

Chapter 2

T H E O R Y



RESEARCH / CONJECTURE / SUPPOSITION / SPECULATION



“The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.”

- Klaus Schwab, 2016



Figure 2.1: Four industrial revolutions (Schwab, 2016, edited by author)



2 . I N T R O D U C T I O N

Chapter 2 is an investigation of the theoretical basis that shapes the background subject matter of the dissertation project and informs the programme and the eventual architectural product. The theory is concerned with the inherent dualities (discussed in Chapter 1) related to respectively, the side-effects ('compromisers') of technology and conversely the benefits of technology and its role in the built environment. It is subdivided into two main sections:

2.1 Notes on the background of modernization:

'Compromising attributes of technological advancement'

2.1.1 INTRODUCTION

2.1.2 SIDE-EFFECTS OF TECHNOLOGY

2.1.3 TECHNOLOGY AS COMPROMISER: HISTORICAL CASES

2.1.4 TECHNOLOGY AS COMPROMISER: RECENT CASES

2.2 Interactive [digital] environments

2.2.1 INTRODUCTION

2.2.2 INTERACTIVE INSTALLATIONS AS A SPATIAL CONSTRUCT

2.2.3 INTERACTIVE ENVIRONMENTS AS A COUNTER-STRATEGY TO COMPROMISERS

1, 4, 5 AND 6: 'Interactive architecture as a cultural negotiator'

2.3 CONCLUSION:

2.3.1 DUALITY OF PERMANENCE AND CHANGE



2.1 NOTES ON THE BACKGROUND OF MODERNIZATION:
'COMPROMISING ATTRIBUTES OF TECHNOLOGICAL ADVANCEMENT'

"It has become appallingly obvious that our technology has exceeded our humanity."

- Albert Einstein

2.1.1 INTRODUCTION

Section 2.1 is an outline of the underlying theories that inform the programme and resultant architecture, specifically focused on the **side-effects of technology**. The sources used in this section range from various architectural and urban theorists to other disciplines, such as the fields of social psychology and contemporary culture. Everything is considered through the lens of advancing technology and what effects it has on man and reciprocally the built environment.

2.1.2 SIDE-EFFECTS OF TECHNOLOGY

The intention of The Modern Project was and still is to emancipate humankind; instead, we are entering an age where modernity has, in some ways, shifted from emancipator to enslaver (van Rensburg, 2016). The following section elucidates various ways in which modernisation has, in its attempt to aid mankind's progression, impeded certain traits of basic human nature. It starts out with historical notes on the subject; thereafter, the specific ways in which technology has compromised human nature over the past two decades (with which this dissertation is concerned) are listed, with a discussion on various ways of overcoming these 'compromising side-effects'.

2.1.3 TECHNOLOGY AS COMPROMISER: HISTORICAL CASES

Throughout history, most technological advancements - whilst assisting growth - came with some form of compromise of mankind's own abilities. Examples include the following: the Gutenberg printing press was a great accomplishment during the fifteenth century and the first vehicle of spreading information throughout society, but it was the first of many 'crutches of cognitive memory' that would have 'nefarious effects on organic memory' of mankind (Choay, 2001: 9). The invention of the car is another example; it advanced our speed and transformed our perception of place, but simultaneously also impeded our own physical movement abilities.

The widespread proliferation of television in the mid-twentieth century provided extended entertainment within the confines of our homes, rendering the need for social interaction with outside people to a minimum; in essence, the television characters replaced our friends (more on the subject of *escapism* to follow later). In *The Work of Art in the Age of Mechanical Reproduction*, Walter Benjamin (1936: 5) gave a comprehensive account on the 'decay of the aura' of art and predicted the fall of art and architecture as a form of culture, because, he said, man would become obsessed with the two-dimensional image (van Rensburg, 2016).



Figure 2.2: Illustrations depicting historical cases of 'technology as compromiser'

2.1.4 TECHNOLOGY AS COMPROMISER: RECENT CASES

“Before 1900, daily life for the majority of individuals was agrarian, static, local - in other words, not that different from what it had been for centuries. The twentieth century, however, altered the pace and pattern of daily life forever. Within two generations, the old world (for better and worse) was gone. Its loss meant the loss of two things that had always grounded us: our place within an actual community and our connection to a particular landscape.

