general community—challenge our assumptions about the nature of environments for marginalized groups/people to create environments that are supportive, or as Farrow states, people may thrive to their potential?

The impact of design thinking when combined with stakeholder experience demonstrates a way of challenging design assumptions.

The design of a community centre refurbishment for homeless people in an Australian inner city suburb is the chosen example involving a three-phase methodology. A theoretical model integrating design thinking and *user-informed place making* will be described before outlining the research-based creative-practice case study which includes both process and knowledge of the client group's particulars (homelessness and mental health).

Method

The first of the reported study's phases was the development of a theoretical model, which importantly underpins a challenge or extension to more traditional design strategies. Secondly an interactive and collaborative design process (which involved the researcher-designers, staff and clients) was undertaken which generated a sketch design proposal. Reflections from the researchers-designers, staff and the appointed architect following construction and occupation formed the third phase.

PHASE 1: Theoretical model development

The Model incorporates three core aspects: a socio-ecological approach, design thinking and user-informed place making. *Socio-ecological approaches* integrate knowledge from many fields: **acknowledge** people's values and incorporate a belief in individuals (not only representative groups) to control their settings[2] **recognize** environment's supportive role in a person's adaptive functioning; **reveal** barriers to environmental support. Supportive circumstances enable one's ability to adapt to circumstantial changes—not just to a stressor.[3] Socio-ecological theory identifies there are separate yet interacting domains. Each domain uniquely influences human behaviour producing a dynamic interplay between the '*ontosystem (the individual), microsystem (family, friends), mesosystem (community), and macrosystem (society)*'.[4] Stokol[5] notes the impact on individuals' physical and emotional states and social wellbeing, whilst Moos[6] highlights influences upon self-esteem and personal development, or dysfunctional reactions, such as mental illness. A socio-ecological model recognizes that the social climate of a place includes perceptions of belonging, tolerance, acceptance or discrimination, as well as perceptions of safety and security, prevalence of crime, and property destruction or victimization.

Secondly, design thinking is an important aspect of the study's approach. Designing has been theorized in a number of ways. Early theorists, such as Jones' (black box model; glass box model; self-organising system model author), are superseded by contemporary models, which include reflective processes (varying from three to eight processes)[i]. However, all involve the opening up of possibilities, synthesis of knowledge, and the critique of propositions toward future developments. More broadly, the principles of design thinking are identified by Kolko[7] as 'empathy with users, a discipline of prototyping, and tolerance for failure' (Figure 1). In summary, key design thinking attributes identified within contemporary practice and educational research include:

- Non-linear processes to address complex situations.[8]
- Integrated convergent and divergent thinking.[9]
- As a situated act; that is it reflects the designers' environment.[10]
- Invention arises as ideas emerges; and vice versa.[10]

Designers may be finders or makers; those who seek to discover explanations and those that construct the synthesis of their ideas[11]—as part of an iterative process.

Therefore bringing design thinking to a project allows the exploration of possibilities; yet combined with critical evaluation and synthesis, generates intermediate and evolving propositions as well as innovative and speculative outcomes. More traditional ways to conceptualize and address facilities and services are thereby extended or challenged.

Thirdly, user-informed place making is an important component. If changes are proposed to the built environment, the potential human responses to those changes and the resultant experiences must be understood. Using the social ecological approach (based on Kloos & Shah 2009), the building/facility needs contextualizing (shown as Figure 2's Place of Interest) involving: (i) degree of open accessibility; (ii) avoidance of users' deficiencies amplification; and (iii) acknowledgement of individual users' experiences and value in making social/physical character of place.

The literature emphasizes that when environmental characteristics are appropriately dealt with, facilities' users are more readily integrated into the community in a safe and non-stigmatized manner. Environmental design needs to cater for all without becoming mundane or insipid. More specifically, and of interest for the case study described below, is that physical environments impact on emotions raised for people with mental health issues as summarized in Table 1.[12-18]

Table 1: Environmental characteristics & mental health impact based on literature

Environmental characteristics	Mental health impact examples
Support social interaction & recreation	Develops social skills Enables play Raises positive emotion
Provide flexibility for occupation	Provides choice for privacy or companionship
Interact with nature	Supports calmness Encourages natural sleep rhythms Reduces sense of institutionalisation Increases attention span Restores emotional balance Reduces aggressive behaviour
Control noise levels	Reduces agitation Supports communication
Include art works	Reduces anxiety & depression Encourages pride in place

