

**PLANNING AND DESIGNING
SOCIAL SPACES
WITHIN TRADE SHOWS AND EXHIBITIONS**

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BY
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Abstract

Trade shows, a powerful tool to introduce and sell products and services, need to attract, hold, persuade and inform visitors. In trade shows, well-designed social spaces can facilitate active communications and interactions between exhibitors and visitors. Besides being amenities to retain visitors, social spaces can balance or re-stimulate visitors' emotion. Based on the interdisciplinary exploration of urbanism, environmental psychology, and exhibition design, the practicum proposes a new strategy of organization for exhibition layout, structured by social spaces in various scales and levels. Case studies of existing trade shows identify the context and design factors in existing social spaces. The understanding of human behaviour and activities determines an appropriate configuration of social spaces. Systematic programming will delineate the context relating to the practicum topic. The final product is to find appropriate solutions and approachable settings to develop effective social spaces within a public trade show, improving the comprehensive quality of exhibitions.

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1 Introduction

Commercial exhibitions and trade shows are one of the significant powerful tools for corporations to introduce and sell their products and services. The purpose of trade shows is to attract, hold, persuade and inform visitors. In trade shows, well-organized and designed social space can allow exhibitors and visitors to communicate and interact each other in effective ways. The social spaces are not only supposed to provide amenities to keep visitors, but also balance or re-stimulate visitors' emotion. The intention of this study is to find appropriate solutions and approachable settings to develop an effective social space within a public trade show, which might promote the quality level of perceiving and selling in trade shows.

1.1 The Trade Show

The trade shows are an important marketing tool for corporations today. Every year more than six billion dollars are spent on trade shows in North America alone (Velarde, 2001).

The character of the trade show is described by Velarde (2001) as:

...the exhibition was there to persuade the public to buy the services on offer. In fact, the basic considerations were identical. The physical constraints were dictated by the place and the characteristics of the people involved, and the people were "selling" to people. (pp.xvii)

Today many exhibitors realize that good exhibition design for Trade shows is significant because it enables companies to market their products and services well. In relation to the growth in commercial and trade events in the twentieth

century, however, the commercial exhibition is seen as a sort of minor category of architecture. More foci need to be placed on research into the design of exhibitions.

1.2 Historical Context

The trade show is not new but derives from an ancient form of exhibition, as described, in the Old Testament as a “trade fair” (Velarde, 2001). In 1756, the first recorded exhibition took place in London (Konikow, 1994). After that, the Great Exhibition, the first International Exposition, was held at the Crystal Palace in London in 1851 (see Figure 1, 2). Over 13,000 exhibits were displayed and viewed by over 6,200,000 visitors to the exhibition. The Great Exhibition is not merely a milestone in terms of the development of trade show exhibition, but a symbol of British technological and economic achievement in the industrial revolution era (Victorian Station, 2001).



Figure 1. Exterior overview



Figure 2. Centre transept

The Crystal Palace, Hyde Park, London, designed by Sir Joseph Paxton.

Source from: <http://www.victorianstation.com/palace.html>

However, as an industry, trade shows did not evolve fully until after the end of

World War II. In Canada, the transformation of Canadian National Exhibition (CNE) was underway from 1966 to 1985. During the twenty years of the post-war, the attitude of the CNE directors has shifted to lead them to see exhibition visitors as consumers and exhibition itself as a place to sell to the public. Some existing buildings were demolished and public transportation facilities were established to form an area of Exhibition Park in Toronto (Lorimer, 1973).

1.3 Contemporary Trade Show Types

Frequently, “exposition”, “show”, “display”, or “fair” are used to describe similar types of trade events. The following descriptions, however, provide explanations of each distinct event.

Trade Fairs

Trade fairs are “exhibitions established for manufacturers and are frequently categorized. Book fairs, food fairs, motor fairs, cycle shows, computer shows, business efficiency exhibitions, museum and heritage services-practically everything has its own trade fair. They are the exhibitions with the competition, to buy components and, as often as not, to have a good night out with the boys and girls. The public is rarely invited, and barely knows they are going on” (Velarde, 2001, p.3).

World Fairs

World fairs are those super-colossal expositions that take place in specifically

designed venues, conventions centers around the world set up by international organizations. Generally world fairs have very broad categories and consist of many countries' pavilions. The meaning of a world fair has far beyond a commercial event. The host city can benefit from the international publicity in tourist attractions, economic lift, and regional redevelopment (Velarde, 2001).

Public Trade Shows

Public trade shows are the kind of annual exhibitions with massive attendance figures (Velarde, 2001). Usually after starting with a few days devoted to the press and trade visitors, these exhibitions, such as Boat Show, Motor Show, Ideal Home Exhibition, and Flower Show, open their doors to the paying public.

Overall, it seems that the primary purpose of trade fairs, world fairs, and public trade shows is to market, showcase, and sell products. A second characteristic common within many exhibitions and fairs is the existence of social spaces.

1.4 Social Space within Trade Show Exhibitions

Exhibitions are at best magic, or at worst, dreary trudges. Most people go to exhibitions with the expectation of having a good time. However, in most trade shows, visitors flow by often gloomy and sterile displays, distracted by noise and crowding, overwhelmed by sights and sounds. Some smaller exhibitors also complain that they hardly get noticed by the public because they cannot afford the

prominent position (Waterhouse, 1987).

To overcome those problems, besides adopting more tactics in promoting marketing activities, well-designed exhibition spaces are becoming a crucial factor in the success of trade shows. In recent research, it is realized that a trade exhibition is not merely an activity of viewing and being viewed, but instead is a means of communication and interaction (Velarde, 2001). Sometimes, interior designers design spaces to evoke emotional responses from visitors. These responses may include interaction, novelty, complexity, wonder, resonance, surprise and incongruity, which generate a degree of perceptual conflict that leads the perceiver to draw comparisons between the present stimulus and other stimuli (Holahan, 1982). Practitioners, educators, and exhibitors have started to consider more questions in relation to these exhibitions: How can one design a successful show mentally, physically and emotionally and how can that exhibition space be more memorable, exciting, and approachable? How can one persuade more people to attend trade shows? How can one sell more products and knowledge to the public at a trade show?

A social space is becoming an interesting point for exhibition designers to consider. In a commercial exhibition, a social space, such as entrance area, transportation area, information area, an entertainment area is space that can be occupied and identified by particular social groups at various levels. Here they can share, transmit and receive all information related to what they perceived. It is

important to investigate a social space in a trade show because well-organized social spaces can improve exhibiting quality, by attracting, holding and informing visitors. The exhibition and social uses are not same, but if we make maximum use of the space available, it can serve social purposes as well as display purposes.

1.5 Contextual Relevancy

The geographic site where a trade fair occurs can affect the social space layout. Europe and America take different approaches to the trade show space. In Europe most trade shows are broader in base, lasting longer and are held in specially built pavilions. As a result, most exhibition booths will be built several days before the show opens.

By contrast, trade shows in the United States are often held in hotel ballrooms, where set-up time is minimal and there is nothing but a broad expanse of space. As a result, show managers have to obtain partitions to divide the space into exhibit booths. The partitions are generally built in an exhibit shop, and then shipped to the site and assembled. After Navy Pier opened in Chicago in 1893, we saw the construction of halls designed especially for trade shows (Konikow, 1994).

The existence of the new halls did not do much to alter the techniques of the design, construction and installation of exhibits. However, the different venues do

result in distinct features of the social space in exhibitions. For example, in an especially designed exhibition venue, the entertainment area can be located separately away from the display area while in a temporary trade show which occurs in a hotel or convention hall, it is more convenient to combine the social space close to the exhibit booths to make better use of the space given.

Another important element related to the consideration of social space is the visitor, the person for whom the exhibition is ultimately designed.

Hitherto, visiting museums, galleries and exhibitions is still a most popular leisure activity. Waterhouse (1987) stated, "exhibitions are about meeting people" (pp.4). In a trade show, there are various levels of groups. To ordinary visitors, especially in the public exhibitions, people go to see and be seen, many will internalize icons of lifestyle culture presented in the exhibition. Professional attendees go to seek valuable information on new products. Exhibitors are more concerned about establishing industry brands, which hold the visitor's attention. All these groups will have different agendas, different instructions and different attitudes for being at a show. In an exposition gathering, however, all people will be immersed in a common pool of focused and unfocused interaction. The role of social space is to attract all communities into a common pool and hope they interact with each other effectively.

Finally, the purpose of trade shows has a significant impact on the design of the social space. Some shows introduce new products or trends; some are

organized to establish brands between professional organizations and corporations; others are held to advertise and improve merchandising. According to the set purpose of the exposition itself, design factors and solutions for the social space will differ as a consequence.

1.6 Statement of Interest

The purpose of this practicum project is to plan and design a prototype of effective social spaces in trade show exhibitions. Based on a review of existing precedents, one of the problematic issues is that the spatial scale of exhibition venues is so massive that it loses its human dimensions. In order to offer more humanized social spaces and encourage more interactive activities between visitors and exhibitors, it is important to plan legible, mixed-use, and human friendly social spaces within an exhibition venue.

Secondly, through study of the fields of urban planning, human behaviour and social psychology, I will focus on designing public spaces, such as main transit nodes and lounge areas, to informative and pleasant social spaces that will allow visitors and exhibitors to socialize and network. In the designed social space, the attendees will find out what's going on in the industry, talk to the leading professionals, get up-to-date with the latest issues, and take a break. Similar to the oasis or park in a city, the social spaces will create a sense of neighbourhood to retain more people and emphasize aesthetics and human comfort to make

networking pleasurable within the public realm. Consequently, a better exposition with enhanced marketing qualities will result. Bringing more human qualities into the exposition space will define the space better and help realize the purpose of the exhibition.

Overall, social space is a place to encourage more communication and interaction to occur casually and effectively. Both the exhibitors and visitors will benefit from a more approachable and comfort social environment within the trade shows.

1.7 Summary

A successfully organized social space can expand conventional exhibition practice, interest a broader audience, include potential consumers who are not passionate about display, and provide exhibitors with an occasion to interact with the public in effective ways. Obviously, most exhibitors and organizers will benefit from optimizing the social space in an exposition. As a result, they will sell or introduce their products and information to more people.

In this practicum, my intention is to develop a planning strategy for exhibition design that will examine the function of the social space in exhibitions. It will be an “ideal” prototype for examining issues concerning the standard of state-of-the-art exhibition. I proposed a conception of *social node*, which may encourage more attendees, from customers to salespeople, to be involved in more exhibition

practices. These complex-functional social nodes in public exhibition can not only provide a significant environment of interaction between consumers and suppliers, but also a particular scenario of interplay between products and users.

2 Inquiry Process

The inquiry process includes the gathering of information pertinent to the practicum topic, a systematic analysis of the information collected, and the synthesis of information.

2.1 Literature Review

The literature related to the investigation can be divided into the following major categories: new urbanism, environmental psychology, consumer culture, and exhibition design. A comprehensive and interdisciplinary study has been undertaken into the following areas:

New Urbanism

New Urbanism, or Neo-traditional Urbanism, is an urban design theory proposed after World War II. With the problematic effect of suburban dispersal, a trend to infill and redevelop the city emerged. Drawing inspiration from townscapes of the past, New Urbanites sought to “provide quality public spaces that are semi-enclosed, legible, and connect places that people use, in contrast to the amorphous, illegible, isolated, and largely unused public spaces”(Ellin, 1999, pp.93).

The planning and design methodology of New Urbanism is successful in contributing to revitalization of the city and public places. Their design principles were stated by Bressi (1994) as:

Public spaces like streets, squares and parks should be a setting for the conduct of daily life; a neighbourhood should accommodate diverse types of people and activities; it should be possible to get to work, accomplish everyday tasks... and travel to surrounding communities without using a car. (pp.17)

According to Lynch's theory of city image (1960), a key variable in determining environmental quality is legibility. A good place should be mapped mentally and has an easily remembered spatial organization. Lynch also calls for legible environment to have identity, structure, and meaning, which can be met with an easily understood street grid and requisite nodes, edges, paths, districts, and landmarks. From this point of view, many new urbanism projects are exceptionally legible. They stress the society, community and correlate to the shape of a city image.

One of the fundamental organizing elements of New Urbanism is the neighbourhood. They defined neighbourhoods as "urbanized areas with a balanced mix of human activity" (Duany and Plater-Zyberk, 1994, pp.9). In most of their projects, neighbourhoods should be compact, mixed-use, pedestrian friendly, and structured by public space (Calthorpe, 1994).

The node is an important legible element to structure the neighbourhood. It is defined as follows:

Nodes are points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. They may be primarily junction, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character, as a street-corner

hangout or an enclosed square...Many nodes, of course, partake of the nature of both junctions and concentrations. (Lynch, 1960, pp.47)

New Urbanism adopted this notion and developed it to be a mixed-use, pedestrian-friendly land use pattern that seeks to increase concentrations of population and activities, therefore, achieving the goals for growth, transportation, and environmental protection of a region.

In the pedestrian network there are two basic types of nodes, primary or terminal nodes and secondary or activity nodes (Rubenstein, 1992, pp.36). Primary Nodes are associated with nodes transfer where walking trips begin and end, such as parking areas and transit stops. Secondary Nodes are other locations that attract trips from primary nodes as well as from other secondary nodes, such as offices, stores, and restaurants.

In the proposed practicum, I intend to transplant the design methodology of New Urbanism to the spatial planning or configuration in the exhibition layout in order to develop a new planning strategy, which can group the exhibiting booths in a more cohesive way. If the large exposition venue in a tremendous size can be viewed as a roofed container in a town scale, and the individual showcase can be viewed as land lot in the town, then there is a certain linkage between exposition and urban planning. Hence, the social spaces for public service, such as lounge area, information kiosk, and meeting space, etc., can be regarded as the nodes of a city district that accommodate a mix of activities and uses within buildings, and a diversity of people as well. I believe, especially in terms of promoting legibility of

spatial image and interactive communication between people, the notion of nodes and neighbourhoods will contribute to shape the exhibition place more effectively and make the social space more human friendly.

Sociology and Psychology

Sociology and psychology are broad areas of the human sciences, dealing with the behaviour of human beings in groups and organization (Holahan, 1982). Two key theories in this field are social psychology and environmental psychology. Social Psychology is the branch of psychology concerned with the study of individuals in groups. It deals with the psychological processes and interpersonal interactions in groups and between groups (Rubin and Elder, 1980). Environmental Psychology is “an area of psychology whose focus of investigation is the interrelationship between the physical environment and human behaviour and experience” (Holahan, 1982, pp. 3). The issues of privacy, personal space (distance from others), and crowding are also the social concerns in physical environment (Altman, 1975).

By reviewing previous studies in environmental psychology that focus on retail and museum environments, there are adequate findings to suggest that environment affects people's emotions and behaviour. As the leading investigation of emotion, the hypothesis of pleasure-arousal proposed by Mehrabian and Russell (1974) believes that the level of emotion you feel in a given setting can be influenced by both environmental variables (e.g., light,

temperature, or color) and personality variables (e.g., sociability or arousal-seeking tendency). The result they draw is:

Individuals will want to approach physical settings, which are, apart from their other characteristics, moderately arousing and maximally pleasurable. Note also that as the pleasantness of a setting increase, the maximum desire to approach it is predicted to occur at the higher levels of arousal. (Gifford, 2000, pp.75)

The results of the hypothesis and other studies show that the emotional impact of the physical environment is indeed systematically related to approach or avoidance behaviour in individuals. Moderately arousing settings were more desirable than that were low- or high- arousal settings. However, for pleasant settings, approachability did not decline for highly arousing settings but increased instead (see Figure 4).

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Figure 3. Two major dimensions of emotion and their hybrids from a **circumplex**, or circular ordering.

Source from *Environmental psychology: Principles and practice* (pp.74), by R. Gifford, 2000.

To some degree, it unveils a myth that the highly arousal settings in

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Figure 4. The pleasure-arousal hypothesis. The desire to approach a setting varies with the setting's pleasure- and arousal- eliciting qualities.

commercial exhibition design will intrigue and appeal to more visitors. From their studies, on the contrary, the moderately arousing setting will be more approachable and may comfort and please people for a longer period. In fact, within practical trade shows, some booths in a high-load design may disappear among the ocean of shows because they are too arousing and visitors may feel lack of desire to approach them. Mehrabian and Russell's hypothesis offers an approach to analyze the relationships between physical environments, psychological emotions, and human behaviours within commercial exhibitions. Particularly, it will be useful in choosing interior materials, colours, lighting and other fixtures.

Consumer Culture

Waterhouse (1987) indicated that exhibitions are just one of the many media available to assist companies in their promotional and marketing activities. In simple terms, the commercial exhibition is designed to sell and show products. If we view the trade shows in a mass consumption environment, the place and consumption are connected- not simply for the obvious reason that people must consume things in place but in the more important sense that consumption is a place-creating and place-altering act (Sack, 1992).

The new experience of urban life in a contemporary consumer's world has often been characterized as the perception of being surrounded by strangers and overwhelmed by crowds. One of the important aspects of a consumer society is

that self and identity are discovered by what is consumed. Some theorists even manifested that “advertising replaced what had previously been the social fabric of communities, becoming, in effect, a central source of cultural values” (Sturken and Cartwright, 2001, pp.193).

Commodities also affect the structure and quality of the places in which they are sold. Department stores, shopping malls, and trade shows, are designed to create appealing contexts to enhance consumption: they become stage settings and even spectacles. The relationship between the built environment and the visual consumption of places might be well embodied in the commercial spaces. The environment must be attractive for those commodities to sell. This means that the store acts as an advertisement for the commodities, displaying them in an attractive way with more attention to layout, lighting, and displays (Sack, 1992).

Exhibition Design

There is no doubt that the theory of exhibition design is vital to guide designers to the success of trade show design. It deals with aims, information, objects, techniques, people and space. Many principles and approaches could be adopted in designing the social space in trade shows. For example, Velarde (2001) demonstrated that the aims of exhibitions could be summarized in the following set of objectives: to sell, to persuade, to expose, to parade, to inform, to explain, to advise, to generate interest, to delight, and to enlighten. There is a potential possibility for a social space to accomplish these aims effectively.

However, regarding the exhibition planning and how it shapes the space, there is little systematic research or theory on commercial exhibition design because it is still a very new industry. Usually, in the reality of trade show operation, the available exhibition space inside is divided into packages of boxes in certain footage. These boxes are allocated along predetermined aisles in grid line. Conventionally, the layout plan is normally arranged to accommodate a simple structure called a shell scheme, which is “an empty stall of a consistent size, possibly four metres deep by four wide, with thin board walls papered and painted white, an adequate floor covering” (Velarde, 2001, pp.4). When exhibitors go to a trade show, the first thing they have to confront is the site selection. There are many factors affecting the choice. Corner sites, island sites, and sites facing the entrance or down to a main aisle are obviously going to be noticed by more people than those sites hidden in back corner or in the middle of many other identical booths. The one thing unfortunately out of control is choice of neighbour when conflicting displays juxtapose each other.