What started us on the road to unreality? Though the catalogue reads like a shopping list of many of the century’s most dramatic trends - urbanization, consumerism, increasing mobility, loss of regionality, growing alienation from the landscape, and so on - technology, their common denominator, was the real force behind our journey toward abstraction.” (Slouka, 1995: 2)

Recent examples related to the compromising attributes of technological advancement (similar to those stated above) but which specifically transpired over more or less the last two decades are identified as follows:

1. Loss of slow pace of reality
2. Loss of work-life balance
3. Loss of relationship with nature
4. Loss of identity
 - Cultural identity
 - Architectural identity
5. Loss of the quality of intimate face-to-face communication
6. Mass allure of [negative] ‘escapism’

Each compromising attribute will now be discussed with an investigation as to how these can be overcome. The first two, namely the *loss of the quality of intimate face-to-face communication* and the *mass allurement of [negative] escapism*, will be discussed in relation to one another as they are inter-related circumstances; thereafter each is discussed separately.

2.1.4.1 COMPROMISER 1: Loss of slow pace of reality

In *War of the Worlds: Cyberspace and the high-tech assault on reality* (1995: 3) Slouka uses the example of **speed** to illustrate our affiliation with *unreality*, as a result of technology:

"As everyone knows, unreality increases with speed. Walking across a landscape at six miles an hour, we experience the particular reality of place: its smells, sounds, colors, textures, and so on. Driving at seventy miles an hour, the experience is very different. The car isolates us, distances us; the world beyond the windshield...seems vaguely unreal. At supersonic speeds, the divorce is complete. A landscape at 30,000 feet is an abstraction, as unlike real life as a painting. It's an unreality we've grown used to. Habit has dulled the strangeness of it."

The same is true of cities. Like most cities that developed during the nineteenth and twentieth century, overall, Pretoria honours the car far above the pedestrian. Danish architect, Jan Gehl (as cited by Betts, 2011) notes how modernisation plunges everything into an accelerating fast-forward plummet - everything except for the human being himself. Marshall Berman (1988: 165) states that "the distinctive sign of nineteenth-century urbanism was the boulevard, a medium for bringing explosive material and human forces together; the hallmark of twentieth-century urbanism has been the highway, a means for putting them asunder. We see a strange dialectic here, in which one mode of modernism both energizes and exhausts itself trying to annihilate another, all in modernism's name." Danish architect, Jan Gehl (2011, 72) professes that *life takes place on foot*, stating that 'only "on foot" does a situation function as a meaningful opportunity...in which the individual is at ease and able to take time to experience, pause, or become involved.'

Even on foot, the Modern Project has rendered the leisurely act of *flânerie* obsolete ("*flânerie*" defined as "*aimless idling; dawdling*"). Modern metropolises today are characterised by hustle, rush, hastened activity, everything happens quickly. Eric Jaffe (2012) reflects on the *urban metabolism* of cities and draws a direct parallel between the "fleetness of foot and the fatness of wallet". When one *strolls* today in a capitalist-driven society, it is thought to be strange. Still, Gehl (2011, 69) advocates sufficient slow speed for 'meaningful social information' to be discerned.