As well as serving the required functions it is important that delight remains as a design aspiration, in order to support users beyond pragmatic issues. For example, environments are a means to express identity; stereotypical understandings, misrepresentations, or in contrast, meaningful reflections of a person's life and who they are/may become.[19] Zeisel[20] (2006) highlights the environment's role in memory, spatial processing, and learning. Intertwined with mental wellbeing, Evans[14] elaborates on direct and indirect effects of the built environment. Direct effects include availability of housing, crowding, noise levels, indoor air quality, and light quality. Indirect effects result in changes to psychosocial processes. Smith[16] reported children with cognitive difficulties at school were uncomfortable, frustrated, socially and academically affected by conditions including space, noise, layout and lighting. In relation to shopping environments, Smith and Adkins[21] concluded that eight important aspects of the built environment required special consideration for people with cognitive impairments. These were spatial layout, the degree of environmental containment, positioning within a space, presence of triggers, spatial clarity and understanding, environmental constancy, level of environmental stimuli and clarity of signage. However, the points identified within one setting (such as schools, retail) may be relevant to another and will influence the place-making quality.

We propose the three components introduced above, if integrated, enable a rich brief to evolve. (Refer Figure 3) The following case study demonstrates how these components were combined. In addition to knowledge captured in print, findings from surveys of the various users (for example, people who are homeless, support workers) influence the potential for connectedness and place making. In combination with designing/creative practice, the framework became further consolidated as a new Socio-Ecological Design Model (SEDM), to be described later, that can be applied to other situations to foster wellbeing—and in Farrow's terms potentially *cause health*.

PHASE TWO: Collaborative Design Process: A case study

The integration of the theoretical framework and the case study demonstrates a creative-based research-through-practice methodology. The case-study is inner city day centre for homeless people Australian capital city where people (aged over 18) can come for breakfast five mornings per week and collect additional food as well as attend to their personal hygiene and collect clothes and blankets. A limited family support service, which operates in late afternoon provides an evening meal. The outreach and engagement program incorporates rostered medical, psychiatric, dental, legal and financial support. Office accommodation for a range of support-service staff is on upper level.

Contextualizing the place (as referred to Figure 2) and identifying relevant environmental characteristics (as shown in Table 1) provided the starting point for exploring the environmental design and its potential impact on the facility's homeless visitors. Knowledge of both the Provider's clients and the experience of the environment are important to the designers and managers for a successful outcome.

The Client Profile **(**people who are homeless) is diverse with varying needs and desires and with different levels of mental health.[22] Homelessness is recognized as a possible contributor to the increasing cognitive impairment levels in

our society and the difficulties in managing the environment by people involved are not readily understood. For example, people may need to negotiate his/her position and cannot just take for granted their surroundings as, do others without the impairment do.

Service organizations providing assistance are seeking to maximise the benefits for their clients in both practical and emotionally supportive ways. Those who are homeless are some of the most vulnerable in our society, thus particular care should be taken in the design of built environments that homeless people are known to frequent. In Australian studies[23,24] there are varying interpretations of the relationship between homelessness as a cause and/or an outcome of poor mental health. For younger homeless people the research refers to frequent feelings of isolation and demoralization, which is compounded through substance abuse. Johnson and Chamberlain's[24] research indicated that 79 per cent of those with mental health issues had been homeless for at least one year and 50 per cent for at least two years. The World Health Organization's (WHO)[25] defines impairment as any loss or abnormality of body functions or structures including psychological, physiological or anatomical aspects. Of particular concern are those disabilities that result in specific restrictions, which affect the core activities of self-care, mobility or communication; or schooling or employment restrictions; in other words a person's ability to cope with day-to-day life.[26] The Australian Bureau of Statistics (ABS)[27] reported that 3.4 per cent or 770,500 Australians had a psychological disability in 2012. In addition, ABS noted a 2.6 per cent increase in those with intellectual disability from 2009 to 2012.[28] Thus it is becoming increasingly urgent to give consideration to if and how those with some form of cognitive impairment may be coping in our dynamic and changing environments.