Exhibition designers have suggested two fundamental ways of displaying information, which are named as a systematic display and thematic display (see Figure 5). In *Designing Exhibitions*, Velarde pointed out that there has been a strong move towards thematic displays in recent years and the motif titles make evocative and inviting themes. However, he also admitted that a visitor cannot easily be coerced and the public responds badly to formalized and compulsory

routes.

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systematic display layout

thematic display layout

Figure 5. A systematic display will be laid out in some explicit order – chronological or scientific. A thematic display will be laid out as a story, around a central theme.

Source from: *Designing Exhibitions* (pp.97), by G. Velarde, 2001.

In addition, as the exhibition is a place without the necessary attributes of durability and permanence, but close to temporary installations or settings, light modernity can be characterized by the flexible design or temporary environment in micro-systems.

2.2 Case Studies

Being one of numerous important inquiry methods, case studies can provide a source of practical information on potential solutions related to the practicum topic. Two case studies were chosen as existing examples of social spaces within national and international public trade shows. According to my personal interest, I focus on those cases for interior industry public trade shows, such as furnishings, furniture, and home shows. Based on available materials and information, the

analysis focuses on project purpose, program components, criticism and limitations, and lessons learned. Other relevant data were collected built on a set of codes, such as location, size, client, designer, project background and history, design and development processes, and future plans.

IIDEX/NeoCon Canada

As the largest exposition and conference for the design and management of interior environments in Canada, IIDEX/NeoCon Canada attracts 14,000 from the design industry and business community each year and delivers the latest products and the newest trend information to the professional and the public, with a focus on all areas of design, including workplace, retail, healthcare, residential, hospitality and sustainable design (IIDEX/NeoCon Canada, 2003).

The site is located in National Trade Centre, Toronto, which provides an example of design-build on a massive scale. The total floor area is 1,177,000 square foot, including three main exhibition halls, heritage court, and annexes. In keeping with the current proliferation of big box buildings, the exhibition halls are structured with a 90 by 120 foot grid of steel columns to ensure flexibility for visiting shows (Robert, 1997). As shown in Figure 6, the entrance galleria is lined with window benches, which provide a breakout space for people to stay.

Inside the exhibition hall, some design-build social spaces, a cafeteria and four food chain stores, are planned along the perimeter. Other temporary social spaces, including bookstore, retail, lounge, and lecture place, are arranged

together with exhibition booths (see Figure 8). In terms of interior details, the elements of these social spaces, such as seats, patio-like balustrades, and free stand hotdog sellers, make me recall the image of cityscape. I found the attendees were more willing to stroll around the spaces close to the show booths because they seemed more intimate than one usually sees at trade shows (see Figure 7). They not only serve as a physical breakout area for visitors and exhibitors, but also provide a scenario for entertainment activities. However, the whole layout plan is still in a straight grid and people sometimes cannot navigate very well.



Figure 6. Entrance galleria is lined with window benches.
(Photography: Mei Wu, September 2003)



Figure 7. A lounge space surrounded with small booths is more intimate.

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Figure 8. IIDEX/NeoCon 2003. Social spaces are green areas as shown.

Source from: <http://www.merchandisemart.com/neoconcanada>

National Exhibition Centre

The National Exhibition Centre is located on a 125-hectare of farmland nine miles away from the center of Birmingham, the heart of the industrial Midlands linking London and the North-West of England. The exhibition halls complex completed by Edward D. Mills and Partners in 197 consists of six halls of different sizes, all at ground level with a total area of 92,900 m² in exhibition space, with full supporting facilities for the developer (NEC Limited), exhibition organizers, exhibitors, contractors and visitors (Mills, 1976).

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Figure 9. Overall venue plan of National Exhibition Centre, Birmingham, UK.

Source from: <http://www.necgroup.co.uk/visitor/thenec/>

Five of the halls interconnect and radiate from a central service and circulation zone – the central piazza, which provides the first access to the visitors to the hall they wish to visit. Thus, it reduces walking distances and visitor fatigue. In addition, the central piazza also accommodates many facilities needed by both visitors and exhibitors. The administrative office, shops, banks, information units, security suite, and communication centre are all located around this piazza (see Figure

10). The designer created an entirely different environment from the exhibition space. Inside the halls, the interior environment has been designed as an unobstructed neutral environment for the exhibitions, which will create their own interest in colour, layout and design. The background of the halls has deliberately been kept at a low key to avoid competing with the exhibits and thus to give maximum freedom to exhibition designers. A modest level of high-bay natural lighting has been provided as a compromise interior lighting solution so that the erection and demolition of exhibitions can be carried out in normal daylight conditions.

For each exhibition hall, the major public catering areas are planned individually based on the concept of the “pods”. “Service areas around the outside of the halls like seedpods round a plant” (Mills, 1976, pp. 19). Each hall has one or two pods which contain the catering facilities, men’s and women’s toilets and first-aid rooms. Every catering section includes a restaurant seating from 120 to 240 people and a fully equipped bar, which has its own separate identity with a wall display. The architects have carefully considered the interior design of all catering areas, and the endeavour has been to create an environment that contrasts with the colourful and often noisy and garish atmosphere of the exhibition areas. Therefore, the objective has been subdued lighting in the bars, quiet and restful colours in the restaurants and comfortable and well-designed furniture and furnishings.

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Figure 10. Central area of National Exhibition Centre. It not only consists of various needed facilities, but creates an environment of interior natural garden as well.

Source from: *The national exhibition centre* (pp. 36). by E. D. Mills, 1976.

From these two precedents, it is observed that social or public spaces can be used to retain people, provide places for socializing, and optimize the planning of exhibition layout as well. In IDEX/NeoCon 2003, some exhibition booths are grouped together with a close motif, “green material” for example, to shape a small community with a particular identity. As the major public space in NEC, Central piazza plays a significant roll to interlink six other exhibition halls and give a memorable landmark to the entire exhibition venue, which solves the issue of spatial cognition and wayfinding within such a massive scale space effectively.

In interior architectural elements, they both adopt neutral and moderate colour and materials, without conflicting with exhibiting displays but keeping a pleasurable and approachable setting still.

2.3 Summary

Based on the practicum topic, the above literature review and case studies investigated in three major levels from overall to details, which particularly focus on space organizing and planning, human senses, and exhibiting techniques.

The principles of new urbanism provide an inspiration to rethink the layout of exhibition. When linking a massive trade show to a town, and showcases to land lots, the vision of social space as a node emerges, which will anchor as an ideal place for networking and socializing within trade shows. The study of social psychology and human behaviour gives a theoretical base from the point view of

human senses. Further more, M-R hypothesis brings out an issue regarding to comfort and pleasure level of human beings, which offers a theoretical guidance in choosing and designing the settings within commercial environments. The review of practical exhibition design techniques and approaches distinguishes the special features of trade shows from other building types.

In general, the inquiry process addresses the theoretical considerations and related materials. Consequently, it will generate the design solutions and guiding principles.

3 Design Strategies

Based on former literature review and case studies, three primary design strategies are proposed: Distance control, Interior streetscape, and Modular design. Distance control is an important prerequisite for planning and designing the forms of social spaces and trade show layout. In this case, when the massive exhibition venue is treated in a context of urban space, interior streetscape is a useful tactic to form a powerfully structured, vividly identified, and highly imageable environment within trade shows. For construction methods and materials, modular system design is the implement to form the social space in a flexible, versatile way with relatively less limitation in creativity.

3.1 Distance Control

In terms of human senses and communication, the study of social dimensions is related to the most comprehensive social activities, such as walking, resting, seeing and hearing in both public and private spaces. To familiarize and control those dimensions in trade show planning is a necessary prerequisite leading to the success of exhibition layout.

Walking usually is the mere transportation type within trade shows and exhibitions. To reduce the visitor fatigue and optimize the circulation route are the first considerations of design planning. Some design achieved success due to the unique approach to resolve this issue. For example, F. L. Wright designed the

spiral corridor along the gallery in Guggenheim Museum. For the one level space, however, it is more important to define the tolerances of walking distances.

As a physical act, there are narrow limits as to how far most people can and will walk. In a large number of surveys, 400-500 metres is the acceptable walking distance for most people in ordinary daily situations (Gehl, 1987). For children, old people, and disabled people, this number is often considered to be less.

The fact that it is tiring to walk makes pedestrians naturally very conscious of their choice of routes. Whenever people walk, they prefer direct routes and shortcuts. The planning of long, straight routes should be avoided; conversely, the alternating view along the route and small squares often make the walking distances seem shorter psychologically.

Similarly with walking, standing and sitting activities are two important behavioural patterns that are required on the physical environment (Gehl, 1987). Within trade shows, the essence of sitting and standing is resting, which is one of primary design purposes of trade show mentioned earlier. When people stop to talk to someone, to browse the exhibition stands, or to see what is going on, a good and comfort place needs to provide for resting.

In a study of the preferred areas for lingering in recreational areas, Derk de Jonge (1968) mentioned a characteristic *edge effect*. People are found to prefer to stay along the facades in a space or in the transitional zone, called *node* as well, between one space and the next, where it is possible to view both spaces at the

same time. At the edge of the forest or near the façade, one is less exposed and not in the way of anyone or anything. Thus, when one's back is protected and the personal territory is reduced to a semicircle in front of the individual, it is easy to keep watch and to react. The edge zone offers a number of obvious practical and psychological advantages as a place to stay and linger.

Not only do the physical activities have spatial requirements within certain distance, but also the contact between people requires distance control. Gehl (1987) illustrated that physical arrangement can promote or prevent visual and auditory contact in different ways (see Table 1).

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Table 1. Physical arrangement can promote or prevent visual and auditory contact.
Modified based on the table retrieved from *The life between building* (pp.64), by J. Gehl, 1987.

Among the above factors, the distance between observer and object in a visual contact is significant. According to the precedent studies, a combination of several social fields of vision is proposed (see Table 2). For example, the maximum distance for seeing events is around 70-100 metres. At this distance, it

is possible to determine with reasonable certainty a person's sex, age, and what the person is doing. When the distance is reduced to 20-25 metres, most people can perceive relatively the facial impression of others. At this point the meeting begin to become truly interesting and relevant in a social context (Gehl, 1987). Lynch (1962) gives spatial dimensions of around 25 meters as immediately comfortable and well dimensioned in a social context.

On the other side, for the auditory contact, the sense of hearing has a less functional range. It is effective to hold conversation within distances of up to 7 metres and becomes more difficult beyond this distance. Within this distance, the ear is quite effective, and people feel easier engaging in actual conversations.

Hall (1966) terms a number of distances as intimate, personal, social, and public (each with its close and far phase) to describe different communication forms in various social situations. Among them, social distance (1.30-3.75 metres) is the distance for ordinary conversation among friends, acquaintances, neighbours, co-workers, and so on. The fact that distance is used to regulate intimacy and intensity in a social context implies that a certain space is needed for conversations. Based on Hall's theory, a number of surveys in Australia, Canada, and Denmark have demonstrated that a distance of 3.25 meters appears to be very useful in social distance (Gehl, 1987).

Because walking, resting, seeing, and hearing are the most common activities within trade shows and exhibition, a knowledge of spatial dimensions in relation to

those activities and senses can be used to promote the trade show planning. In my practicum project, the strategy of distance control not only helps to determine the location and scale of social spaces within trade shows, but influences the overall exhibition layout under a fully social consideration as well. For instance, the social space, a good place to sit and rest, should be located at regular intervals in the transition of visiting route to release the visitor fatigue. To promote the communication between various groups in social spaces, the spatial dimensions should be controlled within 7 metres. As strong design evidence, the strategy of distance control is the first significant step to start trade show planning and designing.

Control Distance (metre)	Activity /Human Sense	Description	Remark
500 m	walking	acceptable walking distance for most people in ordinary situation	
100 m	vision	the maximum distance for seeing events; can perceive person's age, sex, and action	
25 m	staying, vision	comfortable space dimension to stay in public; can perceive person's facial expression	
7 m	hearing	effective distance to hold and engage in conversations	
+/- 3.25 m	communication	social distance for ordinary conversation among acquaintances	

Table 2. Relationships between distances and human senses and activities in social context.

3.2 Interior Streetscape

As mentioned earlier, the massive exhibition venue is viewed as a roof covered urban space in this project. This means that in studying the physical relationships of social space to the exhibiting area and in strengthening the spatial identity and image, the design considerations should be based on a context of urban space and the designer should be able to translate the concepts into readable spatial forms and images finally.

Presented in *The Image of the City*, Lynch (1960) has classified five elements that people use to map an environment, which are paths, nodes, edges, districts, and landmarks. Three components are founded for the analysis of environmental imaging:

- Identity*, or objects in background;
- Structure*, or objects in relationship to each other;
- Meaning*, or personal, societal, or figurative belief.

Lynch focused on the identity and structure of spaces to discern what makes cities imageable or known. He stated that the elements of shape, color, texture, arrangement, and sensory quality facilitate the legibility of space, which gives the observer clues to its identity and structure. Certain images and visual clues are perceived similarly by groups of people who share similar backgrounds, activities, or routines. Based on this point, the streetscape is the most common physical features for most people to be aware of in their daily life.

In many other practical projects, the strategy of interior streetscape is an

effective way to form a strong mental image of interior public space. The most popular application may be the interior environmental design in shopping centres and pedestrian malls and it has achieved a great success (Rubenstein, 1992).



Figure 11. Mall pedestrian street.
(Photography: Mei Wu, December 2003)

Some institutional buildings also use this strategy in designing public spaces. The British Museum addition designed by Foster and Partners and Vancouver's Central Public Library designed by Moshe Safdie are two well-known examples (see Figure 12). In the public entry foyer, they all have a generous glass roofed concourse serving lively pedestrian activities at the ground level. Such a public space surrounding the main functional space form a continuous piazza or court in a pleasant atmosphere.

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Figure 12. Interior perspective of Vancouver Central Library square (left) and British Museum Great Court (right).

Source from: http://www.architectureweek.com/2001/0214/design_1-2.html
<http://www.msafdie.com>

Even in office design, the concept of “office as a city” is emerging as a new trend. The renovation of TBWA/Chiat/Day office in Los Angeles designed by CWA (Clive Wilkinson Architects) offers a small city environment with main street, irregular “skyline”, green park space, and landmark structure (see Figure 13). It not only relates a highly imageable space in a well-structured circulation route, but also makes the place impressed vividly.

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Figure 13. Main street in TBWA/Chiat/Day office, Los Angeles.

Source from: <http://www.clivewilkinson.com/work/cdla.htm>

In streetscape design, Rubenstein (1992) gives the following characteristics that should be considered in design or aesthetic quality to urban space. Associated with trade show design, they can be considered to be significant design tactics to be applied to social space design.

Figure ground

Figure ground is the contrast of an object to the ground. An element appears as a figure if it stands out against undisturbed ground (ibid). In a trade show, the suspending banner, standing signage or other vertical elements can stand out as figures in contrast to exhibiting booths and build mental identity effectively.

Continuity

Continuity is provided by a series of coherent parts related by keeping a common scale, form, texture, or color for a space or area (ibid). For example, by

using the same material on booth board of a particular color along the pathway, it will give continuity and orientate visitors to the destination.

Sequence

Sequence is continuity in the perception of space that may create motion or mood, or give direction (ibid). For example, repetition is one simple kind of sequence. Any repetition and similarity of shape, color, or texture can contribute to this characteristic.

Rhythm

Rhythm is a break interrupting the sequence of repetitive elements at specific intervals (ibid). In the trade show designing, rhythm can be incorporated into a flooring pattern by creating a design with a change from carpet to vinyl floor at social spaces as specific intervals.

Hierarchy

Hierarchy is a system to rank sizes or colours (ibid). In a trade show, the primary node may be a dominant space by having the largest size or the most prominent position, while the secondary nodes may have smaller size or subordinate position.

Sensory quality

Sensory quality is a further dimension to the sense of a place, the visual impression and appeal to senses of hearing, smell, and touch (ibid). Features that please the human senses can give the social space an atmosphere that attracts

people. For instance, well-designed banners, soft illumination, comfortable sitting areas in which to view other people, and appealing activities all help create this pleasant environment.

Motion

Motion is a process of temporal alternation or geographical position changing. It reinforces direction or distance and gives a sense of form in motion (ibid). When visitors are walking along the exhibition, their observing points and visual angle of objects keep changing. Awareness of motion can help create interesting and appealing space to attract people.

In general, this strategy gives a way to organize the settings of social space. When designing the wallboard, flooring, ceiling, lightings, or furniture, their shape, color, texture, pattern, and arrangements are supposed to comply with the above design principles. In this way, the social space will provide an attractive combination of visual legibility and psychological comfort with the reinterpretation, integration and transformation of streetscape within trade shows.

3.3 Modular Design

For exhibition designers, the construction methods, systems and materials have always been the primary technological issues to be concerned with. As an exhibition lasts for a limited time only, it has always been felt that a construction that lasts for the length of the exhibition is a good design. As Spence (1951)

stated, “a lightness in conception, a simplicity of idea, and the capacity to look fresh at the end of the exhibition period are essentials” (pp. 114). Although module, “a series of standardized units for use together” (DeVido, 1996, pp.185), is nothing new, there are many reasons to adapt modular design in trade show and exhibitions. The most prominent advantage of modular system is the ease of assembly and the flexibility offered by its modular design.

Since 1974, the trend of modular system design in exhibiting has emerged (Konikow, 1994). Instead of a rigid structure, designers were starting to seek separate units that could be combined in many ways. As Konikow described,

An exhibitors might have a library of elements, and put together a combination that could fit into the available spaces, and still remain attractive and functional.... the basic elements of the new systems are structural elements, components of various constructions and materials that are fitted together by machine screws or connecting elements. (pp.11)

For example, prefabricated unit, like LEGO, is a kind of construction system using broadly in trade show, which can be bought and assembled in a number of different ways. They are mainly use for installation of shell schemes or exhibition stands, which can be erected and disassembled repetitively in several days (Velarde, 2001). Such a system serves as support for background panels that carry graphics, signage, displays, or other exhibiting approaches.

However, the module is not the only requisite factor in exhibiting systems. They are more likely required to be lightweight, portable, freestanding, sustainable, easy to store and deliver, and possibly to be recycled or reused.

Through development in recent decades, modular systems have become more popular. Not only because the systems are becoming more versatile, more adaptable, but also because designers are becoming more comfortable in their use, and learning how to rely on the prefabricated elements without limiting their creativity. On another side, with the development of technology, some new materials and products, such as tensile fabric, are also seeking module as a way to form new structural system.

As a portion of exhibiting, social spaces are no different than the exhibition booths in construction method. Except for some service areas, which have already been designed along with the exhibition venue, in terms of the construction and furnishings, social space has the similar characteristics as the exhibition stands, such as temporality, flexibility, and adaptability. Based on this perspective, modular system design will be the chief consideration in selecting materials and furnishings in the social spaces. For example, the seating and the partitions can be adjusted in different ways to suit the various locations within trade shows and accommodate the different needs and activities. Meanwhile, for different exhibition zones, the alternative look of a social space can help create the identity of a community. This design strategy is used to maximize the flexibility and choices for the different user groups of the social spaces.