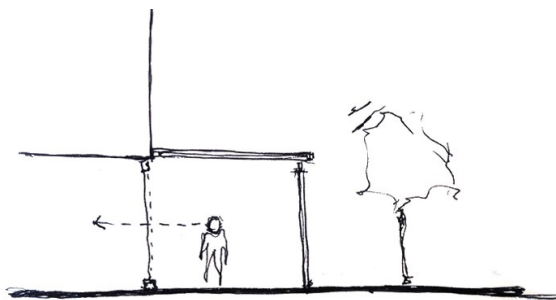
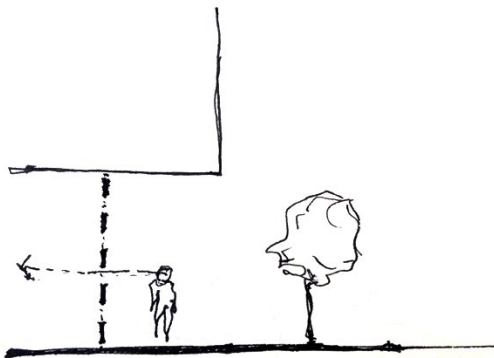
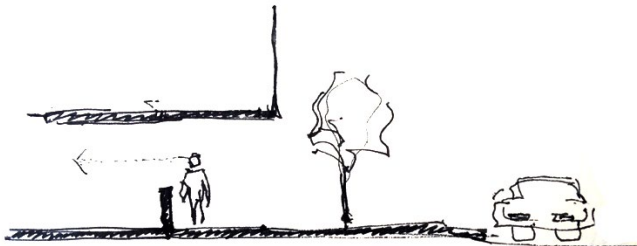
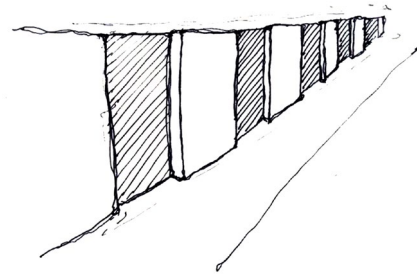
The question is therefore, how to slow down *urban time*; and once pedestrianisation is maximised, how to further slow down the speed of the walker?

A.) By the **thickening of the spatial experience**:

- **Providing enticing attractions** & as much diversity as possible along the meandering route.



- Soft ground floor edges (Open, active)



"In front of the open and active facades there was a noticeable tendency for pedestrians to slow down and turn their heads towards the facade, and they stopped frequently. In front of the closed facade sections the walking tempo was markedly higher, and there were fewer turned heads and stops...the average number of people who walked by or stopped in front of the active facade sections was seven times greater than the activity level in front of the passive facades. This is because people walked more slowly, made more stops and walked more often to and from the the shops on the street with the soft edge." (Gehl, 2010: 79)

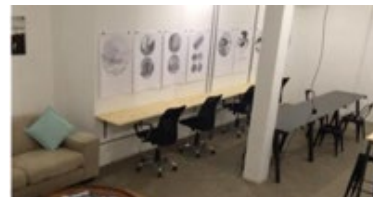
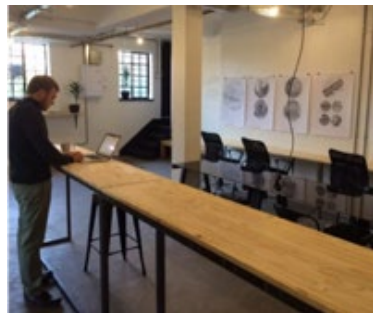
B.) By **crafting a relaxing environment** (When people are at ease they do not feel the need to pass by quickly, they will linger):

- **Human-centred and -scaled spaces**

- **Integrating nature** much more into urban life: in a study conducted on the *vitalising effects of being outdoors and in nature*, Bernstein et al. (2010: 159) states that "being outdoors was associated with greater vitality, a relation that was mediated by the presence of natural elements". (See section on the *Biophilia Hypothesis*)

2.1.4.2 COMPROMISER 2: Loss of Work-life balance

With the rise of communicative technologies the line between work and one's personal life is excessively blurred. In some professions, it is extremely beneficial, (journalism, news-reporting, stock markets etc) in most others it is very convenient and therefore utilised, resulting in all the more



non-place-based working-time as well as infringement between work-hours and personal hours. In a study conducted by E. J. Hill et al. in 2003, a comparison was drawn between the following three office types: a traditional office, a virtual office and a home office. The study found that although the virtual office proves more efficient than the traditional office in terms of work-performance, it 'is associated with lower work/life balance' and that 'less success in personal/family life is cause for personal and family concern' (Hill et al, 2003: 236).

- Co-working offices:

The recent abundance of contemporary 'co-working office' typologies (or 'coffices' which can also relate to a coffeeshop + office combination) (Figure 2.3) provide workspace for the general public, but to which the worker is not constrained.



