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" *Embodied within acts of destruction*

is the potential for creation.

Within one catastrophic event

the human condition is reduced to its most primal state

while being brought to the threshold of possibility[1] "

Figure 04   Running before the fire: residents at the Ramaphosa informal settlement try to salvage building material before the blaze overtakes them : Botes (2008:[1 of 64])

Figure 05   The heat of the fire exposed the seed of the King protea : Farm 215 (2009:[7 of 20])

03 | THEORETICAL DISCOURSE

What follows are questions investigating a design response in the event of a disaster. During the course of this discussion this dissertation will look at the current role of design in general, the embodied elements of disaster, and the sociological impact these events have.

The argument points out the differences between shelter and dwelling, and identifies and interprets opportunities in terms of an appropriate design reaction.

3.1 THE CURRENT DEBATE ON DESIGN

It seems uncanny that one woman can so accurately foresee the trajectory of design trends. Yet when listening to Li Edelkoort[2] one realises very quickly that her remarkable ability to observe provides a subtle perspective on things we've unconsciously known all along.

The concept of osmosis becomes a useful analogy in understanding the evolving role of design today as a strong urge/need for consensus. She explains that there will be no more black and white but only discernment between different shades of grey.

Gray is a mentality, presenting the notion of collaboration between separate entities. The desire to belong

will continue to increase. The world is uniting against new-found enemies whether they are natural disasters or the fluctuating economy. Just as the ashes in Figure 04 tell of an unfortunate moment for the King Protea it is a necessary one for it to realise its potential.

In a recent lecture Anthony Dunne[3] suggested that, when we design for debate, design becomes a reflective medium within which we speculate. The questions derived from such speculation, even if they are not always feasible, are questions that only design can ask.

Designers have to innovate. Innovation means generating the right questions and asking them profusely.

The profound comment by French anthropologist Claude Lévi-Strauss[4] can be interpreted to say "[t]he **designer** is not a person who gives the right answers, he is one who asks the right questions."

At the present time a climate of debate prevails. It is important to define the role of design and to always continue to do so. These thoughts were confirmed by the words of Anthony Dunne and Fiona Raby: "no longer can design change the world, the world is changing design."

1 Sadler (2004:[abstract])
2 Lecture at the Design Indaba Conference 25-27 February 2009, Cape Town

3 Anthony Dunne, head of the Interaction Design department at the Royal Collage of the Art, in a lecture at the 2009 Design Indaba, Cape Town.
4 ['scientist' replaced with designer]. Claude Lévi-Strauss developed structuralism as a method of understanding human culture and society : Lévi-Strauss ([n.d]:1 of 1)

3.2 ELEMENTS OF DISASTER

Incidents, accidents, disasters, catastrophes and crises are essentially events that have the potential to cause great damage or loss. The differences between them emerge in the aftermath of the occurrence. This is why one would often hear of an area being **declared** a disaster zone. Disastrous events are classified according to the scale of damage or loss they inflict, their potential to cause fundamental change, and their ability to be contained by disaster management strategies.

Why do these events occur and what are their implications?

3.2.1 INSTABILITY

When disaster strikes that, which provides our grasp on stability is shaken. The trust in the tangible is lost and a new relationship between the physical and psychological needs to be established in the post-disaster efforts.

Verb Crisis[5] articulate this issue particularly well when they define crisis / disaster as:

> ...a turning point, a decisive moment when tensions and instabilities peak and change becomes inescapable. Crisis implies the questioning of beliefs and habits; it demands adjustments in perceptions and in modes of action.

Paul Virillio[6] maintains that we live in a world of perceived stability, "a landscape of events concealing future collisions". Our perception of stability is like saying that only one side defines a coin. One can not truly understand its identity unless both sides of the coin are taken into account.

Virillio[7] calls this the "integral accident". Therefore, whenever one creates something, be it a house or a train, one inadvertently creates its potential failure. Accidents and disasters lurk in the shadow of every invention.

3.2.2 CHANGE

According to Gilles Deleuze, every actual thing is subject to an infinite set of continuing and open-ended transformations and recreations. This concept is also expressed in art. Williams[8] explains identity thus:

> There can be no limited and clearly defined actual thing whose existence does not presuppose a set of past and future catastrophic changes.