4 Conclusion

This study introduces the public trade show and addresses the needs and significance of social spaces within trade shows and exhibitions. With more exhibitions being held throughout the world everyday, the traditional role of trade show, selling and buying, will be infused with new function, that is, seeing and being seen. Networking and meeting people are becoming a principal purpose for exhibition attendees. To enhance the comprehensive exhibition quality, planning and designing good social spaces within trade shows have been a significant issue on which the exhibition organizers should focus.

Through a literature review of social environmental psychology, the effects of social influence in human behaviours and moods were studied. In particular, the relationships between physical environment quality and human senses were explored. The results have shown that physical environment arrangements can promote or inhibit social contact, and arouse or please human emotion. Concepts and theories, regarding the imageable and legible space for mapping in a massive exhibition venue, were explored to link the concept of community identity, and suggest that the social space be used as a node or focus of the exhibition space. A review of the trade show industry distinguished the characteristics of exhibition design from other building types due to its temporal and global features. Case studies of two massive exhibition centres show how these two different features manifest in social spaces. From this, one finds a reference for determining the

size of project building and suggests better ways to arrange the social spaces within exhibitions.

The results of the literature review and case studies are associated with three design strategies proposed consequently, which are applied to the planning and design of social spaces within trade shows. Distance control is the strategy that relates the physical activities and human senses to a social vision and, suggests an optimal distance for arranging the size, scale, and the layout of social spaces. The strategy of interior streetscape links the five mapping elements (path, node, edge, district, and landmark) systematically to form a well structured, vividly identified, and highly imageable environment within trade shows. This approach challenges traditional dull planning of trade shows, while offering a fresh visually clue in an urban context. Another strategy called modular system design is implemented to form the social space in a flexible, versatile way with relatively less limitation in creativity. It gives a principle in the choice of partitions, furniture, signage, and other design features.

This project is just one experimental study in trade show design. Understanding the meaning of social space and manifesting it in a legible way is one of the most important tasks when designing the social spaces within trade shows. It is not intended to present guidelines to all exhibition design. Instead, it suggests an effective approach to improve the exhibition quality and hopefully it will give some new inspirations to the trade show organizers.

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Appendix A Design Program

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1 Project Overview

The design program analyzes the user activities and spatial functions within social spaces to reflect the previously discussed theoretical issues and design strategies. Simultaneously, the programming process also establishes the design goals and provides guidelines for the next design stage.

1.1 Project Description

As this project is an experimental study model, there is no specific site or building. Instead, the building is a virtual big box to accommodate the social space and exhibition. The first thing to do is to define the size and scale of the building envelope. Through a study of large exhibition centres in the world (see Table 1), I propose the building envelope size to be 100-metre wide, 200-metre long, and 15-metre high (clear ceiling height) for this project. The axial distance is set as 25 metres, which is a common structural span as well as a suitable spatial dimension.

Exhibition Hall	Location	Width (metre)	Length (metre)	Height (metre)	Gross Area (m ²)
National Trade Centre	Toronto, CA	100	250	12	25,000
National Exhibition Centre (Hall 5)	Birmingham, UK	120	210	16.7	24,900
George R. Brown Centre	Houston, US	100	450	11	45,000
McCormick Place (Hall C1)	Chicago, US	80	150	8.5	12,000

Table 1. The exhibition hall size of large exhibition centres in the world.

For some large exhibition venues hosting the World Trade Fair, i.e. Milan Furniture Show or Hannover Fair in Germany, 100-metre wide by 200-metre long is approximately one hall in a cluster of buildings and can be joined or expanded in various ways. However, as the intent of this project is to develop a generic prototype of social spaces within trade shows, it is an adaptable size for a study model.

1.2 Design Goals

Social space is the space where the attendees socialize with each other. In addition to networking, the objectives of social spaces are as follows:

- To encourage communication and interaction between attendees by creating an attractive and comfortable environment for socializing;
- To strengthen the identity and image of exhibition spaces, therefore creating new opportunities for exhibiting promotion;
- To improve approachability of exhibiting stands, therefore promoting the exhibitors

In order to accomplish these objectives, the social space is designed to provide:

- An attractive oasis to visitors;
- A soothing atmosphere;
- A place of contact for all groups of trade show attendees;
- A mix of activities that could not flourish in other locations

2 User Profiles

2.1 User Groups

The users of a trade show consist of the organizers, exhibitors, and visitors. Usually the organizer is the owner or primary tenant of an exhibiting venue. They could be a local council, a limited company, or an industrial association. The space inside is allocated by the organizer and leased to exhibitors in packages of square feet or metres (Velarde, 2001).

The exhibitors usually are manufacturers or traders who lease the exhibition lot from the organizer. They are the clients who usually hire the exhibition designers. The main purpose of exhibitors is to participate in selling and introducing their services and products to the public. Both organizers and exhibitors are regarded as the secondary users of social spaces within trade shows.

The visitors consist of various groups of people and are the primary users of the social spaces. Their age, sex, and background can be very different depending on the theme of exhibition. According to the census of NeoCon trade show, for example, the attendees include architects, interior designers, students, manufacturers, representatives, dealers, end users, facility managers, purchasing managers, and so on (NeoCon, 2004). Generally the visitors are treated as the adult public (18-to-65 age group) who share the common interest in the trade show display or events.

2.2 Activities and Needs

For exhibitors and visitors, besides introducing and learning about new products in trade shows, a significant purpose in attending is networking and socializing. From the statistic of NeoCon 2002, 68.4% of attendees go for networking and social events, and 76.4% of exhibitors achieved their goal of networking at the exhibition (NeoCon, 2004). It is social spaces within trade shows that provide such space for attendees to communicate and interchange information, and networking.

The activities occurring in trade shows can be categorized as: *necessary activities* and *optional activities*, each of which places very different demands on the physical environment (Gehl, 1987).

Necessary activities are compulsory, those activities in which were required to participate (ibid). In a trade show, the necessary activities of visitors can be browsing the exhibition display, searching the interesting products, learning the information about the products, and so on. Meanwhile, the necessary activities of exhibitors are selling or advertising their products, providing product information as needed, and answering questions proposed by visitors. Because the activities are necessary, they are influenced only slightly by the physical environment.

Optional activities are those activities take place if there is a wish to participate, and, if time and place make it possible (ibid). In a trade show, they include such activities as lingering, chatting, relaxing, having food or drink,

interchanging information with each other, or observing what is happening. As these activities are optional and occur only when the physical conditions are optimal, they are especially dependant on physical environment (see Table 2).

	Quality of physical environment	
	Poor	Good
Necessary activities	●	●
Optional activities	●	●●●●●●●●

Table 2. Graphic representation of the relationship between the quality of public spaces and the rate of occurrence of activities.

Modified based on the table retrieved from *The life between building* (pp.13), by J. Gehl, 1987.

According to Gehl in *'The Life Between Buildings'*, two types of activities can be used to analyze the activities of attendees in trade shows. When the quality of the physical environment is poor, only strictly necessary activities occur. When the physical environment is of high quality, the necessary activities take place with approximately the same frequency. However, wide ranges of optional activities occur with increasing frequency. As a result, in a pleasant and comfortable social space, a completely different and broader spectrum of activities is possible because the place and settings invite people to stop, rest, and talk.

The design of details plays an important role in developing staying possibilities in social spaces. If spaces are desolate, empty, or lack interesting details, it can be uninviting. A well-equipped social space should offer many

different opportunities for sitting and standing in order to give all user groups inspiration and opportunity to stay (Gehl, 1987).

3 Spatial Allocations

3.1 Spatial Requirements

Functionally, social spaces are the areas providing information, service, and opportunities of seeing or being seen for the attendees. Usually social spaces can be individual or a mix of information spaces (including entrance or registration), lounge areas, meeting areas (forum or seminar), food areas (café bar or restaurant), and exhibition shops or bookstores. In some existing exhibition venues those social spaces are allocated in the predetermined space surrounding the exhibition space. In my project design, two types of social spaces will be allocated inside the exhibition space. The prerequisite of the spatial configuration assumes some service space for public use, such as washrooms, a restaurant, already exist in the annex of the exhibition building.

The first type will be located in the position of the “primary node”, including an information pavilion and a forum platform. The estimated floor area of each node is approximately 10x10 metres. The distance between two primary nodes is within 100 metres. The other type will be located in the position of the “secondary node”, a lounge space in the core of exhibition group. The size of the lounge space is set at around 7x7 metres.

Within each space, there should be adequate space to accommodate the following listed functions:

Information hub

- Information display
- Self service catering for café, drinks, or snacks
- Desk for customer service or administration staff
- Sitting area for relaxing
- Internet access to provide related product information
- Landmark of the district

Forum stage

- Sitting area for audience
- Stage for presenting a speech

Lounge

- Intimate seating for relaxing
- Open seating for conversations
- Self service catering for café, drinks, or snacks
- Signage to strengthen the identity of exhibition community

3.2 Circulation

Circulation is devoted to the movement of the trade show attendees. In the same way as exhibition booths, the social spaces must also be easily accessible and the circulation adequate for the activities. The pathway or aisle should be wide enough for people to pass through, stand, look or bend to look. There is also

room for people to stop to talk or to exchange information without disturbing the solitary viewer (Velarde, 2001).

The main aisles are 7 metres wide and the secondary aisles are 4 metres wide. On the main aisle the directions should be clearly indicated.

4 Programming Wheel

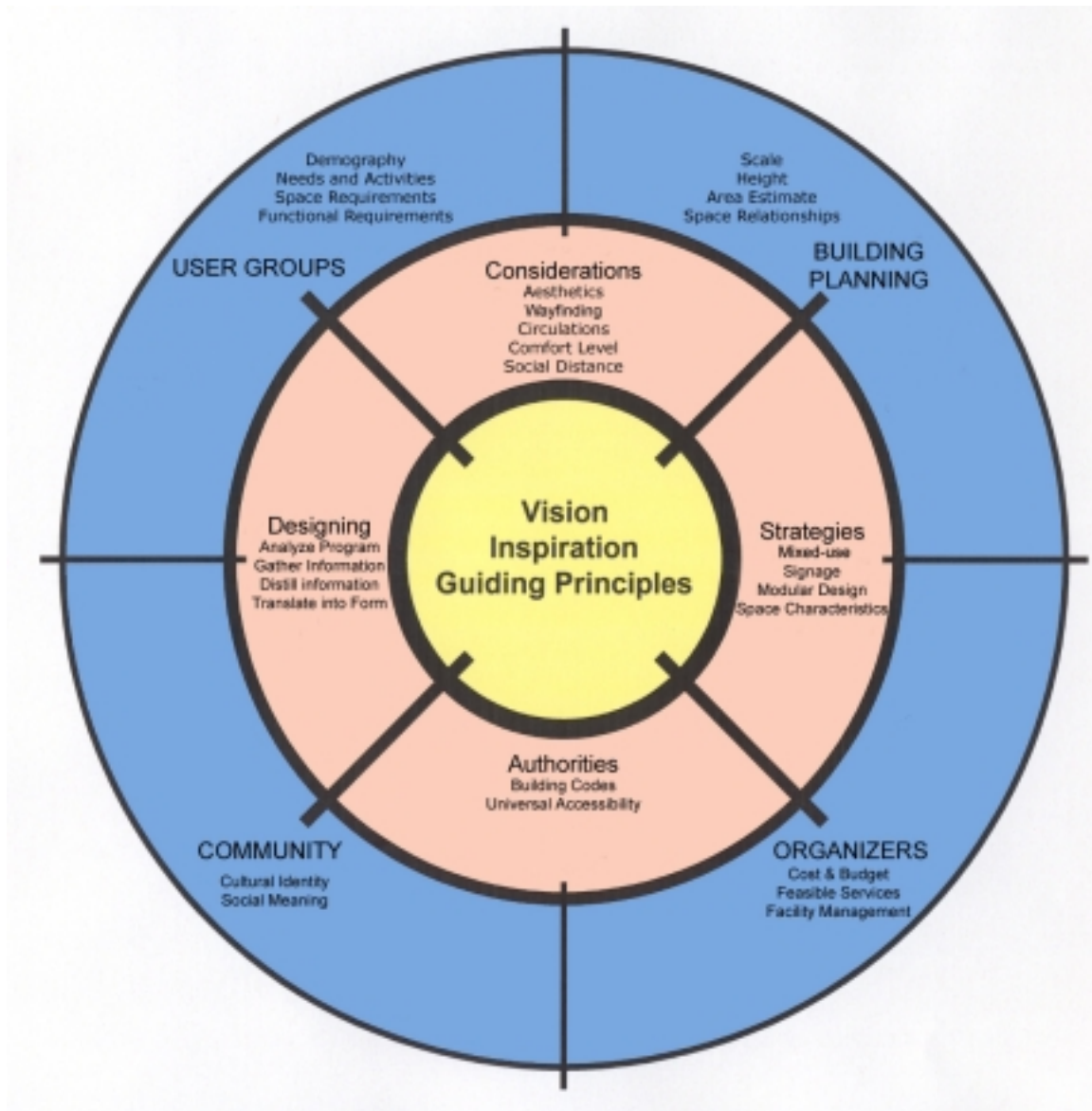


Figure 1. The programming wheel shows the integration process of programming.

Bubble Diagram

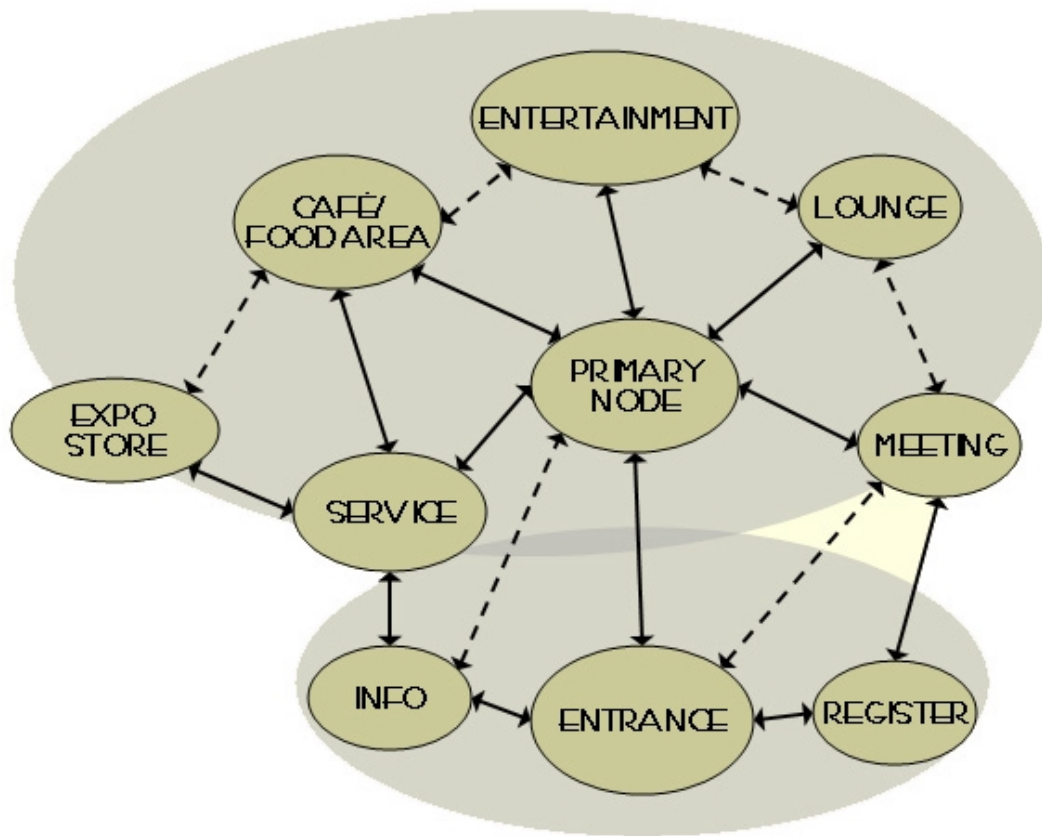


Figure 2. Relationship of social spaces within conventional trade shows.

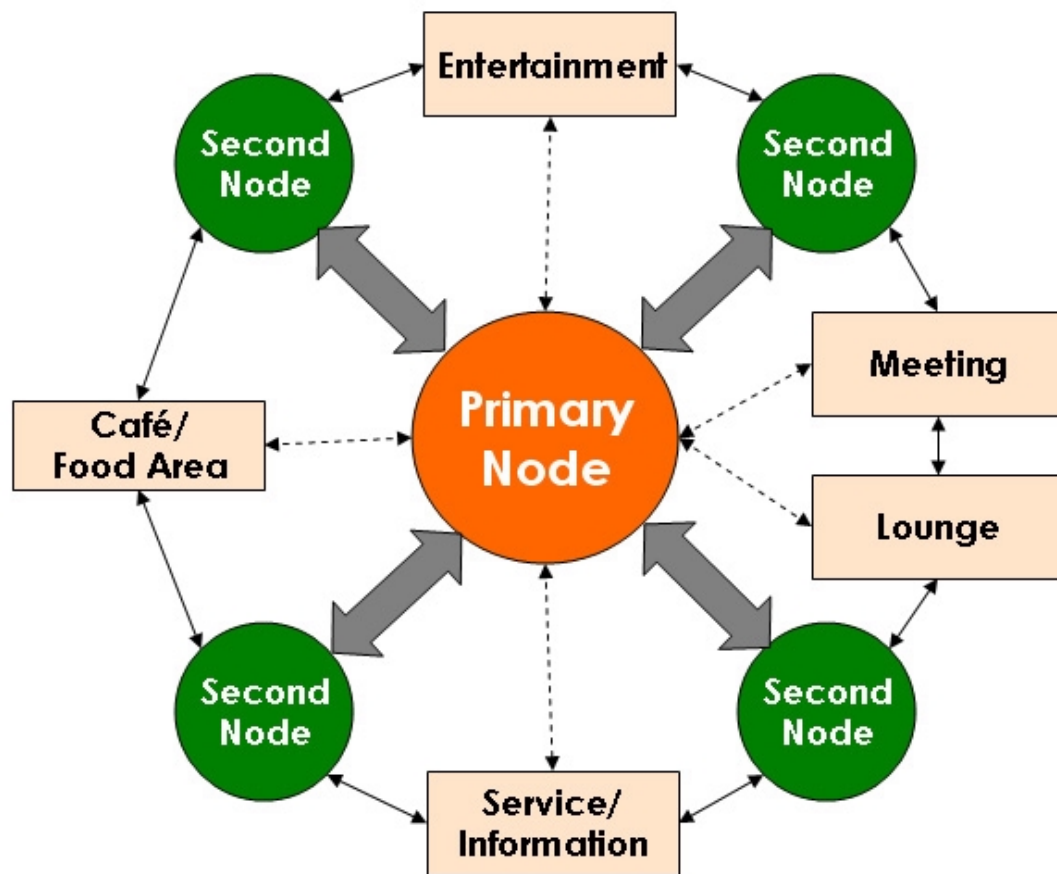


Figure 3. Nodal organization of social spaces within trade shows.