Figure 2.3: Local (Pretoria Station) and international examples of co-working offices

It provides the option of a workplace and the daily routine of 'going somewhere to work' and coming home for personal life, but does not keep you to the confines of the same office each day; it gives one more access and choice of surroundings so one can choose where to work each day. It is also especially targeted towards freelance professionals who typically work from home but still want a daily routine of going somewhere to work. The 'coffice'-owner wins because his tables are always full, and the professional 'wins' because he only has to rent a table and wifi-connection instead of the walls, floors and furniture of a traditional office - and his work-life-balance can be reclaimed.

2.1.4.3 COMPROMISER 3: Loss of relationship with nature

The *Biophilia Hypothesis* was introduced by Edward O. Wilson in 1984 and is a description of humankind's inborn need to connect with nature; he defines (1993, 31) it as "the innately emotional affiliation of human beings to other living organisms". The term *biophilia* was first used by German psychologist Erich Fromm (1964), to denote an inherent psychological orientation of man's attraction to everything that is alive and living. Stephen R. Kellert (1993, 21) states that "the biophilia hypothesis proclaims a human dependence on nature that extends far beyond the simple issues of material and physical sustenance as well the human craving for aesthetic, intellectual, cognitive, and even spiritual meaning and satisfaction." Wilson goes on to note that these biophilic rules remain a part of humans even when they remove themselves from the natural environment and that "they persist from generation to generation, atrophied and fitfully manifested in the artificial new environments into which technology has catapulted humanity" (1993, 31-32).



Figure 2.4: Nature versus Technology

[MEDIATED NATURE]

In a research study on The Human Relation With Nature and Technological Nature, Kahn et al. (2009, 37) investigates the effects of nature versus technological nature - "technologies that in various ways mediate, augment, or simulate the natural world". (Examples include video footage of nature, robot animals, plasma display 'window' simulating nature and immersive virtual environments etc.). Their findings concluded with the concern that as each generation's frame of reference (of nature) changes, due to the real natural environment being replaced by simulations of it, humanity will suffer what is called 'environmental generational amnesia' (Kahn et al, 2009: 41); but because of biophilia (which, as Wilson states, is a human condition that will persist whether we are in connection with nature or not) 'we will suffer physical and psychological costs' (Kahn et al, 2009: 41). Therefore the importance of **integrating (real) nature into the built environment** (Figure 2.5), especially in the case of a predominantly urban heat island where the GPW site is situated, for the benefit of mankind's physical and psychological health, is established.

A.) Integrating nature into built fabric:

- **Blurring the inside - outside** relationship

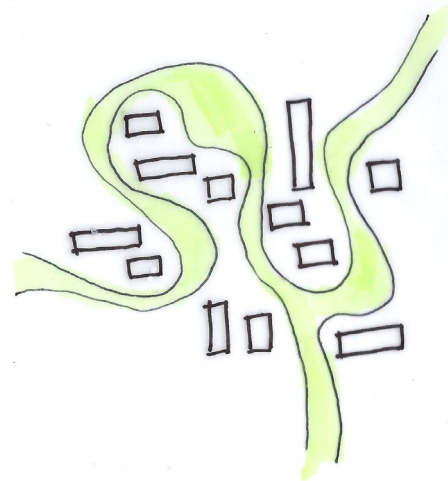
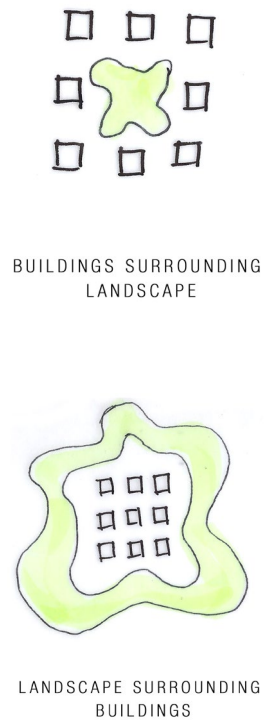
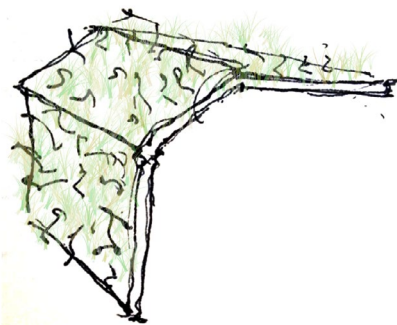