Characteristics of cognitive impairment that are relevant to environmental design include visuo-spatial processing skills, panoramic visual imaging and varying abilities to tolerate stimuli.[29-33] The processes of odour identification, detection sensitivity, discrimination and memory are all affected. As memory and attention deficits are at risk to over stimulation, tasks such as reading, listening to music, watching television or other associated visual and recreational activities can become more difficult because of their disorientating effects. Therefore, design options for facilities specifically intended to support people who are homeless need to consider how people with a variety of mental health issues may interpret or experience a setting.

The Process adopted is discussed in relation to the case study. Case studies require 'construct validity', external validity and reliability of results.[34] Therefore, the collection of appropriate data reduced researcher subjective bias via conversational interviews and focus groups involving all the Provider's representatives at the facility and conversational interviews being recorded with the end users of the facility. Physical environment data was collected via photographic records and construction drawings. External validity to establish whether the findings can be generalized beyond the immediate case was based on using the socio-ecological theoretical framework as proposed by Kloos and Shah[3] and integrated into the original study.[12] The reliability of results was maintained by documenting the procedures used so that future investigators could repeat a similar investigation.[34]

Figure 4 captures how the socio-ecological approach was applied to the process of research. Peoples' needs were accepted as being primary drivers for changes in the physical environment so that the social environment and interpersonal relationships are key domains.

Input involved the Provider and the user groups and included office staff, support teams, kitchen staff, security staff, management personnel, and the homeless persons at different times of day (breakfast group and afternoon family trial group). In recognition of the importance of listening to the users of the building the researchers sought to both gather information from the users; and then to check with the users that the researchers had interpreted and prioritized the information provided in an appropriate way by applying it to the design ideas. In relation to the person-related domains there were three key investigative foci identified--operational issues, understanding the client group and the provider experience.

To understand the physical environment the building and the surrounding physical context was examined. This included a walk through the building and around the surrounding precinct. The building examination included an exploration of the physical potential and possible interventions as well as identifying an image that represented the Provider and the homeless user-group.

PHASE THREE: Reflections

Following occupation, the Provider's staff and the architect were interviewed to ascertain if the process applied had led to an improved quality of life for the homeless clients and the staff. Following the conversational interviews the transcripts were coded. Each code was constructed from

themes mentioned in the interviews. Fifteen codes were identified. Some were more frequently mentioned than others—primary codes. These are summarized in the following Table 2.

Table 2: Facility's Aspects

CODE FREQUENCY	CODES IDENTIFIED
PRIMARY CODES (4 themes or more)	Access; Safety; Identity & Image; Impact; Security; Spatial Aspects; Interaction;
SECONDARY CODES (2 or 3 themes)	Surveillance; Layout; Elements;
OTHER CODES (1 theme)	Diversity; Facilities; Storage; Stimuli; Family Foundation

The details of key aspects raised (primary codes) regarding the new design include:
Access: Access has improved physically and perceptively—areas are visually accessible on arrival, deliveries to the Centre have improved. People can carry out activities but the television is controlled due to its social and emotional impact. The place can adapt to different usages allowing access to various services and initiatives.

Identity & Image: This code refers to social identity, a place to support clients, and a place for friends. Its identity is described as a sense of place, a real drop-in place, and a happy place. The image is visually attractive and accessible; and the image is impacted upon by the colour choices, the activities enabled, and associated interactions including those that foster clients to help themselves or contribute.

Impact: The redesign provides additional aspects and a potential for future services. The layout has reduced pressure on consultants and improved the way they can operate and the equipment and space available.

Interaction: Interactions were generally believed to have improved—for consultants, staff, clients. The additional space and new layout help build rapport and lead to changed behaviours between clients and staff.

Security: A range of behaviours are predicted so clients are met at the door and welcomed in. The spatial redesign has impacted on security demands as people can move around more freely, and in association decreased the stress and perception of risk.
Spatial Aspects: The spatial impact is high as circulation flow is improved, congestion is reduced, it allows for different activities, assists the staff in their work, altered the atmosphere positively, and the increased flexibility enables privacy and increased auxiliary rooms.

In summary, the environment has improved the atmosphere, the functionality, and the quality of interaction, place identity, as well as the feelings of calmness and safety. In association, both clients and staff identified the improvement of the quality of the facility for them.

In regard to the process, perspectives from management and architectural design were also collected. Key areas for consideration arising are design philosophy, the collaborative process and the limitations to the recommended outcomes, and the compilation of the brief (Table 3).