5 Response to Design Strategies

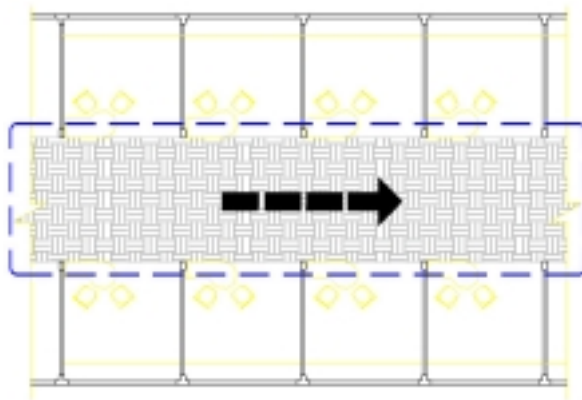
5.1 Distance Control

As previously discussed, the planning and layout of social spaces will be informed by the strategy of distance control. The distance between two primary social spaces is 100 metres, which is the maximum visual distance recommended by Gehl (1987). Within this distance, the visitors can see what is happening in an event. Each exhibition group is organized as a neighbourhood within 25x25 metres. The exhibitors in one neighbourhood may have similar product lines or themes, which can be easily recognized by visitors. To strengthen the identity of each group, the secondary node, a lounge area is set in the core of neighbourhood.

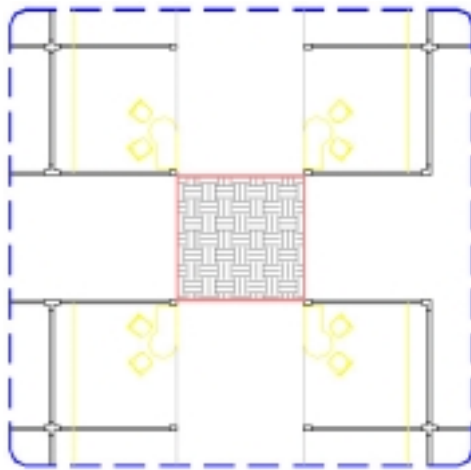
Within each social space, a certain distance is needed for visual and auditory communication among different user groups. The size of the lounge area is approximately 7x7 metres, which is the effective distance for hearing. The sitting area inside will be arranged within a 3-metre circle, which is the optimal distance for social interaction. This distance is used both to regulate intimacy and intensity in various social situations, and to control the beginning and end of conversations. To set up the sitting area, the guiding principle is to place the sofas around a table at right angles, which allows ease of conversation. Thus, the sitting area facilitates a number of functions beyond merely sitting (Ralph Erskine).

5.2 Interior Streetscape

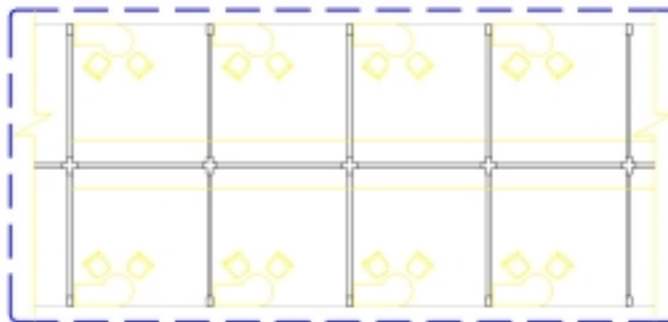
Firstly, to create a highly image able space by using the strategy of interior streetscape design, five mapping elements (path, edge, node, district, and landmark) will provide the guiding principles for the trade show spatial allocation. Conceptual drawings are shown as follows.



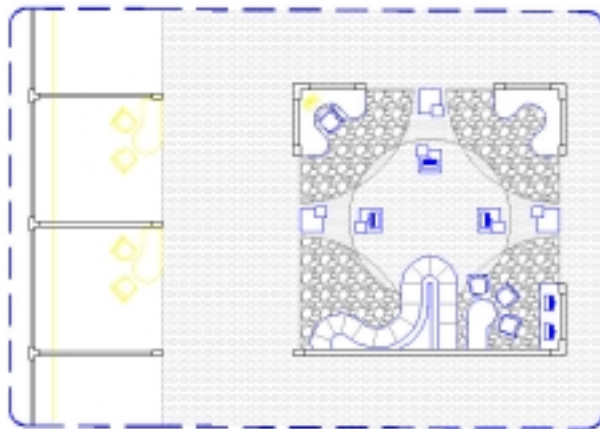
PATH: public hallway in between the exhibition booths.



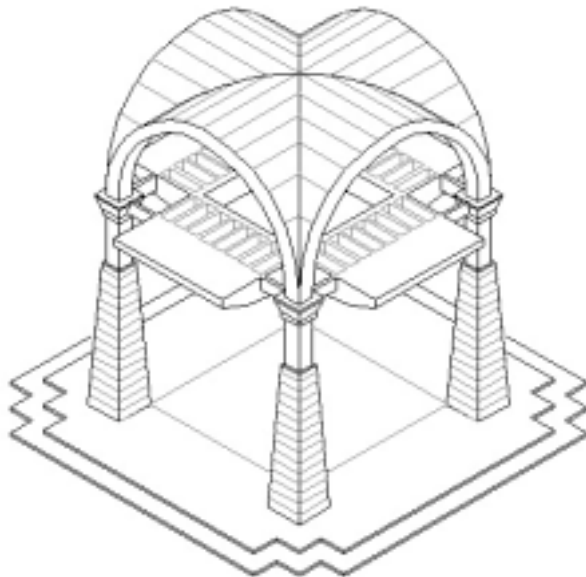
NODE: Intersection or transit stops.



DISTRICT: Cluster of exhibition booths.



EDGE: area in between the public area and exhibition booths.



LANDMARK: appealing and unique vision to attract visitors.

Figure 4. Five mapping elements within trade shows.

To form a legible space, in addition to those five elements, visual clues can be utilized to help orient the user. Especially in social spaces, more visual information needs to be presented to aid visitors in locating their possible destinations. The following are some interior treatments typically used for aesthetic effect that can help create a legible environment.

- Change of wall colour, type, or texture;
- Change in flooring;

- Use of lighting to highlight or minimize areas;
- Change of ceiling treatments;
- Furniture arrangement or type (Graphic Standard, 2003, pp.33).

When using understandable visual clues in an interior environment, the spatial characteristics can also be reflected to strengthen the visual directions or images. For example, the change of flooring material or pattern can contribute to continuity or sequence of space. Hierarchy can be reflected by the distinguishable size and scale of space. Rhythm in detail arrangement will offer artfully conceived change of pace and a pleasant surprise.

In general, the use of design elements, such as colour, lighting, finishes, and materials, doesn't intent to mimic a real streetscape. Instead, those elements should be integrated to "metaphorize" an approachable and lively atmosphere to reflect the daily life in an urban space.

5.3 Modular Design

As discussed before, because modular systems have the advantages of lightweight, ease of assembly, and flexibility, they are preferred in the selection of settings and furniture within trade show, including social spaces.

Some possible selections of interior architectural elements, such as partitions, screens, ceilings, displays, signage, and furniture are proposed as follows. Flexibility of assembly is another important issue when utilizing these settings.

Partitions / Screens

To divide the interior space, the freestanding partitions and screens are walls unwilling to make a commitment, but bringing with versatility and mobility. In the lounge space partitions are used to form a semi-close space to provide screening and protection for people and assist in communication. Drapery divider can be applied to define space loosely but create a soothing atmosphere.

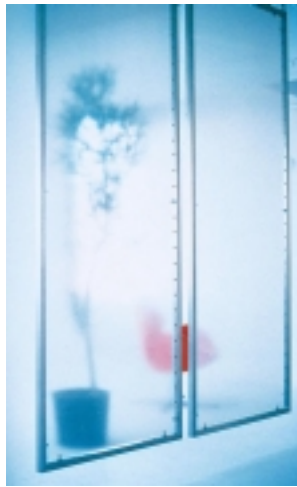


Figure 5. Light screens and drapery dividers can help to define spaces with more flexibility. Left: Hard surfaces Imago screen from Knoll Textile. Right: Herman Miller RED New York showroom designed by Brett Tipert.

Source from: <http://www.knoll.com>; <http://www.dfratiannearch.com/projects/miller/>

Ceilings

Within trade show venue, a tensioned fabric structure will be an ideal structural system for ceilings or shells because of its particular properties, such as light weight, ease of installation and delivery, minimum load on existing building structure. It can satisfy all the specific requirements for trade shows. Visually, it can provide a focus unique in trade shows and attract the visitors' attention because of its organic and dynamic form.

As an element in the ceilings, tensile fabric ceiling can be used in the “information hub”, “forum stage”, and lounge areas to create a unique and appealing landmark.

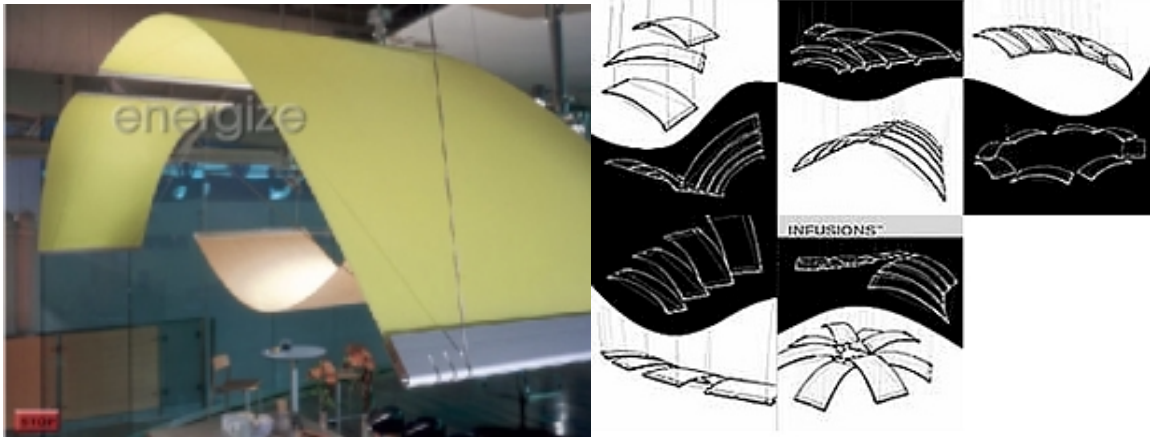


Figure 6. INFUSIONS™ is a new collection of floating ceiling from Armstrong. Available in a range of choices in textures and colors, it can be used individually or in combination to create an array of different configurations.

Source from: <http://www.armstrong.com/commceilingsna/article7614.html>

Displays

Information booklets or brochures related to the show could be retrieved from the social space for convenience. The freestanding display needs to be mobile, portable and unique. The features may involve digital technology.

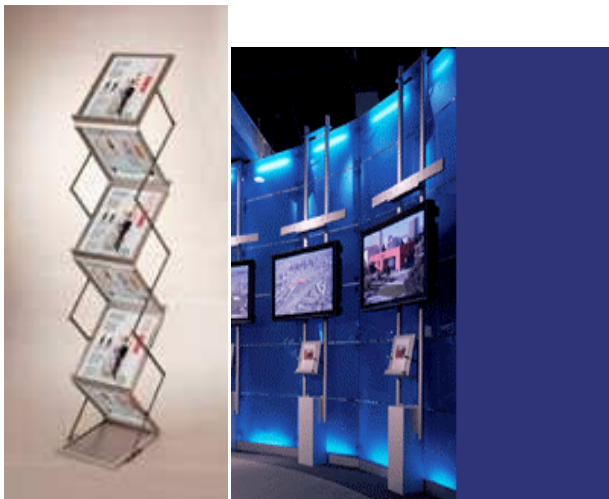


Figure 7. Modular display stands.

Source from:

<http://www.tradeshow-displays.biz/>

Furniture

Seating should offer multiple possibilities be grouped in various ways to be adaptable in different lounge spaces. Thus, they can be distinguished from each other to help strengthen different identities.

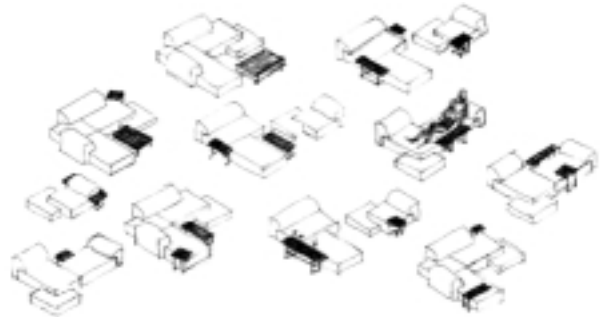


Figure 8. Modular lounge sofa design conception.

Source from: <http://www.eq3.com>

Signage

As an important visual media to translate the information into graphics, the signage in social space could be suspending or freestanding banners or pop-ups, showing information or direction and create the legibility of each exhibition group.



Figure 9: Freestanding banners with digital printing provide graphic signage.

Source from: <http://www.cokerepo.co.uk/banner-stands.html>

5.4 Other Considerations

In addition to applying the three main strategies in design, some other issues also need to be taken into consideration.

Social considerations

In addition to aesthetics, the selection and design of interior elements needs to be considered in a social context. Unlike exhibition design, the design elements in the social space should be comfortable and pleasant so that people are willing to linger. According to Mehrabian and Russell's hypothesis (1973), moderate settings are more approachable and make people feel more comfortable than arousal settings. Based on this theory, some guidelines in relation to the social spaces interior elements are as follows in Table 3.

Table 3. Schemes of design elements in three main social spaces.

Space	Design Elements	Schemes	Design Considerations
Information Hub	Colour	Neutral, light	Do not compete with exhibiting display; good taste; easily to approach.
	Materials & Finishes	Freestanding partition complete with semi-gloss metal frame, Tensile ceiling	Mobile; trendy looking; multi-function; easily perceived
	Lighting	A combination of ambient and task lighting	Visually attractive
Forum stage	Colour	Neutral, warm	Encourage conversations; create a lively ambience.
	Materials & Finishes	Carpet floor, Floating ceiling,	Low cost and maintenance; Appealing and unique, easily perceived;
	Lighting	Ambient lighting	Do not conflict with exhibition
Lounge	Colour	Cool	Adaptable; soothing; restful and relaxing
	Materials & Finishes	Translucent partition, plastic laminate finish, soft fabric on sofa	Adjustable; comfortable; do not conflict with exhibiting display
	Lighting	Soft, hidden	Natural, soothing and relaxing, enhance the spatial definition.

Universal Accessibility

Compliance with the principles of the American with Disabilities Act (ADA) promotes the experience for disabled or aged visitors to the trade show.

The following are some criteria for universal design in relation to social spaces

within trade shows or exhibitions.

- Large-print labelling and signage with good contrast and lighting
- Captioned film, video, and audio for information
- Tactile flooring installed at any locations where there are changes in grade
- Install telephone-teletype devices (TTYs) in the lounge space to allow people who are deaf, hard of hearing, or speech-impaired to use the telephone to communicate. A TTY is required at both and ends of the conversation in order to communicate (TDI, 2004).

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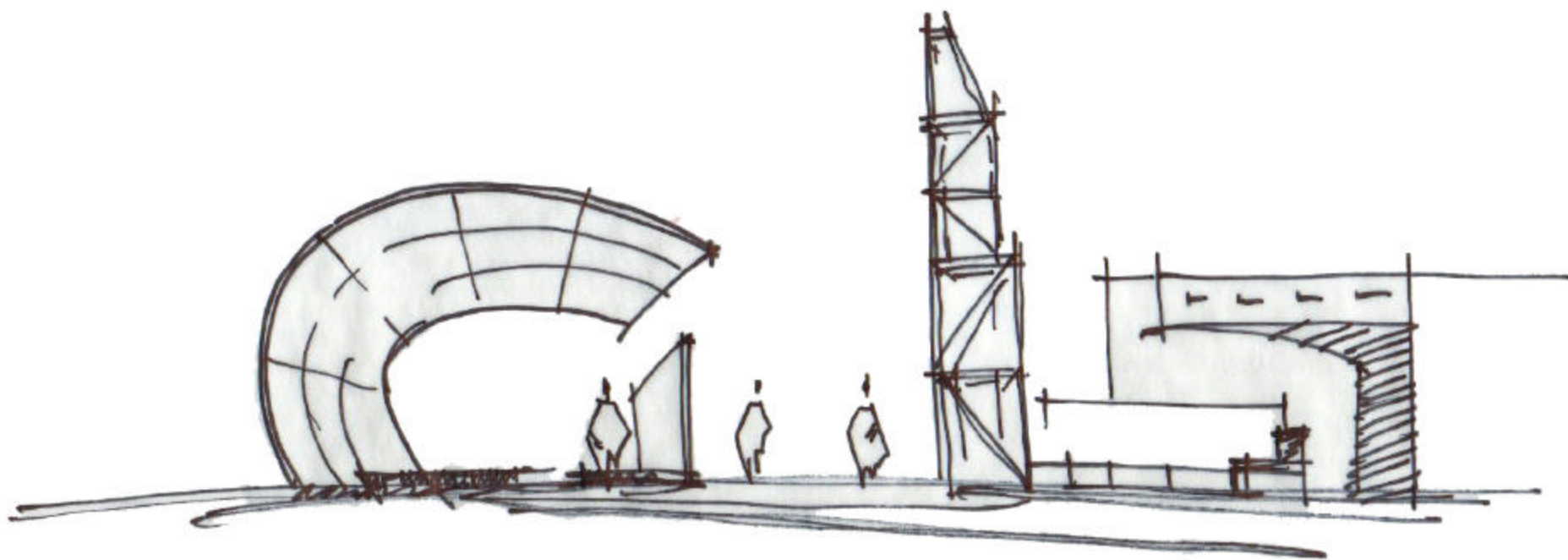
Reference

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- Velarde, G. (2001). *Designing exhibitions*. Aldershot, Hants, England: Ashgate.