Figure 2.5 Integrating nature into the built environment



- **Continuous urban surface** - from walkway to wall to roof



- Bring user in contact with natural properties of water by **integrating water elements** in the design

- **Vegetation throughout building** - horizontal, vertical and slanted planes (inside and out)

2.1.4.4 COMPROMISER 4: LOSS OF CULTURE & IDENTITY

A.) CULTURAL IDENTITY

“Are we not gradually becoming detached from our foothold in geographic and cultural soil and going to live in a fictitious and fabricated culture, the culture of simulacra that Umberto Eco has written about?” (Pallasmaa, 1988 as cited by Canizaro, 2007, 130)

Globalisation and information technology are eroding local place-based traditions and cultural identities. Johnston (2001: 38) writes that “modern technology has seriously contributed to the breakdown and loss of self. Human existence is commonly cloaked in technological language”. He cites postmodern writer Jean Baudrillard who calls the human mind “a pure screen, a switching centre for all the networks of influence.” As a result of one country predominantly controlling the media, all over the world, the americanisation of other cultures is taking place; individual identities are being dissolved and resultantly, collective identities along with them.

A heterogenous country like South Africa is already challenged with finding a collective national identity as it is and now technologies are transforming the rich and diverse South African culture into one global non-identity. Fred Kent, director of *Project for Public Spaces* (n.d.) states that “culture is born out of human interaction”. The question is then how spatial design can play a role in this; and the obvious suggestion is that maximized public space that encourages spontaneous social interaction between people is the answer, but according to author and architectural critic Aaron Betsky, the nebulous concept called “*public space*” is not enough, it no longer suffices “as an antidote to this loss of control and collective identity we have been using for at least the last century” (2015: a), he notes the thing that makes public space valuable as the essentially, “*other*” (2015: b). Jan Gehl (as cited by Betts, 2011) states that “there is nothing that is more interesting than other people”; echoing Jane Jacob’s “eyes on the street”, Gehl likened the city to movies, noting that watching other people is “our greatest joy.”

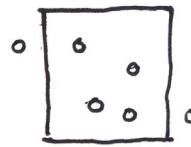
“The modern city can turn people outward, not inward; rather than wholeness, the city can give them experiences of otherness. The power of the city to reorient people in this way lies in its diversity; in the presence of difference people have at least the possibility to step outside themselves.” (Baudelaire, 1986 as cited by Sennett, 1990: 123)

“In a society becoming steadily more privatized with private homes, cars, computers, offices and shopping centers, the public component of our lives is disappearing. It is more and more important to make the cities inviting, so we can meet our fellow citizens face to face and experience directly through our senses. Public life in good quality public spaces is an important part of a democratic life and a full life.” - Jan Gehl, 2011

In light of these statements, if the thing which makes public space so attractive is *diversity* and 'encountering otherness', a multicultural society like South Africa has an advantage over other countries to craft rich and diversified public space. Furthermore, Betsky (2015: a) sees that an essential problem with the public urban realm is the fact that "any space that is not private is immediately appropriated by the state or by commercial interests, regulated, and thus not free."

Alternatively he explores the methods that architects can use to counter this and "wrest a space of common identity from the state and corporate control." He advocates **blurred, liminal or expanded border spaces** and warns against the creation of monumentality, saying that it might work spatially in some instances, but in terms of identity, it excludes through its semiotic messages ("Columns and pediments speak of centuries of control, while large spaces in which you do not do anything in particular also weigh on those of us who do not take or have the time to meditate on the freedoms they afford" (2015: a)).

Instead he prefers the "the messy vitality of spaces that send confused and contradictory messages" which is "more liberating than those that tell you what they are and where (or whether) you belong in their confines." Embracing this overall multiplicity is the key, according to Betsky, to place-making for rich and diversified culture.