Identity is born from instability and change. Identity in itself is never static but is continually redefined by change. It is because of this potentiality that anything exists.[9]

Change is therefore proportionate to the scale of the event that creates it.

The truth in life is that the only constant it contains is change. Disaster is merely an unexpected and accelerated form of change yielding unforeseen consequences. Michael Barkun[10] defines disasters as the "long term and fundamental destruction of the primary environment", and accidents as "episodes that may severely affect a community but that do not lead to fundamental social change".

3.2.3 OPPORTUNITY

Virillio argues that 'invention is merely a way of seeing, of reading accidents as signs and as opportunities' [insert reference]. Accidents and disasters both have the power to make society see things differently.

By relating Virillio's statement in terms of architecture we see that accidents and disasters are types of unpredictable collages of everyday life. They can be ignored or embraced to heighten visual engagement and release-hidden associations. [11]

3.2.4 CREATION

Deleuze advocates catastrophe. He is of the opinion that from great destruction comes the opportunity for creation.

In the study of semantics it is understood that an incident can be defined as an event that has the potential to cause damage but doesn't. The same potential lies in the basic unit of survival: shelter. The process of loss that is embedded in the event of a disaster requires one to move past the hapless reality towards a counter-actualization through the act of shelter.

The seemingly humble act of shelter brings with it the embodied potential to cause fundamental change, as well as the opportunity to dwell, to feel at home and re-establish an identity with the self and one's surroundings.

The sense of home, familiarity, and ownership are intangible concepts most often neglected in the effort to regain stability. A shelter is not just a building; it has to enable a new relationship between man and his environment to grow.

5 Ballesteros (2008:[cover page])
6 Virilio & Der Derian (1998)
7 Virillio (2006:47)

8 Williams (1997:233)
9 Williams (1997:233)
10 Higgins (2004:16)
11 Porter (2004)

Figure 06   Man shaving at Klerksoord shelter camp ⦂ Pretorius (2008b:[2of10])

3.3 ENVIRONMENTAL PSYCHOLOGY

Environmental psychology[12] is *the study of how our surroundings and circumstances influence how we act and how we feel.*

In the wake of disaster both tangible and intangible losses occur. Sudden changes in environment and situation have a great impact on how relief efforts are carried out and experienced. The potential of space to aid emotional well-being is overshadowed by limited time and resources in the case of an emergency.

The process of loss that transpires is often prolonged by new environmental stresses, and space allocated is based on efficiency not human conduct. It is evident that the role of design is not only to gain insight about how space influences behaviour, but also to synthesize basic human needs and elements of environmental psychology into an efficient solution.

3.3.1 THE PROCESS OF LOSS

Being homeless and/or displaced can be identified as a process of loss[13] in terms of both the tangible and intangible:

Tangible losses: personal items, documentation, clothes, utilities, loved ones, money, assets, equipment, vehicles, houses, livestock, businesses, property, land.

Intangible losses; identity, home, community, networks of social relations / institutions, familiar surroundings, daily activities, security, ownership, livelihood, wealth and, in the case of refugees, loss of one's country.

It is evident that losing one's primary dwelling entails losing more than just a roof over one's head. Being deprived of the temporal and spatial structuring of everyday life as well as one's identity ultimately decreases the chance of having a flexible, autonomous and ongoing way of life.

3.4 THE HIERARCHY OF NEEDS

The argument contained in this thesis draws on knowledge generated by two distinct theories on human nature, in order to attain a more comprehensive understanding of human needs and how they can be accounted for spatially.

(a) Maslow's Humanist theory:

The humanistic approach may be conceptualized as a phenomenological one because it stresses the importance of the 'subjective, unique experiences of each person and the potential all of us have for self-fulfilment through spontaneity, creativity, and personal growth'.[14]

According to Abraham Maslow (as evident in the emergency phase) basic human needs have to be satisfied before any other prerequisites for self-actualization can be fulfilled.