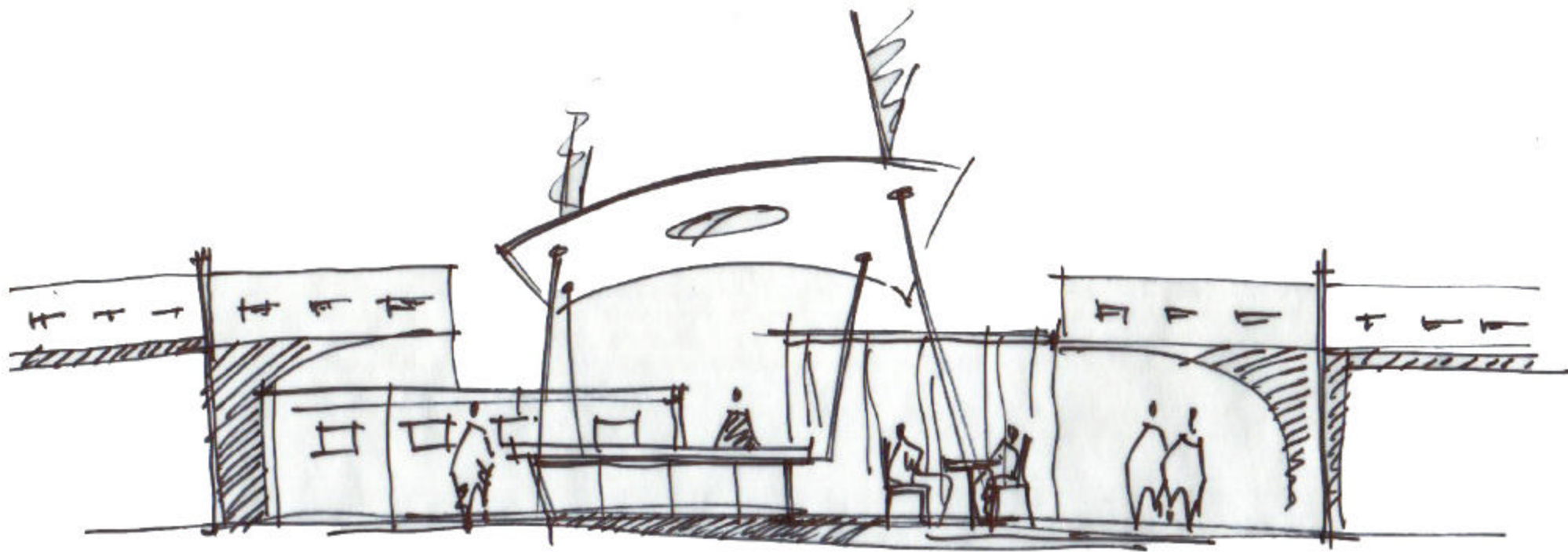
Appendix B Conceptual Drawings



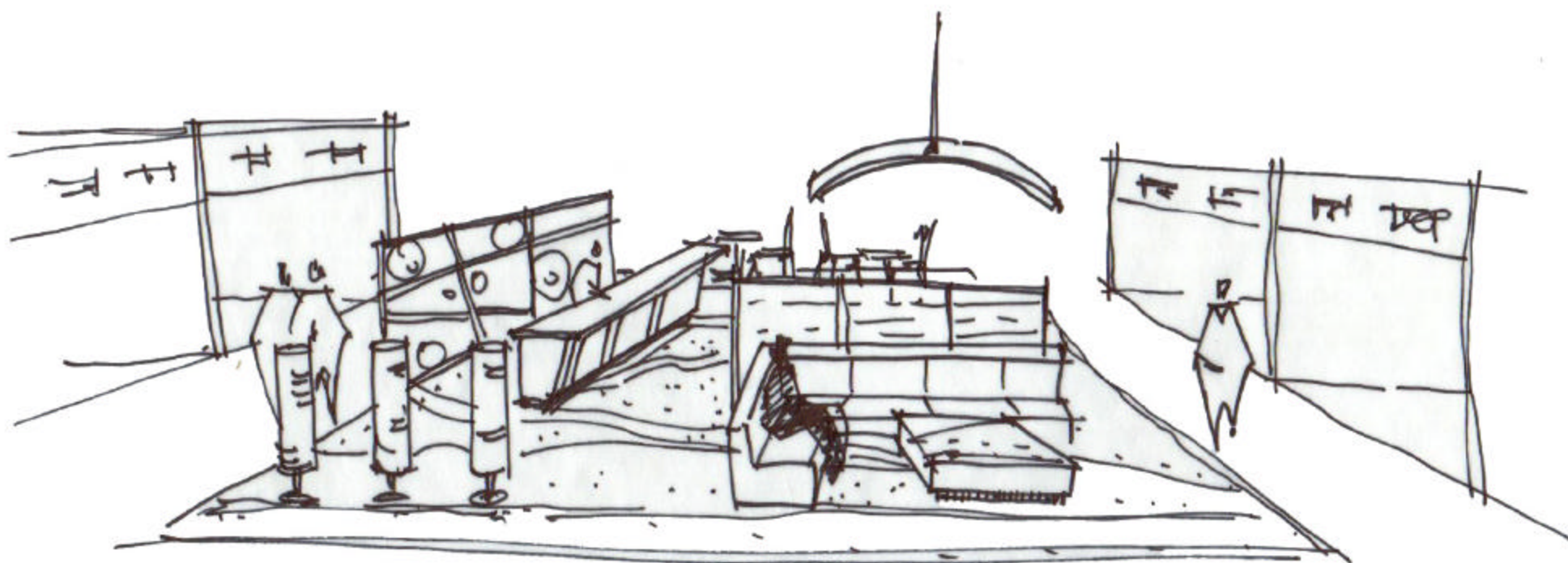
STREET • TOWN



TRANSIT • TERMINAL • TOWER



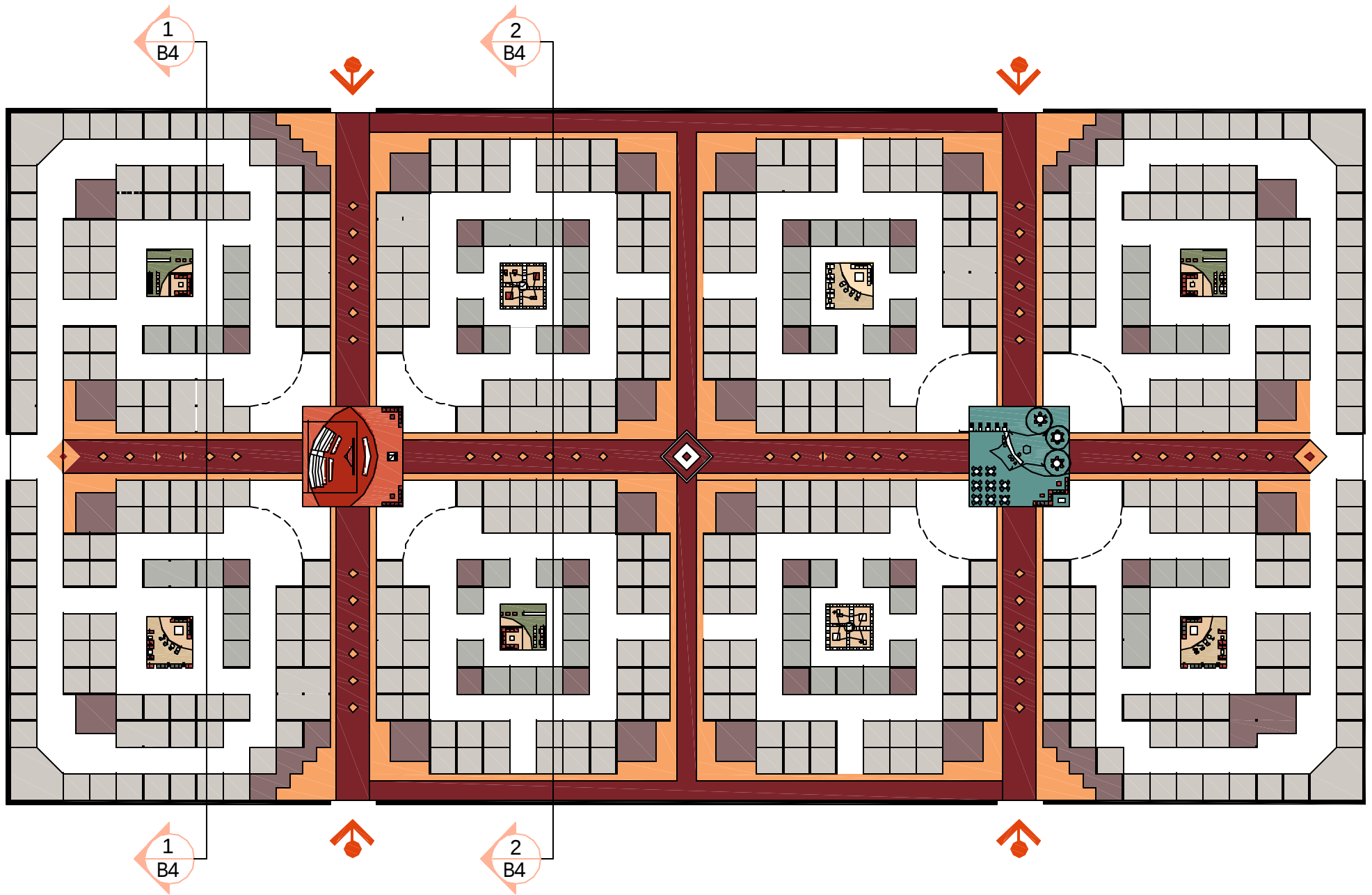
PAVILION • PUB • HUB



BAR • SALON • PATIO

Appendix C Design Drawings

Note: the following drawings are not to scale due to document sizing.

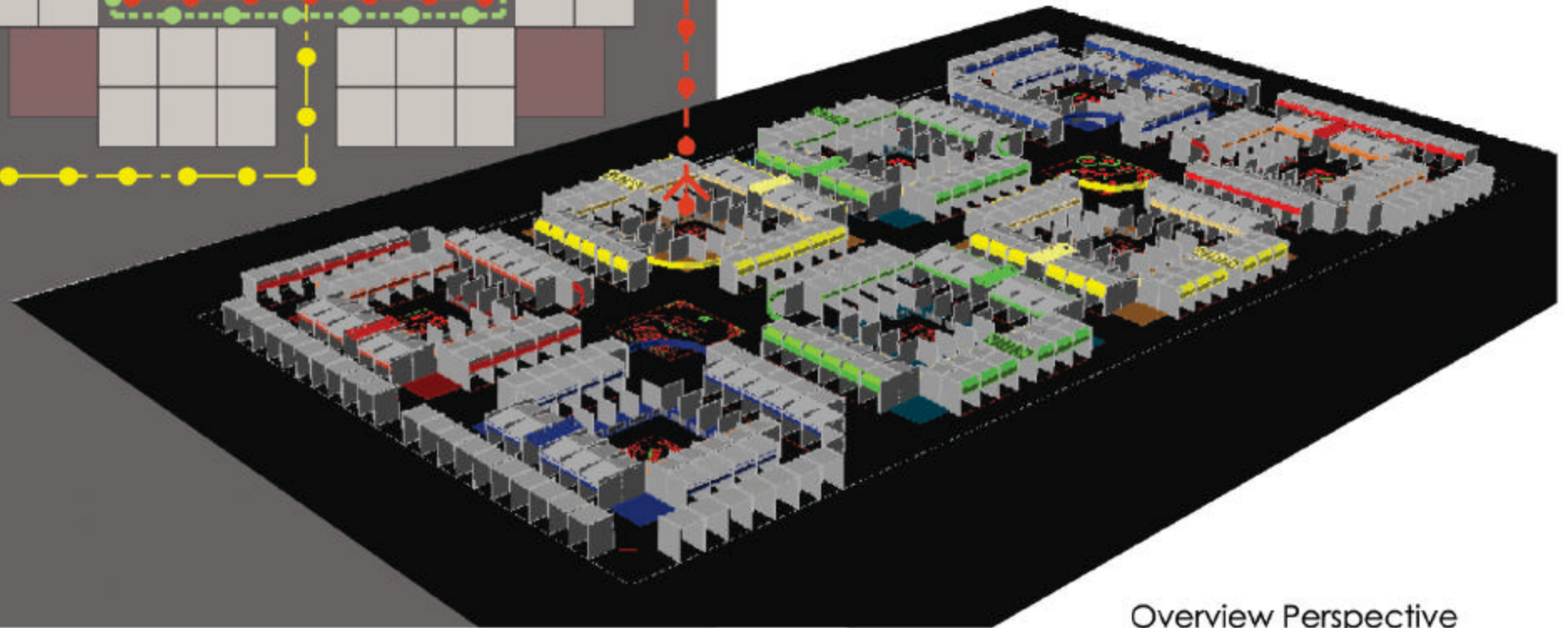
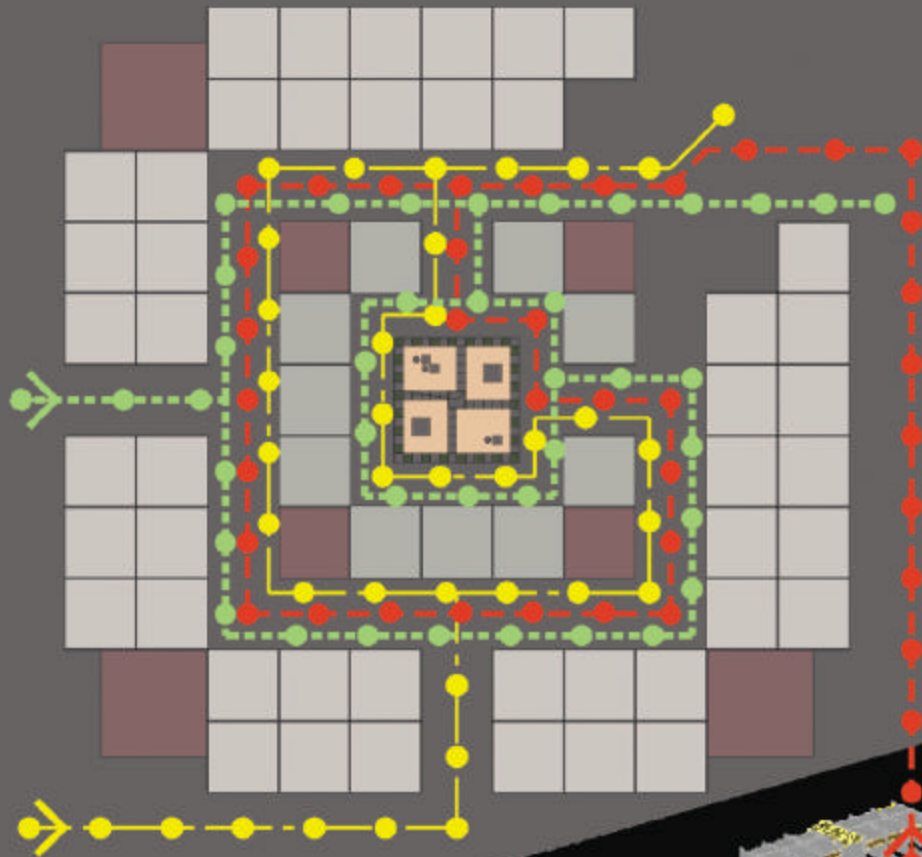