Table 3: Reflections on the Process

CATEGORY	EXAMPLES of ISSUES
Design philosophy	• Collaborative approach • Keeping staff in the loop • Feasibility and Innovation • Freedom of movement
Collaborative process	• Design sketch development and implementation • Relationships with builders, project manager reflect intent • Need to stagger stages to allow client functioning • Need to rethink previous ways of working and expertise
Limitations	• Limitations in adopting collaborative brief and sketch plan due to constraints (such as budget, space m2, strata title constraints)
Briefing process (and inclusions)	• Briefing process to get maximum information • Shifting client [staff] members with differing ideas over period create difficulties • Design priorities and client priorities (i.e. sound; storage; client demand; movement; ablution areas) • Staff love job rather than doing a job • Staff experience included consciousness of dangers • Adoption of sketch design components and philosophies

In summary the briefing process undertaken by the researcher-designers instigated change and supported the philosophy of the client group to commence from a position of the clients as capable people. The organization, through its staff engagement, had a strong sense of what may be possible. However, it should be recognized that constraints arose which lead to modifications throughout the process.

Results

The results take two forms. Firstly, a Model (SEDM) arose that captures the three attributes of the strategy. Secondly, an informed set of parameters for designing a public facility for people who are homeless—physical aspects that embody social and psychological parameters.

In theory, all design briefs are built from the acquired knowledge of site, organization and users. So what does this Model provide over and above that ideal? It is the embedded principles that are key to a Socio-Ecological Design Model for the creation of places. The *creative-based research-through-action process,* which involved the four constituent aspects—theory, design thinking, user-informed place-making, and case study application—demonstrates how each aspect in isolation would limit the understanding of the whole. Refer Figure 5.

The theory challenges, yet also informs, any service provider or project team about what is known, what could be, and triggers speculation—the 'what if' aspect. Design thinking involves both a knowledge base (about design, typologies, user groups, and design-process) grounded in experience, as well as a practice (tacit and evolving) of generating new ways of addressing taken-for-granted situations. The Case Study was a means to embrace reflexive processes through the integration of the voices of those people with vested interests of any sort. As a result it involves risk and loss of control by the designer and/or service provider executive who traditionally have been considered the experts. Their role becomes that of facilitator, translator, and integrator of the issues as they arise and evolve, providing choice and recognizing the diversity of requirements.

The resultant proposal developed through the case study incorporates staff knowledge and experience, as well as principles drawn from the literature. The development of a design strategy[1] seeks to create a built environment that will capture the seven aspects of the design brief discussed earlier. In summary:

a. create a clear identity and suitable atmosphere for the Provider and clients
b. provide an efficient functional layout that meets operational needs including improved accessibility (physical and perceptually)
c. enable spatial relationships that will increase communication and surveillance (and encourage self-care of staff and clients)

Affordance and adaptation are intertwined—environmental potential and the resources within each person impact upon one another. Collectively, the physical outcome of the act of designing will allow or limit the potential responses due to the constituent design elements and their combinations; and also it will enable forms of engagement and facilitate meaningful connections (positive or negative)—including belonging, a sense of control, and personal identity. In all environmental typologies where the target users are not economically contributing to the facility it is still important to gather user input as ideally all environments should help a person thrive and develop.

Requirements for Facilities for People who are Homeless

The following data was provided from numerous sources. Initially this was drawn from senior management, an initial staff focus group session, as well as discussions with people who are homeless at the Centre. These preliminary ideas were then presented at three review sessions three months later: (i) with three clients; (ii) the Provider's staff; and (iii) with the Provider's Executive. The design requirements were developed through these latter sessions and are reported below as: Functional Requirements, Wellbeing Requirements, and Design Essentials.

***Functional requirements*:** In order to successfully carry out the designated functions, the facilities need to be both physically appropriate and also support the wellbeing of staff and clients. The comments were used as a starting point for the redesign proposal. It is of note that two of the environmental characteristics identified in Table 1 as having an impact on the nature and quality of emotions raised for people with mental health issues were explicitly raised by staff as necessary functional requirements. They were to support social interaction and recreation (as expressed by avoiding the creation of physical barriers between clients and staff) and controlling noise levels (as expressed by creating quiet spaces for staff, clients and service providers). Table 4 highlights staff concerns with both some

[1] In Australia it is mandatory to consider the national Building Code and the Australian Standards as a starting point for all designs.

physical aspects of the day centre but also indicate some of the concerns related to the wellbeing of building users.