Table 01 illustrates the order of human needs. Newmark and Thompson[15] discuss various types of shelter in relation to Maslow's theory:

Firstly, **physiological** needs that constitute reasonable shelter from the environment depending on the acceptable cultural standard; secondly, **safety** and security of occupants and their possessions; thirdly, **social** needs pertaining to shelter serving as the background for defining daily activities and intimate relationships in and around the shelter; fourthly, **self-esteem** and ego needs – these refer to the purpose of housing as a symbol of status within a society – and finally, **self actualization.**

The principle of hierarchy in design is based on Maslow's theory. It is argued that the perception of value attributed to a designed object [or space] is dependent on the level of needs it satisfies. The order of needs can be interpreted as design criteria:[16]

▶ **Functionality**: Does the design meet the primary requirements?

▶ **Reliability**: Does the design behave in a stable and consistent way?

▶ **Usability**: Is the design simple and forgiving to use?

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12 Hayes (2004:255)
13 Staples (2007:218)

14 Papalia & Olds (1988:464)

15 Newmark & Thompson (1977:8-12)
16 Lidwell *et al* (2003:106)

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Table 01   Maslow's Hierarchy of Human Needs ⦂ Swartz, De La Rey & Duncan (2004:175)

Self Actualization
Self Esteem
Social
Safety
Physiological
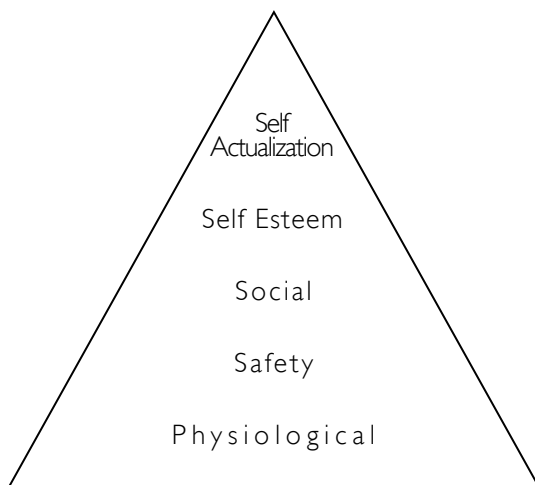
Table 02   Hierarchy of Design ⦂ Lidwell, Holden & Butler (2003:107)

Creativity
Proficiency
Usability
Reliability
Functionality
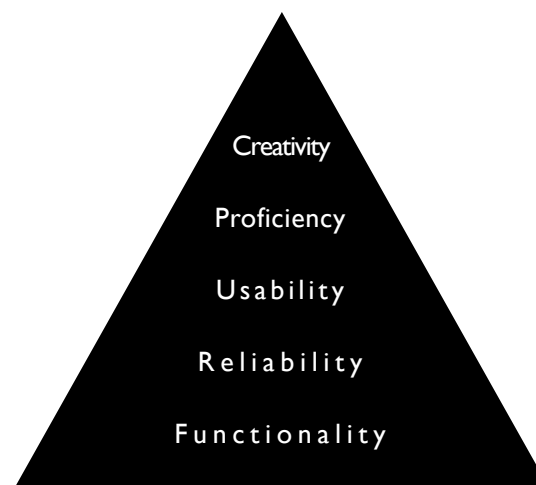
▶ **Proficiency:** Does the design enable the user to do things better?

▶ **Creativity:** Does the design encourage interaction in innovative ways? Was the design used to explore and create areas that extend both the design and the person using it?

(b) Skinner's behavioural theory:

Behaviourists consider environmental factors to be very important. The premise of behavioural theory[17] is that a person is the product of his/her environment, but also that this person possesses the ability to change or create new environments.

Frederic Skinner[18] postulates that there are three aspects that stimulate our actions: "…the frequency of behaviour, the situation in which the behaviour occurs, and the reinforcement associated with the behaviour." Such is the case with Sophronia.

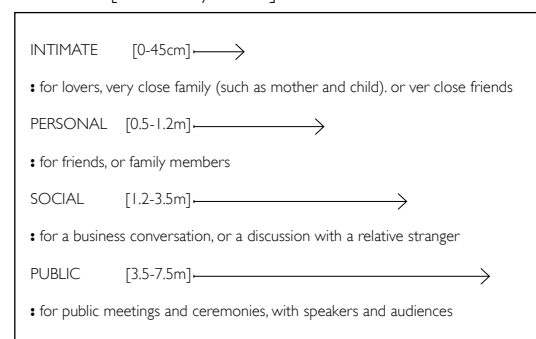## 3.4.1 ASPECTS THAT INFLUENCE HUMAN BEHAVIOUR

(a) Personal Space

The person must be comfortable in the company of others. Not having the ability to control personal space causes anxiety.