Floor Layout Plan

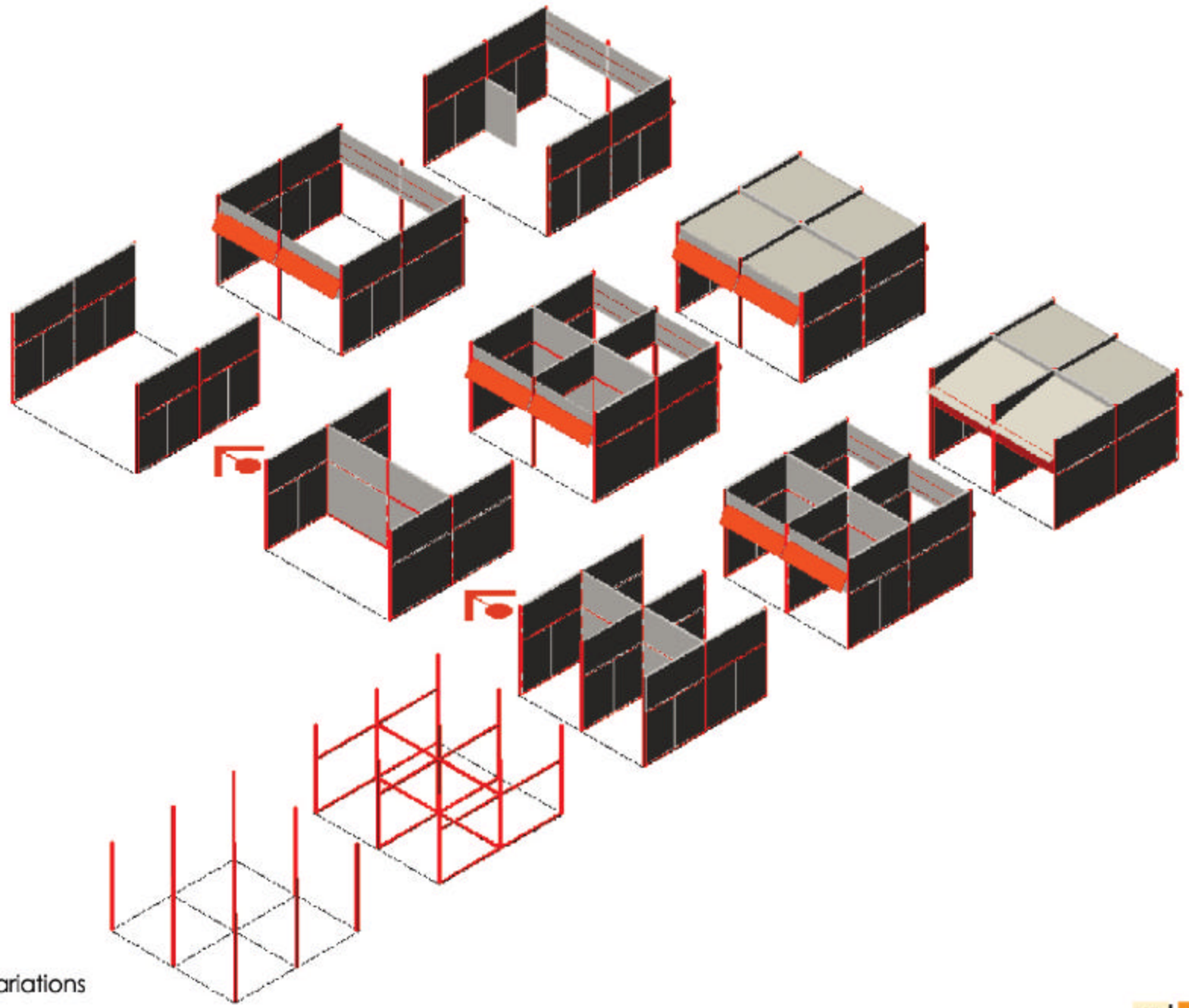
PLANNING AND DESIGNING SOCIAL SPACES



Circulation Analysis



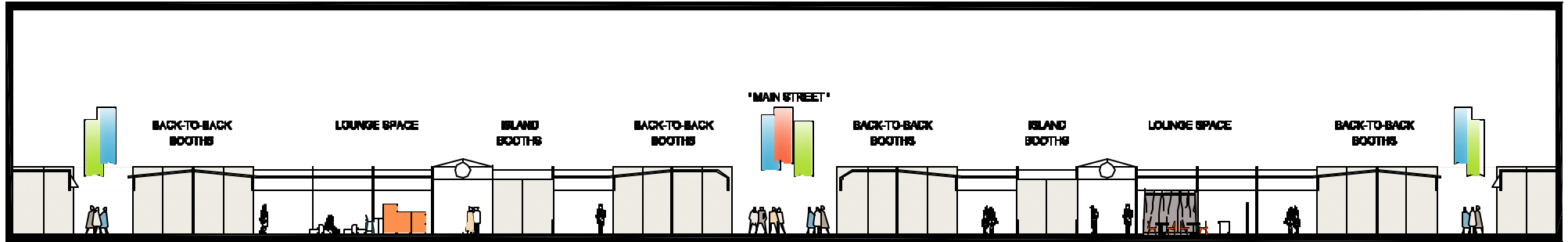
Overview Perspective



Installation System @ Variations

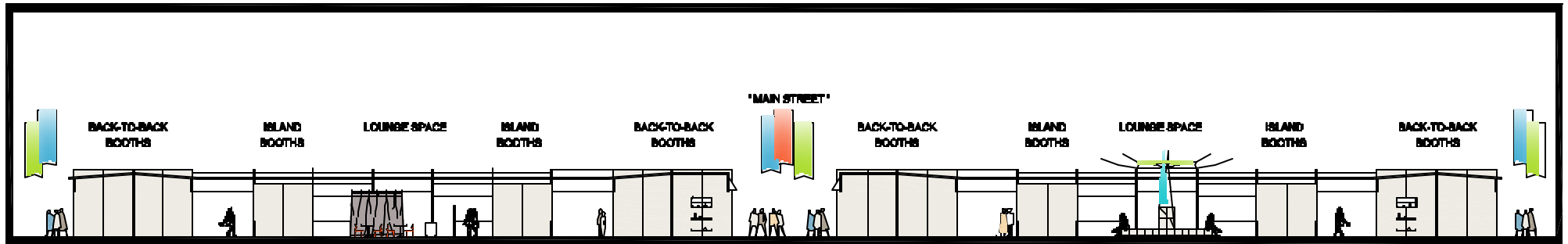
PLANNING AND DESIGNING SOCIAL SPACES





1
B4

Cross Section 1

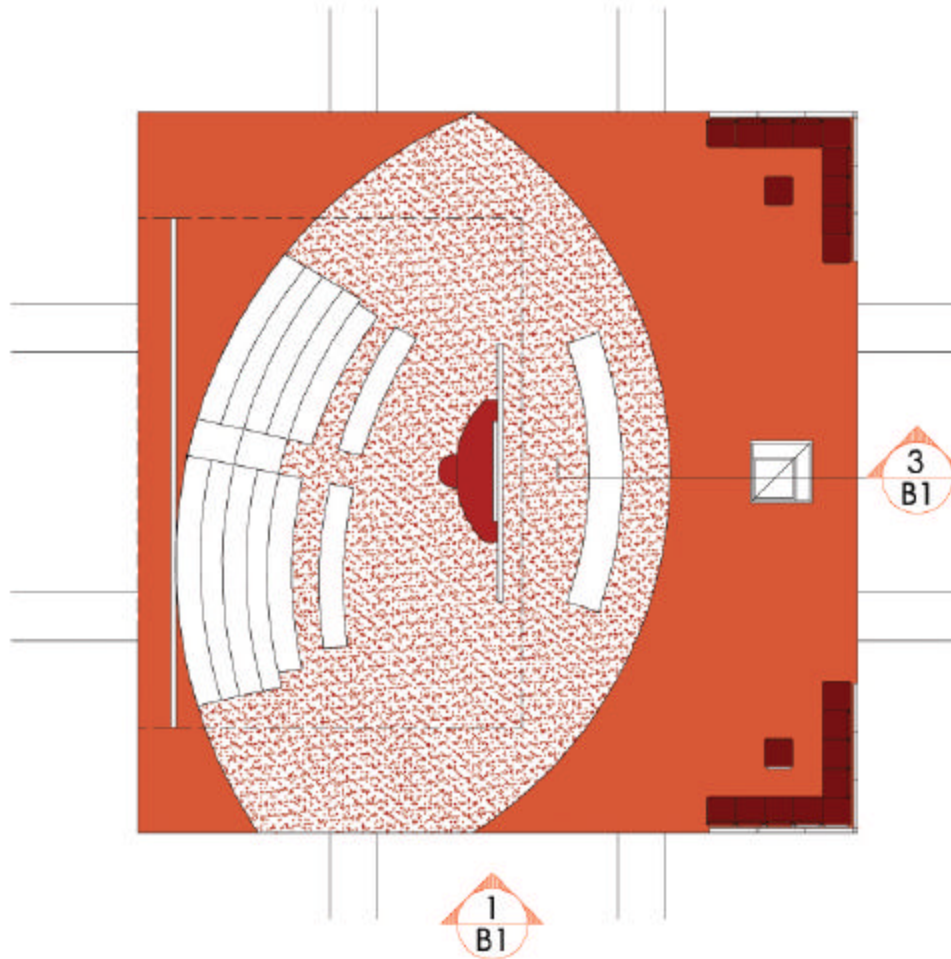


2
B4

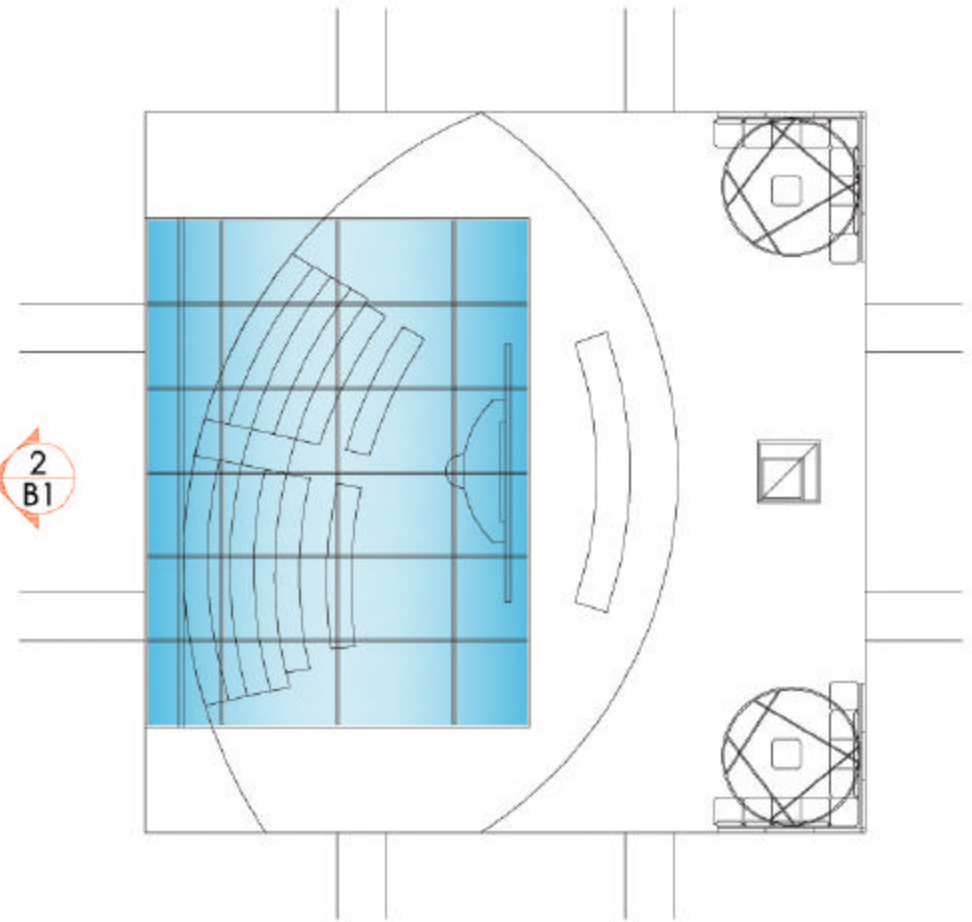
Cross Section 2



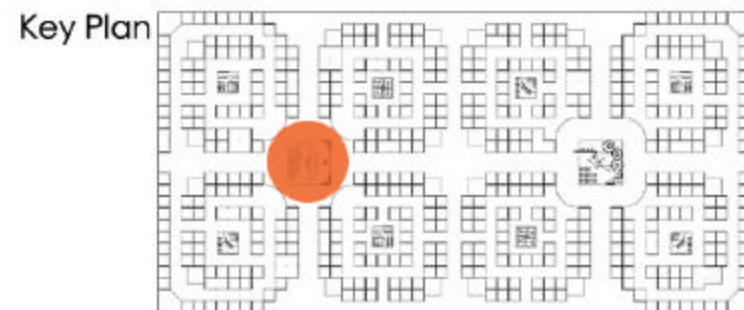
Public Hallway Perspective



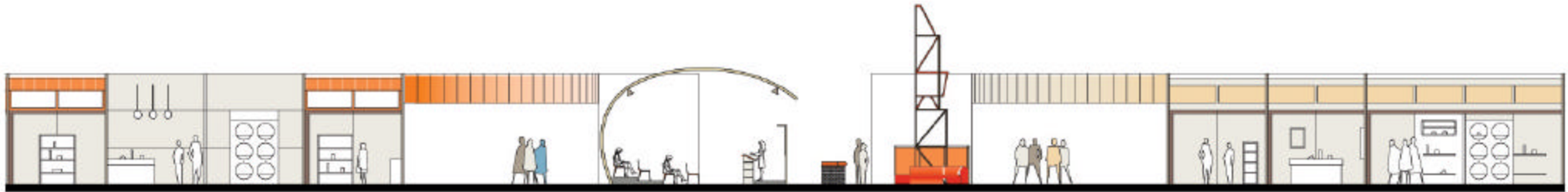
Forum Stage - Floor Plan



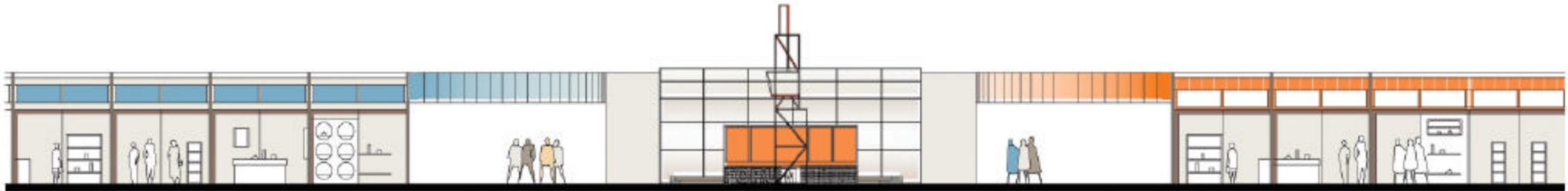
Forum Stage - Reflected Ceiling Plan



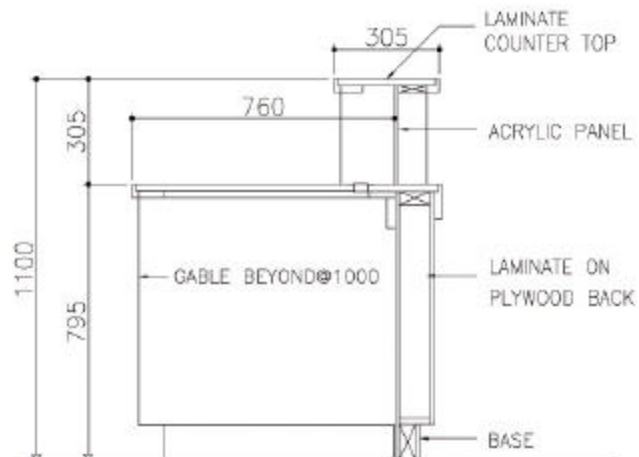
Key Plan



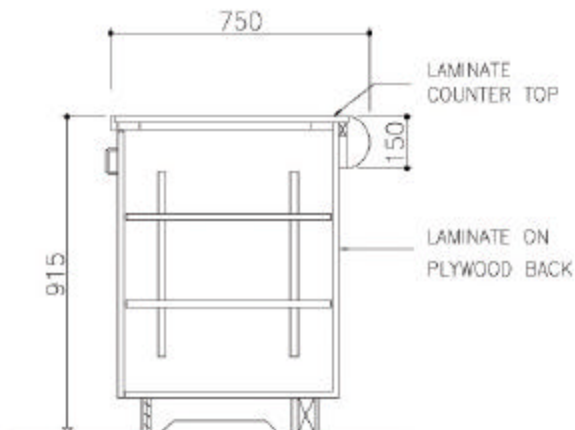
1
B1 Forum Stage - Elevation 1



2
B1 Forum Stage - Elevation 2



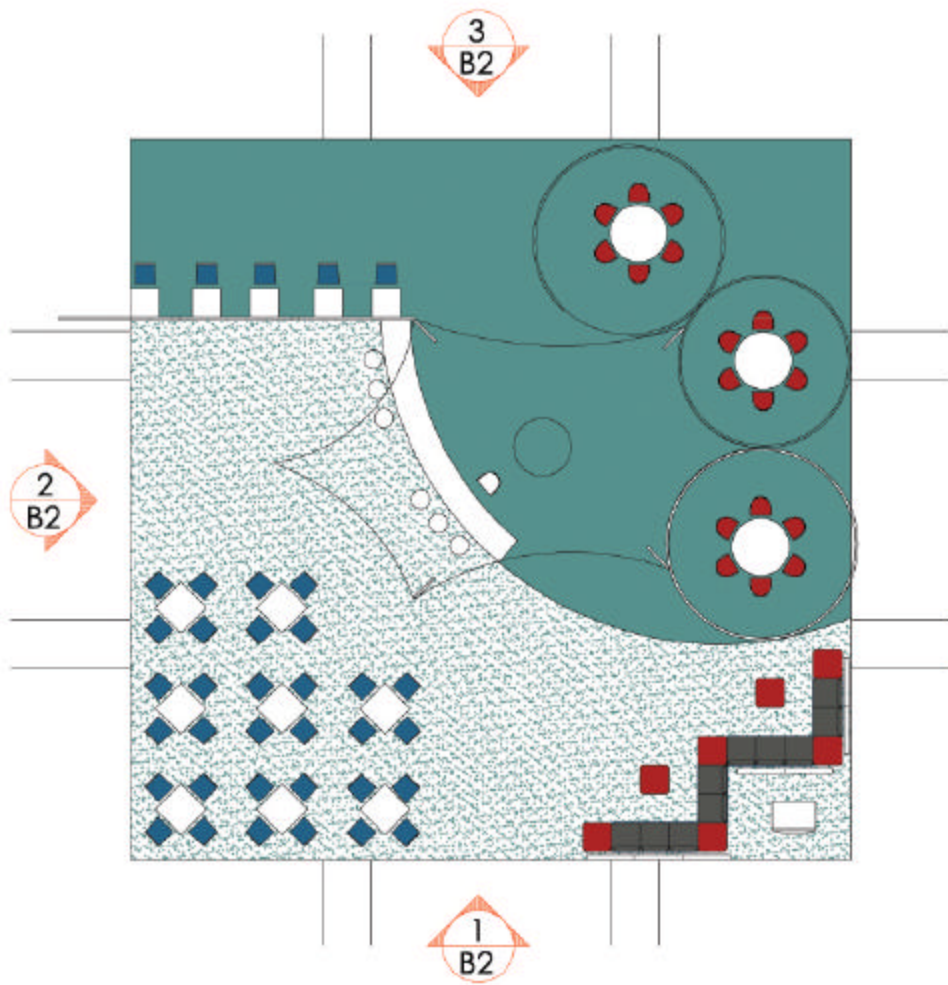
3
B1 Counter Section Detail @
Information Hub



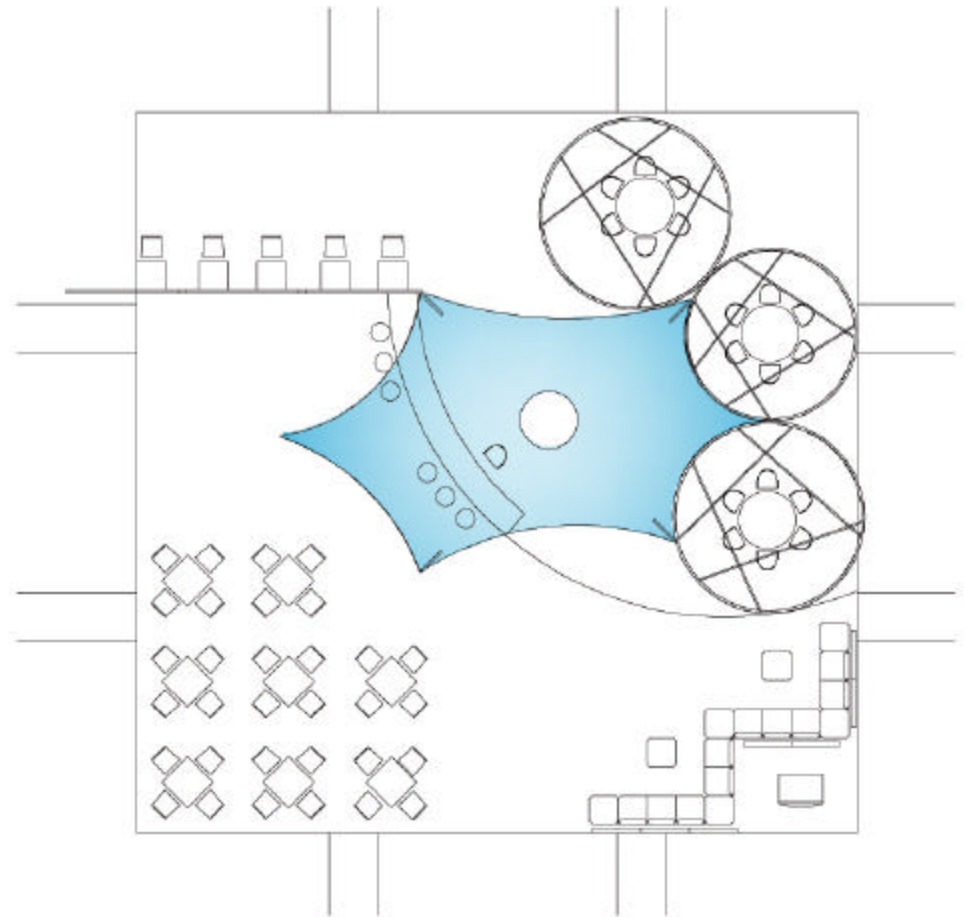
Counter Section Detail @
Forum Stage / Lounge