***Wellbeing Requirements*:** As shown in Table 1 peoples' well-being will be impacted by the characteristics of the physical environment. The suggestions and comments from the staff, clients and management about well-being are shown in Table 5. Also shown in Table 5 are environmental characteristics identified in Table 1 as having an impact on the nature and quality of emotions raised for people with mental health issues.

Table 4: Day centre physical space needs

Physical space needs
Dining area - too small/ not designed for physically **disabled people**
Inadequate existing storage: for food, toiletries, clothes/blankets, client bags.
Interaction between staff and clients: Avoid creating physical barriers between clients and staff
Safety: Allow staff clear exit paths
'Quiet room/space' : Desirable where staff can take client to diffuse problems
Shower and Toilets: More toilets, separate shower/ toilet facilities for transgender/disabled.
Washing machine/dryer: Highly desirable
Spaces with essential support services accessible from dining area
Entrance: People need protection from weather, avoid excessive congestion
Flow of people: Avoid cross flow of people, reduce double handling of making food and serving, remove current bottlenecks.
Staff well-being: need 'quiet' area for short breaks.
Service Providers' rooms: appropriate waiting areas nearby, acoustic privacy
Identity and Function: Is this a cultural centre? Should there be a meeting place for visiting indigenous people?

Table 5: Well-being of staff/ clients in day centre

Well-being of staff/clients
Provide alternative for people smoking or clustering outside on footpath
Minimize crowding outside and inside
Timid clients: Timid/scared clients would like transition area
Maintain/enhance staff and clients being able to freely mingle in main space:
Acknowledge potential low levels of social awareness of clients
Valuing the individuals through tapping into their unique skill sets.
Create desirable atmosphere
More welcoming face to the building
Enable more efficient, less stressful use of showers:
Avoiding staff abuse through clear signposting of services provided
Space for females in a predominantly male occupied place

***Design essentials*:** By considering both the social and physical environments three important attributes of a desirable place are identified. Firstly, the design produces a palette of physical elements that will allow or limit the potential responses. Secondly, the environment actively influences how a person (with cognitive impairment) engages with or understands the place and facilitates meaningful connections (positive or negative). And thirdly, people with cognitive impairment have particular characteristics (cognitive, perceptive, and affective) that will influence the types of control they feel they are afforded within a place.

Four environmental strategies are potentially relevant for people who are homeless; many of whom have some form of cognitive impairment. These are to ensure:

1. Client's dignity: This needs to be maintained while a sense of security for staff and other clients is fostered.
2. Security and safety: Clarity of purpose, a friendly environment and a non-confining space were highly desirable.
3. Freedom of movement: Simultaneous support for the client, protection for the staff, and the removal of the need for indirect responsibility for others' safety, and equity of service (rather than equity of access) are all intertwined.
4. Environmental qualities: Two main aspects became evident—control noise and provide distraction and some 'quiet' zones. Distractions in waiting areas need to be provided to reduce agitation. It is unclear if television is a positive distraction or not. Simple interventions such as a drinking fountain and attractive views are identified as useful distractions.

From the discussions with the relevant people it became evident that the new design will need to capture the following seven aspects.

1. Atmosphere and image: Should reflect clients and Provider; and avoid stigma associated with homelessness
2. An overall storage strategy: Based on a detailed audit of storage space requirements. Storage must be readily available and accessible.
3. Flow & Efficient Functioning: Importantly any solution must avoid clients feeling they need to protect 'his/her' back, have sufficient spaces that clients may avoid others, crossing traffic-flows are avoided, staff double handling of product and tasks are avoided.
4. Reduce triggers for client behaviour problems: Create sense of space, quiet spaces, allow for various modes of interacting
5. Foster self-care for staff and clients: for clients include clear access to social services, medical services and personal physical needs. For staff include a quiet space to recharge. Safety for staff and clients is a primary need.
6. Consistency and Clarity: clients to be advised of what is expected of them so there is transparency of rights, no hidden agendas, physical transparency
7. Sensitivity to client profile requirements - Homeless Citizens, Low Socio Economic status and Mental Health issues.