(b) Distance

Space or distance is a form of "non-verbal communication.[19]" Table 03 gives an indication of the varying zones of personal distance. The measure of acceptable personal space depends on the cultural background of the individual.

Table 03   Zones of personal space ⦂ Hayes (2004:256) [redrawn by author]

INTIMATE   [0-45cm]⟶
⦂ for lovers, very close family (such as mother and child). or ver close friends
PERSONAL   [0.5-1.2m]⟶
⦂ for friends, or family members
SOCIAL   [1.2-3.5m]⟶
⦂ for a business conversation, or a discussion with a relative stranger
PUBLIC   [3.5-7.5m]⟶
⦂ for public meetings and ceremonies, with speakers and audiences

Whilst the proxemics of different cultures differ from each other, this is an aspect of human nature that should not be ignored.

(c) Privacy

The concept of privacy is different for everyone. It is very difficult for a person too loose the socially defined construct of privacy.

(d) Territory

(e) Factors of environmental stress

Changes in the environment and the accompanying noise levels can be deeply stressful. When combined with overcrowding the inherent lack of control over the given situation can be doubly stressful.

(f) Post-traumatic stress disorder

Post-traumatic stress occurs when a person has lived through a severe emotional trauma[20], such as experiencing a disaster. Post-traumatic stress disorder was previously referred to as shell shock, especially amongst soldiers.

The components of grief are:

1. shock

2. disorganisation

3. denial

4. depression

5. guilt

6. anxiety and/or panic attacks

7. aggression

8. resolution

9. reintegration

17 Butler-Bowdon & Pratt (2008:chapter 47)
18 Swartz, De La Rey & Duncan (2004:177)

19 Hayes (2004:255)

20 Hayes (2004:267)

The city of Sophronia* is made up of two half cities. In one there is the great roller-coaster with its steel humps, the carousel with its chain spokes, the Ferris wheel of spinning cages, the death-ride with crouching motor-cyclists, the big top with the clump of trapezes hanging in the middle. The other half-city is of stone and marble and cement, with the bank, the factories, the palaces, the slaughterhouse, the school, and all the rest. One of the half cities is permanent, the other is temporary, and when the period of its sojourn is over, they uproot it, dismantle it, and take it off, transplanting it to the vacant lots of another half-city.

And so every year the day comes when the workmen remove the marble pediments, lower the stone walls, the cement pylons, take down the Ministry, the monument, the docks, the petroleum refinery, the hospital, load them on trailers, to follow from stand to stand their annual itinerary. Here remains the half-Sophronia of shooting galleries and the carousels, the shout suspended from the cart of the headlong roller-coaster, and it begins to count the months and days it must wait before the caravan returns and a complete life can begin again.

* Excerpt from CALVINO, I. 1974. *Invisible cities*. New York: Harcourt Brace Jovanovich, translated from Italian by William Weaver.

3.5 THEORETICAL PRECEDENTS

3.5.1 SOPHRONIA

In Valcino's depiction of Sophronia[21], the city is made up of two halves that exist in a state of constant flux. In the one half a perception of stability prevails, and the architecture alludes to the manifestation of institution, religion and commerce. It represents the physical presence of order.

The other half is inhabited by the eternally young. Life in this part of the city is free from responsibility and is dominated by an almost childlike naivety. It remains in this state partly because of choice and partly because it is treated in a manner that prevents it from growing up.

It is only when the half-city of authority departs that the utter dependence of the carousel lifestyle is revealed. All might not be lost in this crucial moment if the inhabitants remember that they have a choice if given the opportunity.

And so without the means of initiating a livelihood, what remains of the half-city of Sophronia is left waiting with nothing more than unrealized potential.

The African city bears much resemblance to Sophronia. The fate of our cities lies in their ability to create opportunity and then choosing to make something of it.

This situation is as true of African cities as it is of their disaster relief strategies. Without an enabling shelter process the luxury of choice cannot be exercised.

Although it is beyond the means of any project to make such a crucial decision, it has the capacity and responsibility to design for opportunity.