Forum Stage Perspective

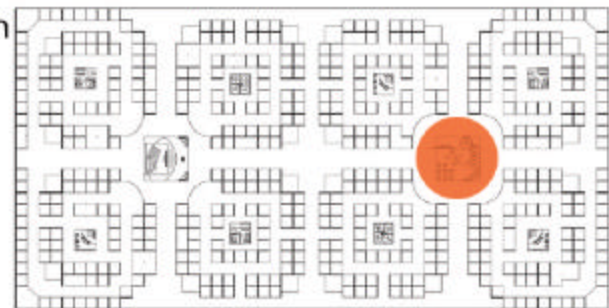


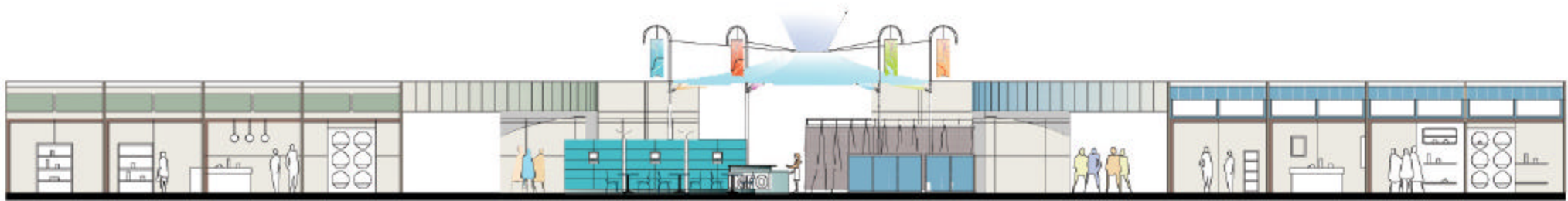
Information Hub - Floor Plan



Information Hub - Reflected Ceiling Plan

Key Plan

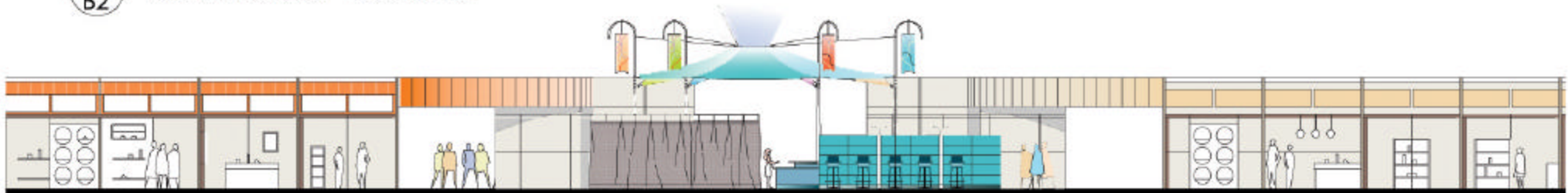




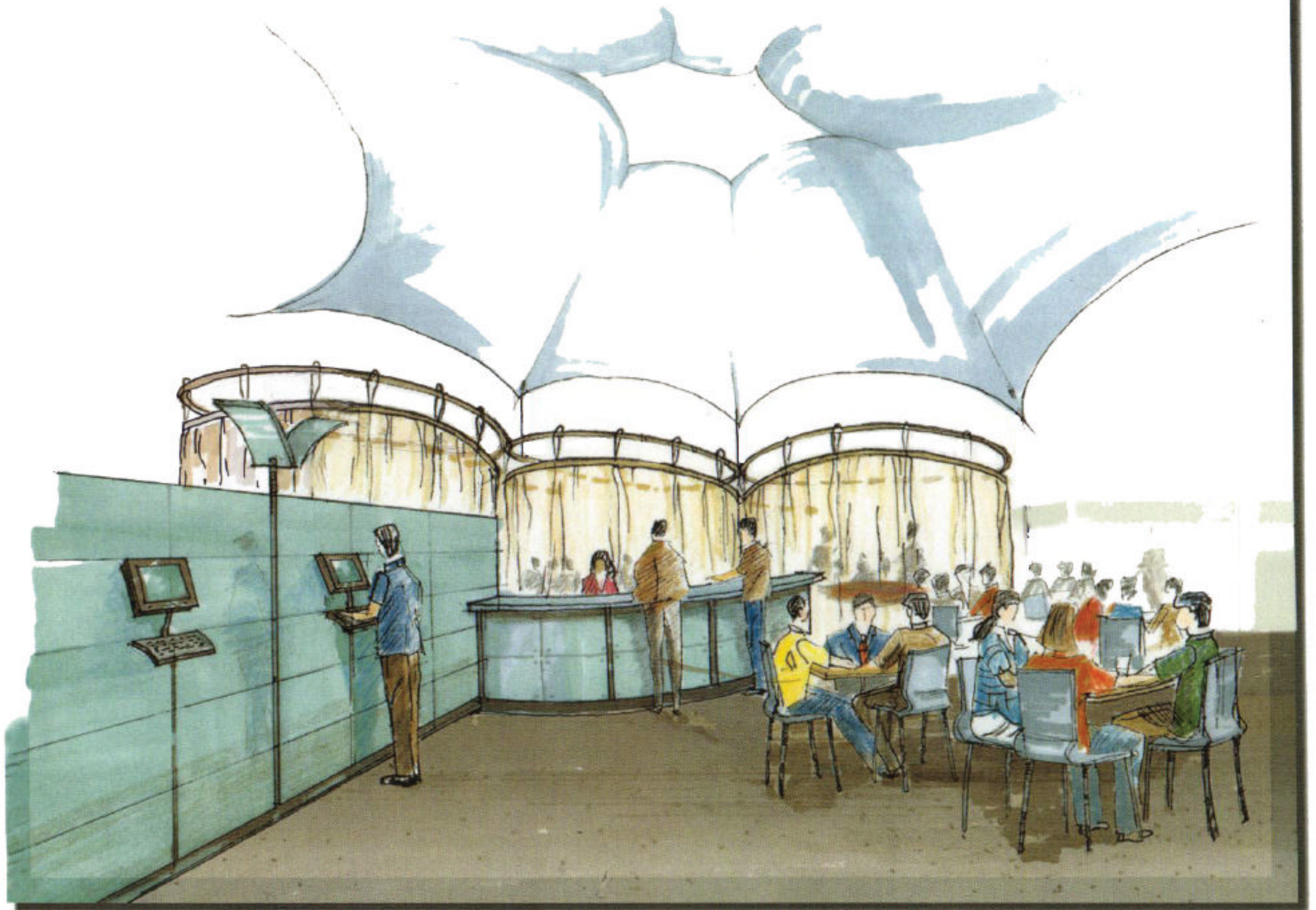
1
B2 Information Hub - Elevation 1



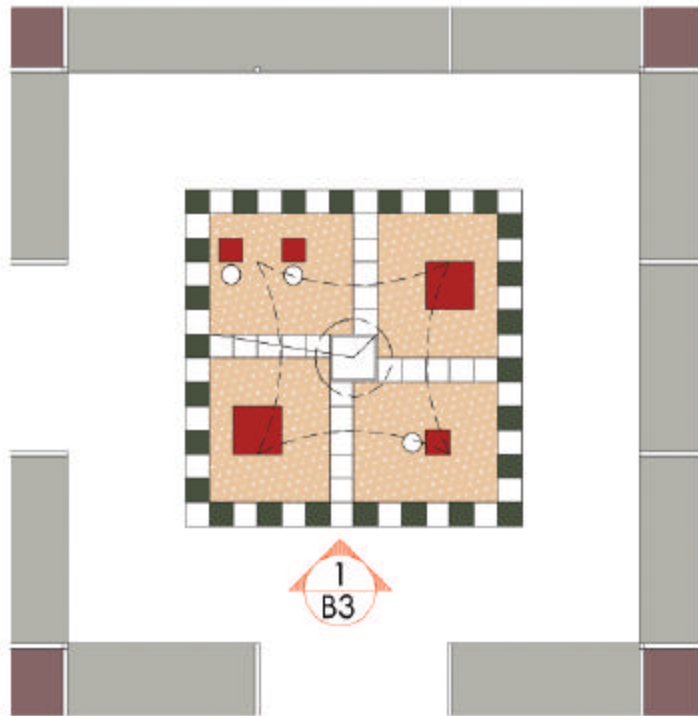
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B2 Information Hub - Elevation 2



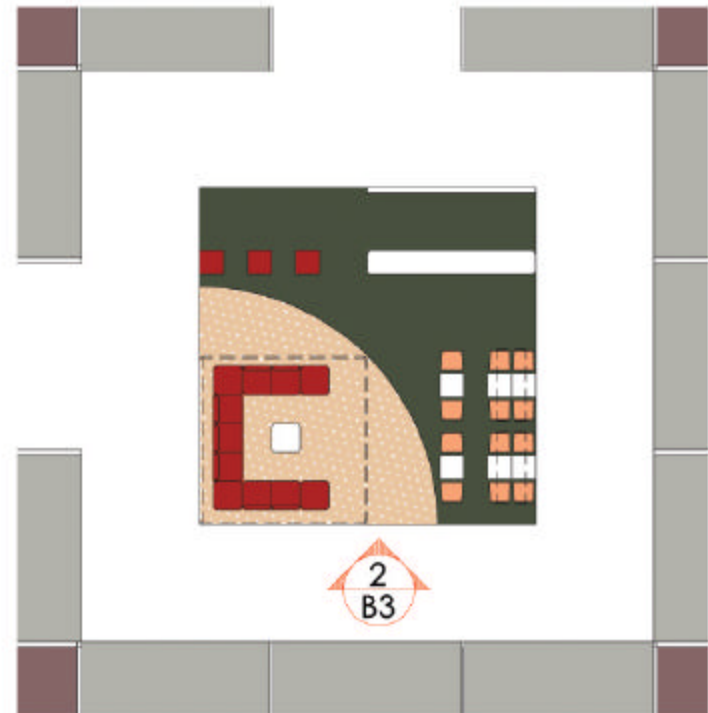
3
B2 Information Hub - Elevation 3



Information Hub Perspective

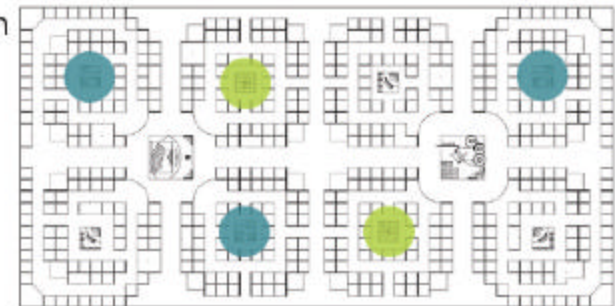


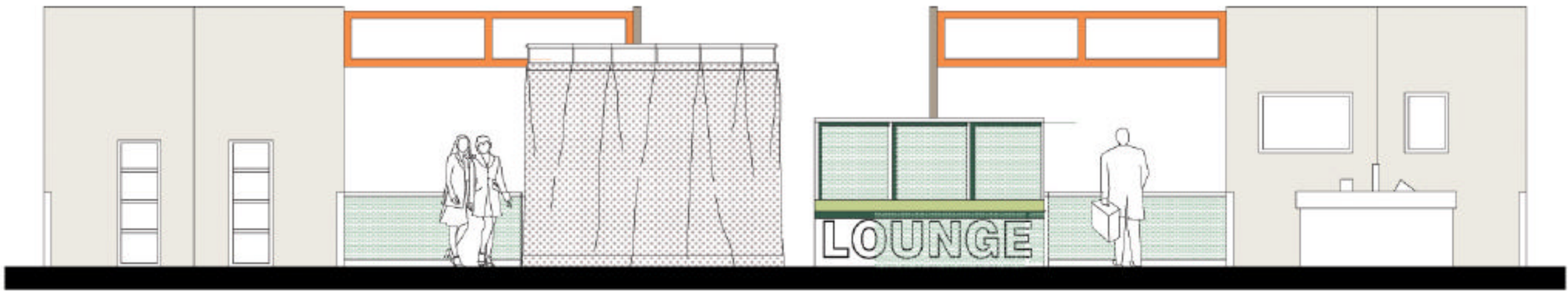
Lounge 1 - Floor Plan



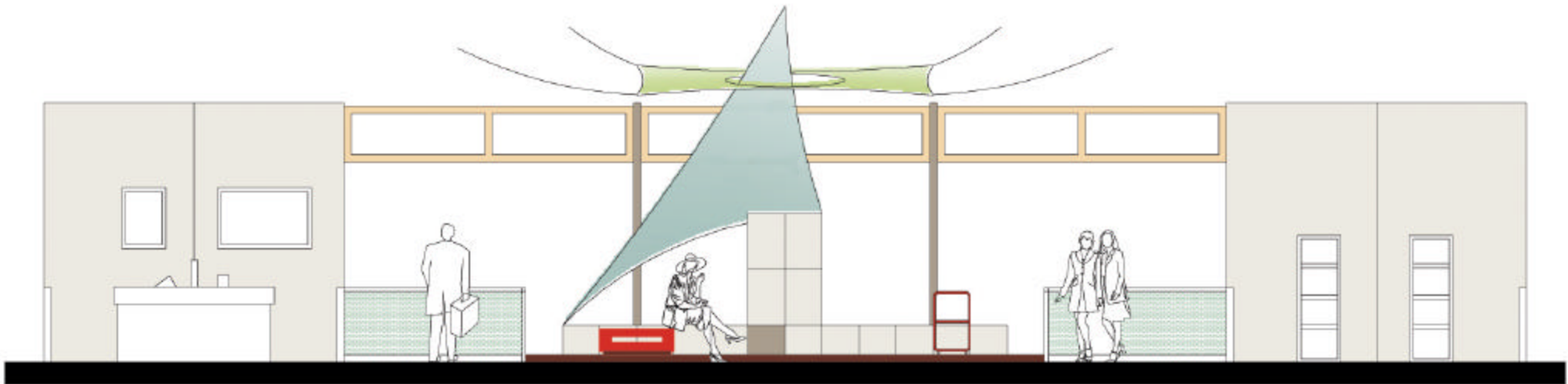
Lounge 2 - Floor Plan

Key Plan





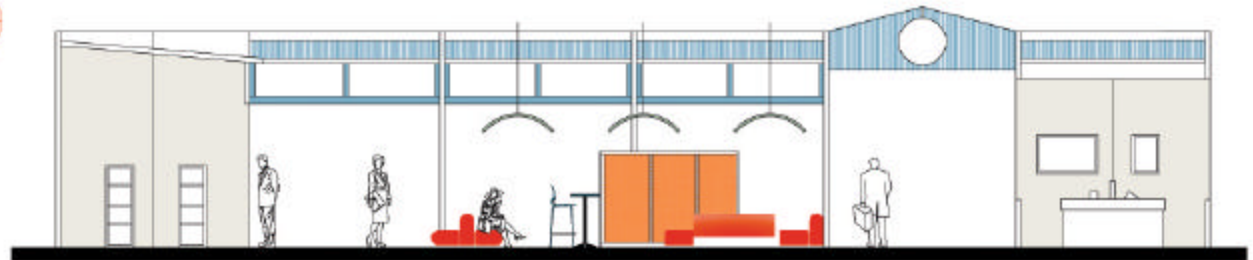
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B3 Lounge 2 - Elevation 2



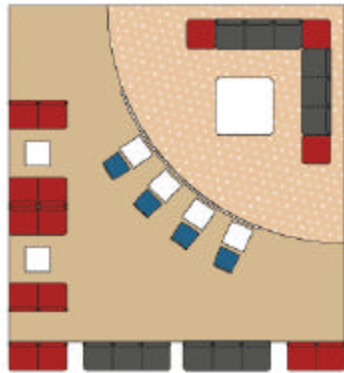
1
B3 Lounge 1 - Elevation 1



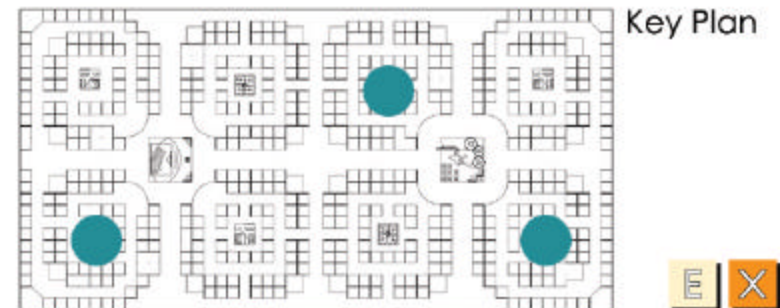
1 Lounge 3 - Elevation 1



2 Lounge 3 - Elevation 2



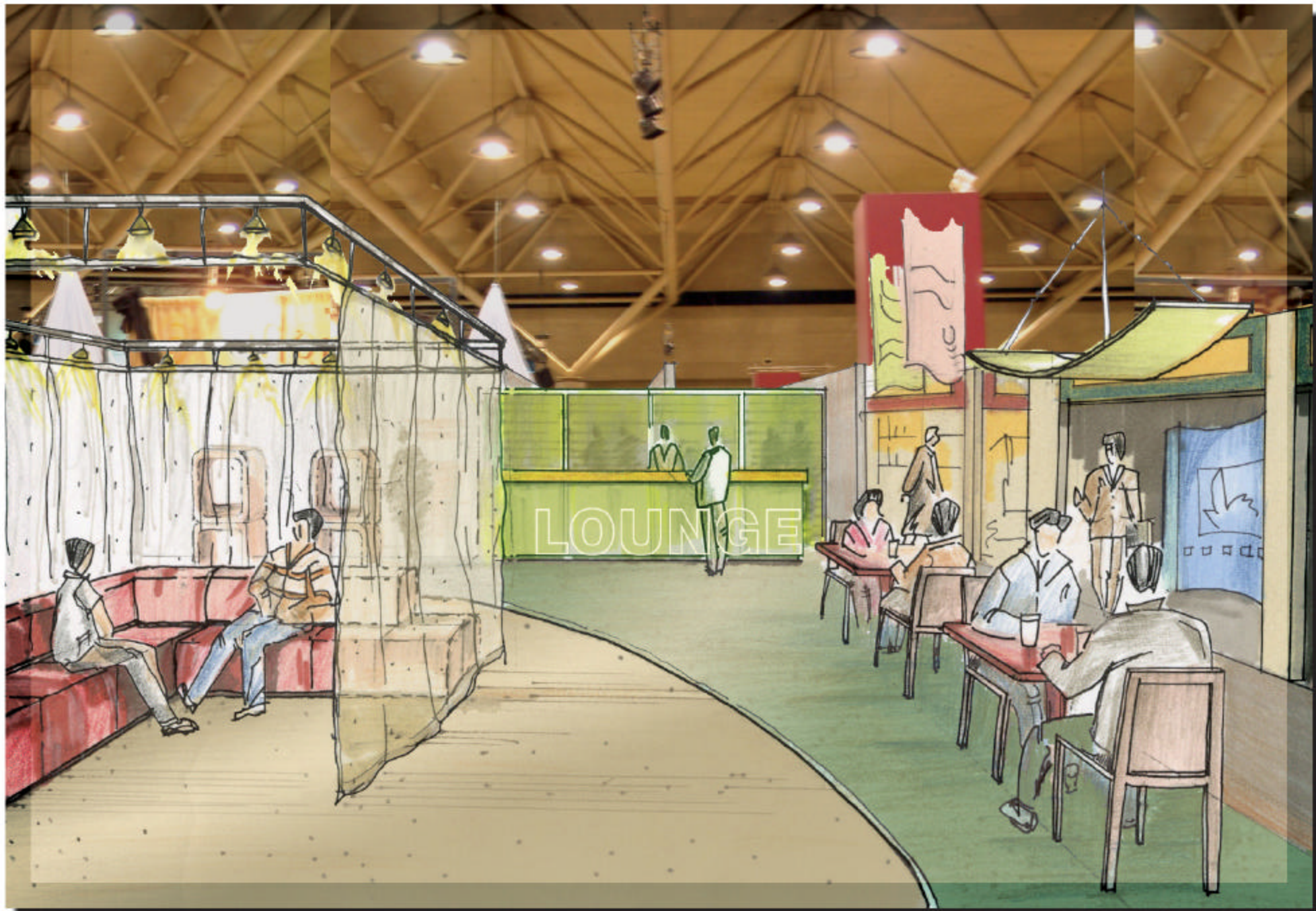
Lounge 3 - Floor Plan



Key Plan



Open Lounge Perspective



Lounge Salon Perspective



Typical Lounge Seating

Appendix D Design Specifications

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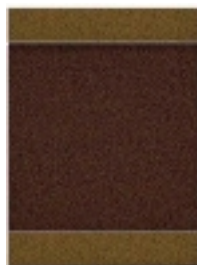
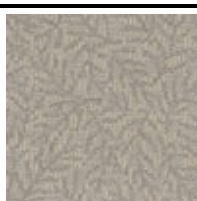
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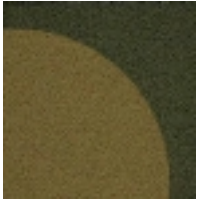
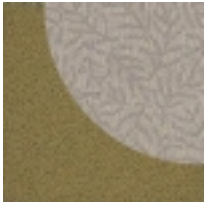
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3 Lighting and Fixtures.....105