In addition, it became clear that to better serve the clients, firstly, more space would need to be allocated to encourage more people to come for food and social contact. Secondly, a more visible, attractive street presence would need to be created along the external facades of the building. And thirdly, more space would need to be allocated to specialist service providers who are assisting those coming to the Centre

Design and social consequences: Various spatial relationship diagrams (example shown in Figure 6) were initially created in order to better understand the design brief.

From these diagrams it was clear that readily accessible linkages between the dining area and required activities/services were critical for staff and clients. Spatial diagrams also identified the importance of convenient storage, particularly for client belongings and everyday client needs. A series of diagrams was produced to capture functional relationships and environmental considerations such as entry/exit points, public/private zones, views and daylighting, noise levels in different areas and storage distribution. To demonstrate two examples of the diagrams – staff zones diagram and high noise level diagram - are shown in Figure 7.

Discussion

The final design and process is reflected upon in relation to Kloss and Shah's six principles of social ecological theory and responsive environmental creations.[3] The principles are posed as questions with our reflections based on interviews and our observations. What is the impact on adaptive functioning? Positive impact was evident as people/clients (who are homeless) became more independent in getting their breakfast, helping with cleaning up, as well as attending to their personal hygiene. How does it synthesize physical and social environment research; and what are the interdependent links between physical and social environments? Issues of functionality and wellbeing are combined with a design strategy. The outcome was reported as calmer and safer. What are the individuals' perspectives of their experience of the environment, due to the occupants' previous experiences, preferences, and/or differences and does the environment impact on the perceptions, attitudes, and behaviours of individuals? All stakeholders–service providers, managers and clients—indicated positive impact. Is human adjustment enabled or the promotion of adaptive functioning emphasized? Clients were shown to engage more and staff to feel freer to interact more openly with clients—the staff could 'get on' with their support role. These six principles are very person-centred but an ecological perspective also highlights the interdependency of the context—in this case the designed environment.

Conclusion

If we return to Tarrow's five-prong approach[1] to facilitate people to live life to their potential, even for a project on a low budget in a field not recognized for cutting edge designs, these aspects were tackled. Does the case study integrate nature? Develop from something client/staff know? Include diverse sensory stimulation and experiences? And is a vital or regenerative space, with the potential to leave a legacy toward improved health? Although the sketch design attempted to more aggressively (for example, a green wall, internal light wells, and outside relaxation areas) and the final scheme could be developed more fully with a generous budget and less restrictive site, these principles are addressed to some degree. This occurs through improved light, vegetable displays, and externally with the addition of herbs, is a refurbishment of a past facility model that clients relate to, provides for a range of experiences informal and formal, provides activities to support client nutrition, social relations, and informal education, as well as providing a safe and supportive

community facility which provides a link to other networks. The briefing process described above integrates theory, design thinking, and creative practice to demonstrate a process which potential challenges the traditional approach to designing facilities for marginalized or disadvantaged people and lays an informed foundation for the final resolutions.

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Not Applicable

Figure 1: Design Thinking as a Reflective and Evolutionary Process

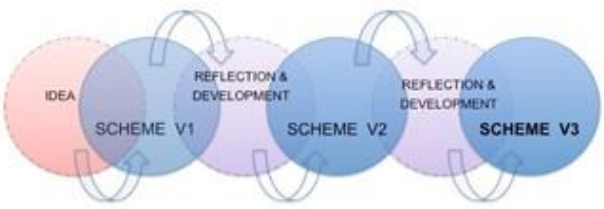

Figure 2: Contextualising a place[12]