3.5.2 TENT CITIES, SEATTLE

The tent city movement in Seattle posits a fundamental question. It argues that success is not determined by the number of people that do or do not sleep on the street but rather by how we as a society are able to adapt to living in an unstable world. Although their objective predominantly concerns the homeless, the rationale behind the movement can be applied to disaster relief.

The first tent city appeared in 1994 in downtown Seattle as a protest against the city's policies regarding the homeless. Tent City 1 was set up in clear view of the highway, and become a very public protest. It was not long before the city of Seattle sent bulldozers scattering the inhabitants. Four years later Tent City 2 emerged to illustrate how the city's harsh actions have failed to solve the problem of homelessness.

The third Tent City was established at the Crown Hill United Methodist Church in 1999. Here a situation similar to that of the refugee settlement at the Central Methodist Church in Braamfontein is presented. Matthew Allen[22] explains why this type of event is not uncommon: "This situation tends to give the encamp-

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21 Groák (1992:59)

22 Allen (2005:44)

ment political credibility by situating it within the widely understood framework of missionary work,..''

The Church provided the movement with the right to belong, albeit temporarily.

The outcome of the tent city movement is an approach that gives the homeless the right to occupy a site under a three-month lease agreement. The inhabitants are issued with permits, and on fulfilling certain terms and conditions the permits are renewed and they are allowed to relocate to another selected site. This has become an inclusive solution that provides the homeless with the opportunity to become recognised citizens of the city.

3.6 NOMADIC PORTABLE ARCHITECTURE

In architecture the discourse of shelter and the discourse of dwelling derive from two separate schools of thought. Nomadic architectures represent a third discourse. Based on the philosophy of Deleuze and Guattari, Allen[23] suggests that:

Nomadic architecture turns out to be an effective alternative to an untenable architecture of stability and permanence, either in the form of an individual Dasein (as in the case of dwelling) or of a rational system (as in the case of shelter).

Nomadic and temporary architecture carry meaning through events. Enclosure is not a prerequisite for place or dwelling. Heidegger[24] purposefully uses an illustration of a bridge instead of a house to explain the concept of place. Enclosure does however provide an 'address' to identify the event of dwelling.

When a temporary structure is placed on a site, it signifies a physical manifestation of place. Shelter reflects a similar function by enabling the act of dwelling through temporarily providing structure.

Kronenburg[25] maintains that: ''…the power of the experience rather than its duration is more important in gauging its meaning and effect''.

3.6.1 EPHEMERAL QUALITIES OF SPACE

The ephemeral qualities of space becomes the focus of the interior atmosphere which carries meaning through experience without being bound to place.

In terms of disaster, although temporary in duration, the impact of the event can be lasting. Likewise the nature of temporary shelter has the potential to be the beginning of a new experience.

Architecture in terms of the act of building encapsulates the ephemeral essence of dwelling. When dwelling entails the meaningful relationship between man

and a given environment, architecture becomes the gathered work enabling man to dwell [as a certain way of being] between earth and sky.[26]

Norberg-Schulz exemplifies dwelling as consisting of orientation and identification. He suggests that concrete place can satisfy this need [for orientation and identification] by means of organized space and built form. He goes on to say that ''when dwelling is accomplished, our wish for belonging and participation is fulfilled''.[27]

'[a] good environmental image gives its possessor an important sense of emotional security'. Kevin Lynch says that: 'which is the obverse of fear that comes with disorientation'.[28]

Organized space [interior architecture] brings other activities that grow to define the home in order. Hence shelter is the beginning of a process, that involves first a sign of the event of dwelling before it can host a more complex scope of concerns.

3.6.2 PRESERVATION OF THE FAMILY UNIT: HOME

The significance of the ephemeral qualities of home and the concept of dwelling is evident during post-disaster

23 Allen (2005:3)

24 Kronenburg (1998:7)
25 Kronenburg (1998:7)

26 Norberg-Schulz (1985:13)
27 Norberg-Schulz (1985:7)
28 Norberg-Schulz (1985:20)

Figure 07   Habitat logo - www.habitat.co.uk (2009)

recovery operations, when victims cling to the family unit in an attempt to regain something of what was lost. This provides insight into the complex relationship between shelter and dwelling and is a fundamental characteristic to consider when designing shelter.