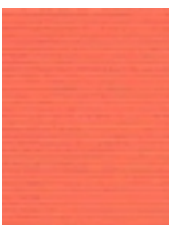
1 Finishes

1.1 Carpet

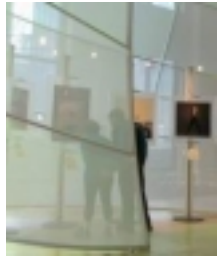
Location	Manufacturer	Description	Sample Image
Public Hallway	Crossley	Textured solid, Belize 30276, 2071 Cinna Mocha	
Public Hallway	Crossley	Textured solid, Belize 30276, 2045 Vermeil	
Information Hub	Crossley	Textured solid, Belize 30276, 2117 Prussian	
Information Hub	Milliken	Textured pattern, Explore Laguna P/6571, 326 Alaskan Frost	
Forum Stage	Milliken	Textured pattern, Explore Laguna P/6571, 323 Rustic Glen	
Forum Stage	Crossley	Textured solid, Belize 30276, 2071 Cinna Mocha	
Lounge 1	Milliken	Textured pattern, Explore Laguna P/6571, 321 Natural Dune	

Lounge 2	Crossley	Textured solid, Belize 30276, 2134 Slate Green	
Lounge 2	Crossley	Textured solid, Belize 30276, 2039 Honeycomb	
Lounge 3	Crossley	Textured solid, Belize 30276, 2039 Honeycomb	
Lounge 3	Milliken	Textured pattern, Explore Laguna P/6571, 321 Natural Dune	

1.2 Plastic Laminate

Location	Manufacturer	Description	Sample
Forum Stage -Counter tops	Wilsonart	1511-60 Mandarin red	
Forum Stage -Vertical surfaces	NEVAMAR	GKM01909 - CARRE Silver PF met, 2600x1000x1mm	
Information Hub - Vertical surfaces	ABET	Arancio - 835 MIL, High pressure laminate, Straight line for texture	
Information Hub - Vertical surfaces	ABET	Grigio Chiaro - 478 MIL, High pressure laminate, Straight line for texture	
Information Hub -Counter tops	ABET	Bleu Rada - 850 SEI, High pressure laminate	
Lounge - Vertical surfaces	NEVAMAR	GKM01909 - WAVE Silver PF met, 2600x1000x1mm	
Lounge - Coffee table top	Wilsonart	1511-60 Mandarin red	

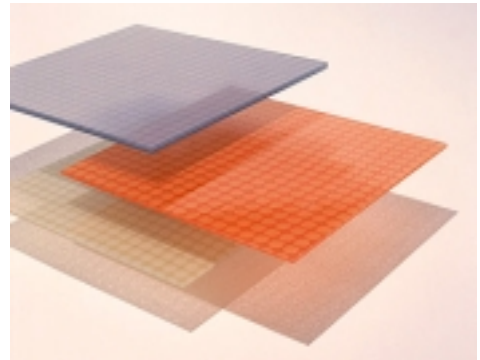
1.3 Area Ceiling

Location	Manufacturer	Description	Sample Image
Entrance Hallway	Juxtaform	Stretched fabric polyester, white	
Forum Stage	Eventscape	Aluminium frame and stretched nylon	
Information Hub	Juxtaform	Stretched fabric polyester, white	
Lounge 1	Juxtaform	Stretched fabric polyester, white	
Lounge 2, Lounge 3	Armstrong	Infusions, Sage Happiness, 2'x5'	

2 Furnishings

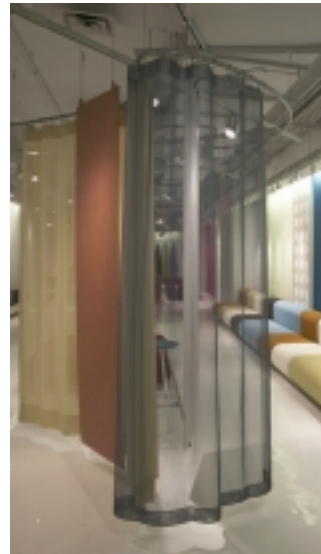
2.1 Panels and Screen

- Knoll Textiles, Imago
- Description: Imago combines the optimal qualities of fabric, resin, and glass in a hard surface material.
- Dimensions: 2000x1000 mm
- Retrieved from <http://www.knoll.com>



2.2 Drapery Divider

- Knoll Textiles, Caneda
- Content: high tenacity polyester
- Colour: Gris, crema
- Retrieved from <http://www.knoll.com>



2.3 Chair 1

- Miss Global Stacking Chair designed by Philippe Starck.
- Description: Miss Global is an elegant chair with seat and back of batch-dyed polypropylene, which resist abrasion; frame in powder coated steel. Easily stacked. Great contract applications as well. Available in a number of seat colors all with silver frames.
- Dimensions: 15.75" W x 19.75" D x 33" H
- Retrieved from <http://www.retromodern.com>



2.4 Chair 2

- Maran Gigi Arm Chair designed by Marco Maran, from Knoll.
- Description: Gigi Arm Chair affords the sitter comfort and flexibility because of the curved angle of the chair's back. The chair and arm pad is composed of sturdy polypropylene with curved stainless steel tubular frame and arms, and is available in ten colors. Selected color will be white and navy.
- Dimensions: 19.75" W x 20"D x 34.25" H; seat height 18"; arm height 26.5"
- Retrieved from <http://www.knoll.com>



2.5 Lounge Table

- Zanziplano Table - Cafe Square.
- Description: This beautiful series of tables from Rexite feature high-pressure melamine laminate tops in color (red, grey, lime green, and blue), steel leg, and chrome plate base with protective rubber where it meets the floor. A square with rounded corners as noted here with clickable links to the bar height version as well as the large square with rounded corners and a true large round.

- Dimensions: 24.75" W x 24.75" D x 29.5" H
- Retrieved from:
<http://www.rexite.com/eng/frame.lasso>



2.6 Occasional meeting table

- Interaction round table from KnollStudio.
- Description: This practical, versatile, and stylish Knoll occasional table addresses the range of functional and aesthetic needs.
- Dimensions: 42" round, 28-5/8" H
- Retrieved from <http://www.knoll.com>



2.7 Lounge sofa

- Suzanne Lounge Sofa from Knoll.
- Description: Harmony, simplicity and serenity characterize the Suzanne lounge collection by Japanese designer, Kazuhide Takahama. The elegant pre-formed lounge seating comprises a chair, double chair, settee and sofa, made of a tubular steel base with polished chrome finish and available in a range of textiles. With its organic lines, distinctive details in the base and supreme comfort, Suzanne provides unlimited seating possibilities. Sustainable design.
- Dimensions: 60" W x 35" D x 31.3" H; seat height is 14".
- Retrieved from <http://www.knoll.com>



2.8 Bar stool

- Maran Gigi Stool, counter height, from Knoll.
- Description: Gigi Stool affords the sitter comfort and flexibility because of the curved angle of the stool's back. This sleek stool is composed of sturdy polypropylene with a curved stainless steel tubular frame and is available

in counter or bar height.

- Dimensions: 19.75" W x 20" D x 24" H
- Retrieved from <http://www.knoll.com>



3 Lighting Fixtures

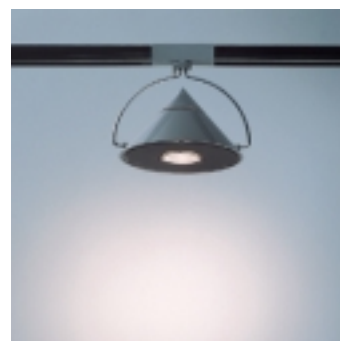
3.1 Area Light

- Tango lighting, Akira
- Description: Can be integrated with architectural structure; 2 x 32W max. T8 Fluorescent; Cord and Plug / Foot switch.
- Finish: White, Metallic Grey
- Dimensions: 8.5" W x 88.5" H
- Retrieved from: <http://www.tangolighting.com>



3.2 Spotlight

- Artemide spotlight and track
- Description: Mikado system still life
- Dim 120mm for dichroic halogen lamp
- Retrieved from: <http://www.artemide.com>



3.3 Lounge seating floor lamp

- Artemide floor lamp
- Description: Dioscuri Tavolo 42, based in thermoplastic resin, white blown glass acid-etched. Diffused light emission, incandescent globe dim 95mm, and 150w.
- Retrieved from: <http://www.artemide.com>



Appendix E Presentation Slides

PLANNING AND DESIGNING SOCIAL SPACES WITHIN TRADE SHOWS AND EXHIBITIONS



MEI WU

UNIVERSITY of MANITOBA
November, 2004

INTRODUCTION

SECTION 1: INQUIRY PROCESS

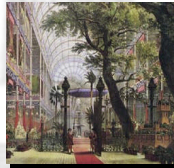
- Theory Findings
- Case Studies

SECTION 2: DESIGN

- Design Strategies
- Programming
- Design

Background

- **Trade Shows**
- **Historical Context**
 - The first International Exposition at the Crystal Palace
Hyde Park, London, 1851
Sir Joseph Paxton
 - The trade-show industry after World War II
Transformation of the Canada National Exhibition (CNE)



Public Trade Show

Social Spaces Within Trade Show

Social spaces include:

- Entrance / Information
- Café, food area
- Lounge Area
- Seminar, meeting space
- Service store (retail on display or bookstore)



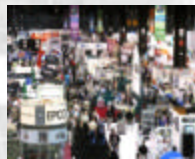
Significance:

- Needs:
 - 68.4% of the attendees going for networking and social events (NeoCon 2002)
- Advantages
 - Provide amenities for socializing, revitalizing, and retaining
 - Allow exhibitors to interact with potential purchasers in a more intimate and comfort setting
 - Help to improve the entire exhibiting quality

Conventional Tradeshow Design



- **Grid booth layout**
 - Easily lost in space
 - Lack of spatial rhythm
 - Dead zone
 - Unbalanced exhibiting effect
- **Omission in social space design**
- **Unawareness in enhancement of social networking in public space**



Design Intent

- Finding a strategy in planning a trade show
- Developing a generic prototype of social space within trade shows
- Designing a memorable, mix-use, and human friendly social space to promote social networking in trade show

INTRODUCTION		Theory Findings
	SECTION I	■ New Urbanism • Neighborhood development • Nodal development: Primary node, Secondary node • Using of public space • Emphasis on aesthetics, human comfort, and create a sense of place Seaside, Florida  
SECTION II		

INTRODUCTION

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SECTION III

Theory Findings

- Environmental Psychology
 - Physical arrangement can promote or isolate communication (Jan Gehl, Life between buildings: Using public space.)

Isolation	Contact
walls	no walls
long distances	short distances
high speeds	low speeds
multiple levels	one level
orientation away from others	orientation toward others

INTRODUCTION
SECTION I
SECTION II

Theory Findings

- Environmental Psychology
 - Pleasure and arousal:
 - Mehrabian – Russell's hypothesis

The graph illustrates Mehrabian-Russell's hypothesis, plotting three types of environmental settings against the degree of arousal (Low, Moderate, High). The y-axis represents the 'Person's Desire to Approach Setting' (positive) and 'Person's Desire to Avoid Setting' (negative). The 'Pleasant Settings' curve rises from low to moderate arousal and then plateaus. The 'Neutral Settings' curve peaks at moderate arousal. The 'Unpleasant Settings' curve starts at a low level of desire to avoid at low arousal, peaks at moderate arousal, and then decreases at high arousal.

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SECTION II

Case Study-1

- **National Trade Centre, Toronto, Canada**
 - Zeidler Roberts Partnership Architects, 1997
- **IIDEX NeoCon Canada**
 - Canada's largest exposition and conference for the design and management of interior environments
 - Grouped booths with certain identity
 - Implicit streetscape settings
 - Approachable social spaces

The background features a faint architectural site plan or map.

INTRODUCTION

SECTION I

SECTION II

Case Study-2

- **National Exhibition Centre, Birmingham, UK**
 - Edward D. Mills & Partners. 1976
 - UK's Largest Exhibition venue and busiest exhibition centre in Europe
- Well pedestrian system
- Central piazza as a primary node
- Moderate interior colour




INTRODUCTION

SECTION I

SECTION II

Distance Control

Design Strategy-1

- +/- 3.25 m (10ft.) ---- Social communication;

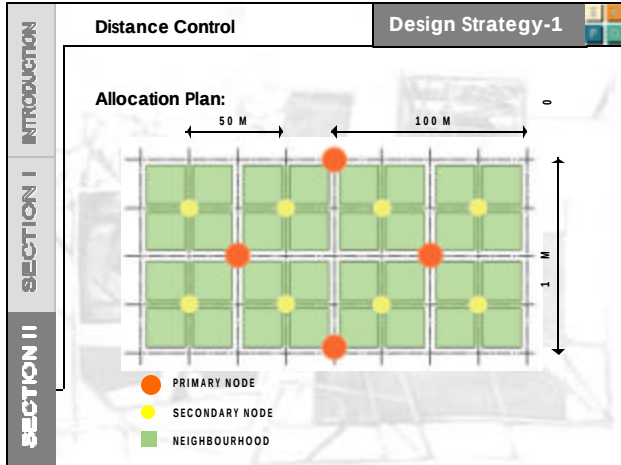
Social Distance (1.30 to 3.75 meters) is the distance for ordinary conversations among friends, acquaintances, neighbours, co-workers, and so on. (Edward T. Hall, The hidden dimension)
- 7 m ---- Distance of hearing

Within this distance, the ear is quite effective, and people feel easier to engage in actual conversations.
- 25 m ---- Spatial distance

At this distance, most people can perceive relatively clearly the feelings and moods of others. Kevin Lynch gives spatial dimensions of around 25 meters as immediately comfortable and well dimensioned in a social context.
- 0-100 m ---- Social field of vision.

Within this range, it is possible to determine with reasonable certainty a person's sex, age, and what that person is doing.
- 500 m ---- Walking distance.

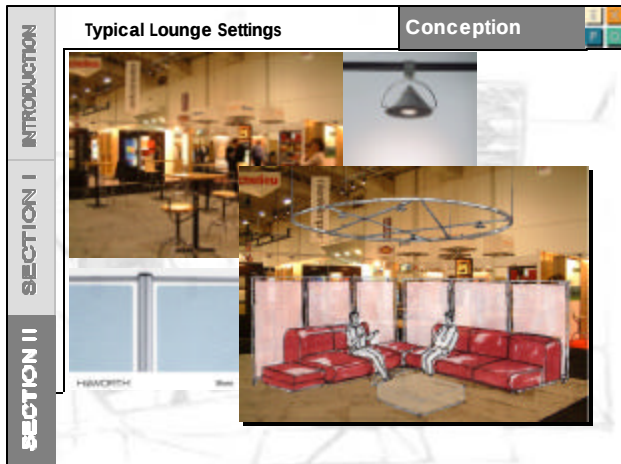
400-500 meters is the acceptable walking distance for most people in ordinary situation. For children, old people, and disabled people, this distance is often considerably less.



Design Strategy-1

Sitting Area in Social Space:
The guide principle to arrange the sitting area in public space is to place the benches around a table at right angles, which is easier to engage in conversation. Thus, the sitting area facilitates a number of functions beyond merely sitting. (Ralph Erskine)

Edge Effect:
The preferred staying areas are found along the borders of the spaces or at the edges of spaces within the space. A well-equipped public space should offer many different opportunities for sitting and standing in order to give all user groups inspiration and opportunity to stay. (Jan Gehl)



Interior Streetscape **Design Strategy-2**

Imageable Space:

- Identity, or objects in background;
- Structure, or objects in relationship to each other;
- Meaning, or personal, societal, or figurative belief. (Kevin Lynch)

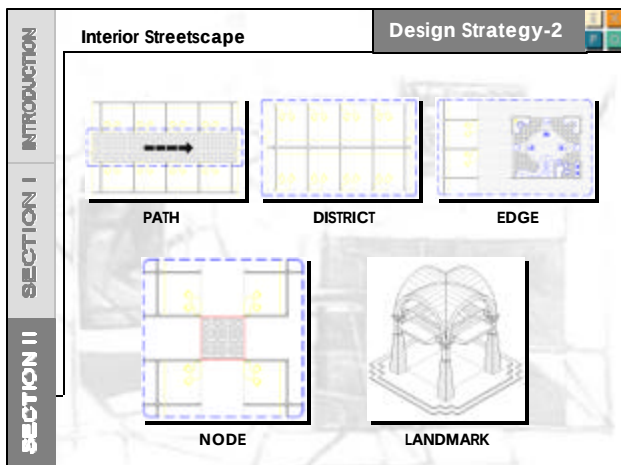
Mapping Elements

- Path
- District
- Edge
- Node
- Landmark

Design Tactics

- Figure ground;
- Continuity;
- Sequence;
- Rhythm
- hierarchy.

Market Place, Miami



Modular Design **Design Strategy-3**

- Mobility
- Flexibility
- Light weight
- Ease of assembly
- Time saving in erecting and dismantling
- Convenience of storage and delivery
- New technology application

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INTRODUCTION

Design Goals

Programming

Objectives:

- To encourage communication and interaction between attendees by creating an attractive and comfortable environment for socializing;
- To strengthen the identity and image of exhibition spaces;
- To improve approachability of more exhibiting stands, therefore promoting the advantages of exhibitors

Social space should be:

- An attractive oasis to visitors
- A soothing and welcome atmosphere
- A place of contact with diversity of trade show attendees
- A mix of activities that could not foster in other locations
- A sustainable design concept for providing possibilities of expansion and reformation

SECTION II

SECTION I

INTRODUCTION

Project Description

Programming

Proposed Floor Plan

1 PUBLIC WASHROOM
2 CATERING
3 TELEPHONE, CHANGING ROOM
4 ADMINISTRATIVE OFFICE

SECTION II

SECTION I

INTRODUCTION

Bubble Diagram

Programming

SECTION II

SECTION I

INTRODUCTION

Floor Layout Plan

Design

SECTION II

SECTION I

INTRODUCTION

Streetscape

Design

Installation System & Variations

SECTION II

SECTION I

INTRODUCTION

Town . District

Design

Circulation Analysis

Overview Perspective

New Town of Broekpolder, Amsterdam, Holland, by Rob Koier and Christoph Kohl