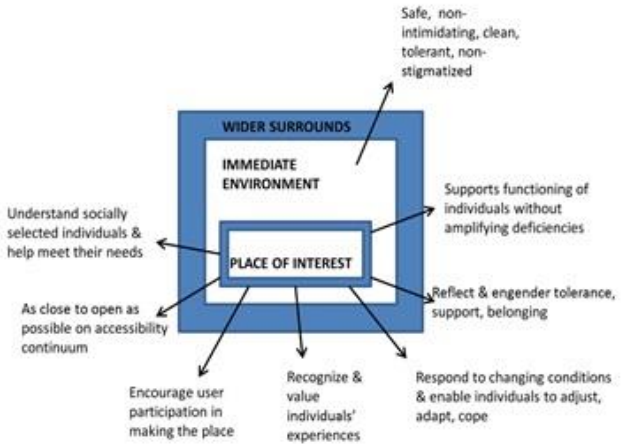

Figure 3: Components of Theoretical Framework

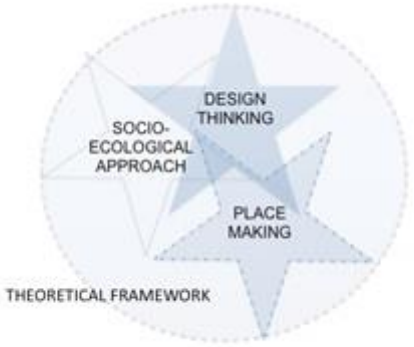

Figure 4: Development of process of research

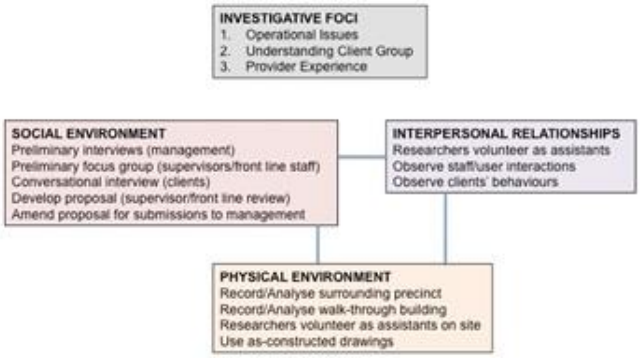

Figure 5: Socio-ecological Design Model (SEDM) Requirements for Facilities for People who are Homeless

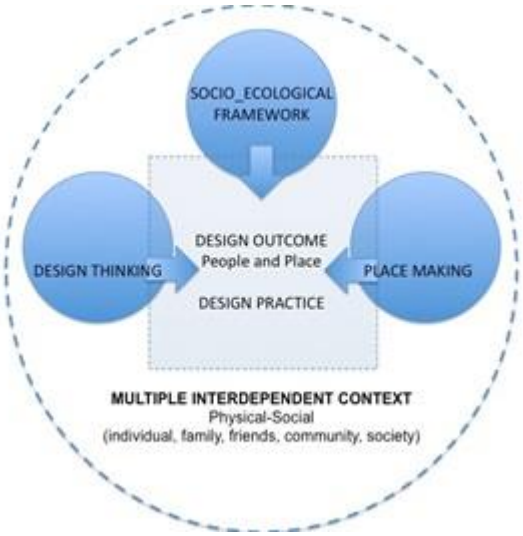

Figure 6: Generic Spatial Relationships

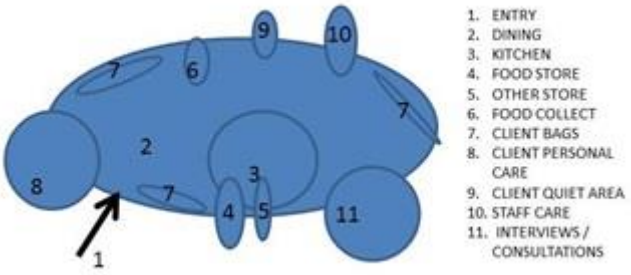

Figure 7: Examples of diagrams: staff zones (upper), high noise levels (lower)

[i] Jones (1970 [1992]) suggested a three-stage process consisting of analysis, synthesis, and evaluation; and Howard et al. 2008 in Wong et al.(2012) note the rational and imaginative dimensions as integral to designing. (Kolodner and Wills 1996 in Razzouk and Shute 2012, p333) also refer to three processes required in design thinking: (a) preparation—selecting foci, reinterpretation and visualization; (b) assimilation involves making sense of situation and prototype feedback; (c) strategic control making decisions and synthesis toward evolving priorities. Wong et al. (2012) identifies a non-linear process that is dynamic and consisting of five stages: 'situation, research (which also contains activities like data collection, decision making, and evaluation), ideation, development, and realisation. (p443) while quoting Archer's proposed six stages: programming, data collection, analysis, synthesis, development, and communication.
Wong et al. (2012 p442) outline, in contrast to more traditional models, the FBS framework consisting of eight processes: ''formulation'', ''synthesis'', ''analysis'', ''evaluation'', ''documentation'', ''reformulation type 1'', ''reformulation type 2'', and ''reformulation type 3''.