House can be described as the "physical objective environment" whilst home is understood in terms of "subjective psychosocial" activities.

Newmark and Thompson[29] explains that "[h]ouses become homes when we use shelter and share in its space with a group of intimates in a special meaningful way".

The company logo of the Habitat stores so clearly and simply communicates the complexities of home. The icon made up of a single line marries the separate impressions of house and home as a united and interlinked entity.

One very important activity of dwelling is that of arrangement. Kronenburg[30] explains that "we rearrange the objects and possessions we carry around to establish our personal sense of place". Arrangement helps us organise our surroundings in a familiar way.

The Afrikaans word for this is 'nesskop' which translates into nesting, i.e. establishing a place of safety, comfort and familiarity. Nesting is an important intangible quality not usually taken into account when designing temporary structures.

Norberg-Schulz[31] regards the house as the center of personal life. "In general, the center represents what is known, in contrast to the unknown and perhaps frightening world around. It is the point where man acquires position in space as psychic being, the point where he 'lingers' and 'lives' in space". [check quote]

Finding a sense of place after a disaster is an important step in recovering one of the many intangible losses experienced by displaced individuals.

3.7 INTERIOR ATMOSPHERES AND AESTHETICS

Can one ever truly account for the requirements for survival through only quantifiable physical elements? The hypothesis of this study argues that one cannot.

It often happens that the self-determination and morale of the complex human psyche surpasses all rationality in the goal to survive. It is with this quality that the interior atmosphere of the proposal hopes to connect.

Visually stimulating designs ease anxiety and help us to 'embrace our fears'. A similar theme appeared in design during the nineteenth century, where new and foreign technologies were masked behind elaborate ornamentation. Wosk explains that "Industrial steam engines designed as classical temples evoked an aura of calm in an era of rapid technological change".[32]

Wosk[33] questions the 'provocative' role of aesthetics in designing for disasters. At what point does visual appeal trivialize the austere realities of safety and survival?

Humanitarian design can be both beautiful and functional as long as it adheres to the hierarchy of design. This hierarchy is ranked from the lowest to the highest, beginning with functionality and ending with creativity. Unless lower-level requirements are met, a design rarely succeeds in achieving the desired aesthetics without becoming superficial and frivolous.

This is in essence the dilemma of designing for disaster relief. The process is tediously subjected to the severe reality of economy and efficiency before any other needs can be addressed. Designers have to employ innovative and low-cost tactics to portray beauty and elegance in objects and environments intended to ease some of life's most pressing conditions.

John Maeda[34], founder of the Simplicity Consortium at the MIT Media Lab, writes about the laws of simplicity that "more emotions are[sic] better than less". He uses the example of the ipod as the nexus of minimalism and function. The appearance of the ultra sleek ipod instigated a multitude of accessories for one to personalise and 'attach emotion to'. Even the invention of the smiley face ;-) exemplifies the human need for better emotional expression.

'Tactics' for designing with emotion:

Philipe Starck[35] interprets design as the poetry of humanity's story of existence. He tries to design objects that 'profit' the end user and not the manufacturer by imagining the society, the person, the part of that persons's body that will use or experience the product. In doing so the product becomes a part of that persons story, revealing the poetry of everyday life.

Starck maintains that "Humour is the most beautiful symptom of human intelligence". He finds meaning in objects that display intelligence, poetry and humour. Design cannot change someone's life but it does influence it.

Surface plays an important role in the acceptance of new materials. Cardboard in architecture can be seen as being the new technology (or rather new application of old technology) within the contemporary built environment.

Marcel Wanders recalls a time when he came up with over 30 words to describe ornament and decoration just because he was afraid of being perceived as frivolous.

Any of the affiliated designers under the Droog Design umbrella display a similar ethos in everyday objects using low-cost, industrial, or recycled materials.

29 Newmark & Thompson (1977:2)
30 Kronenburg (2002a:20)
31 Norberg-Schulz (1985:13)

32 Wosk (2007:96)
33 Wosk (2007:93)

34 Maeda (2006:63)
35 Starck (1996:522)
36 Fraser (2002:[n.p])

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"*It is very important that even though a building may only be for temporary use, it has to be pleasing to the eye - something of beauty.*

A person has to be able to feel that this is my home."

: Shigeru Ban[36]