B.) ARCHITECTURAL IDENTITY

“The Modern Movement enthusiastically aspired to create a universal culture. The new “machines for living in” set in “space, light and greenery” were to emancipate their inhabitants from their bonds with the past, and to cultivate a New Universal Man.

Half a century later, however, the techno-rationally biased and economy-obsessed buildings that have become only too familiar everywhere impair our sense of locality and identity. The standard building of today accelerates estrangement and alienation instead of integrating our world-view and sense of self. Simply, we have lost our faith in utopia.” (Juhani Pallasmaa, 1988 as cited by Canizaro, 2007, 129)

The advent of widespread intercontinental air-travel during the 20th century (and before that, widespread commercial trans-oceanic travel by steam-vessels in the 19th century) exposed people on a large scale to other cultures and other architectural styles. It was a great step of enlightenment for architects to broaden their frame of reference and also played a role in the stimulation of the International Style (as first defined by Hitchcock and Johnson in 1932). It was, however, cause for the first of many great digs in the grave for the concept of placed-based locality in architecture. Juhani Pallasmaa (1988 as cited by

Canizaro, 2007, 129) states that “the sheer force of industrial technology, combined with mobility, mass-communication, and uniformity of life-style, is causing cultural entropy that minimalises diversity.”



Once exposed to another cultural influence, however enriched by it, we are also infiltrated by it and subconsciously, it erodes our regionalist *genius loci*. Especially as advancing travelling technology brings us to places completely contrary to where we are from, it seduces the mind with forms and styles not necessarily appropriate to our native context, resulting in confused, hybridised architectural product; (various post-modernist examples exemplify this cross-breeding) and in this sense, technology sabotages our intuitive sense of place-making.

Another detrimental attribute of technology on architecture is the tendency of (especially internationally renowned) architects to design buildings from the perspective of the 2D image. Knowing that the whole world will perceive their creations on the world wide web, they tend to design for that, rather than for the people who will use them. In an interview with Frank Gehry, (AspenInstitute, 2009) a parallel was drawn between his Guggenheim Museum in Bilbao as an “iconic object”, with the main function being mere observation, and Snøhetta’s opera house in Oslo,

as an “iconic place”, which the public can use and interact with. Gehry called the man who asked the question extremely pompous and ordered him to be escorted from the premises. Jan Gehl goes further to term Dubai’s buildings’ “birdshit architecture” as the “process of premium architects being flown in to drop their buildings onto a city with no regard for their impact on public life.” (Betts, 2011).

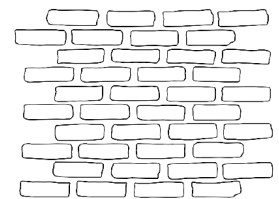
Alternatively, Pallasmaa (1988 as cited by Canizaro, 2007, 130) advocates the “constituents of locality” which are “reflections of natural, physical and social realities” as “expressions and experiences of **specific nature, geography, landscape, local materials, skills, and cultural patterns**”. Furthermore, Barker (2012: 118) describes a *mediative regionalist* approach that “straddles the boundaries of tradition and modernity in both imitative and inventive ways”:

“Mediated regionalist responses straddle the line between the polarities of machine and nature. They accept and resist the extremes of local and global influences, preferring to synthesise the positive aspects of both with a view to allowing the inhabitant to progress technologically but still attain an experiential connection with their surroundings and a concrete association with tradition. Here a mutually beneficial relationship between tradition and modernity is achieved.” (Barker, 2012 : 115)



In relating these theories to the context of Pretoria it is necessary to fleetingly highlight the distinctive characteristics of the regionalist style in Pretoria. As noted by Fisher, le Roux and Mare (1998), ‘*The Third Vernacular*’, regionalist architecture emerged in Pretoria in the 1940s and 1950s and is characterised by the following:

- Traditional plan-forms
- Rustic brick, either directly as clinker or as whitewashed stock
- Low-pitched iron roofs
- Deep shaded eaves and verandas
- Sun-shy windows
- Sensitivity to landscape and land features
- An architecture responsive to climatic constraints



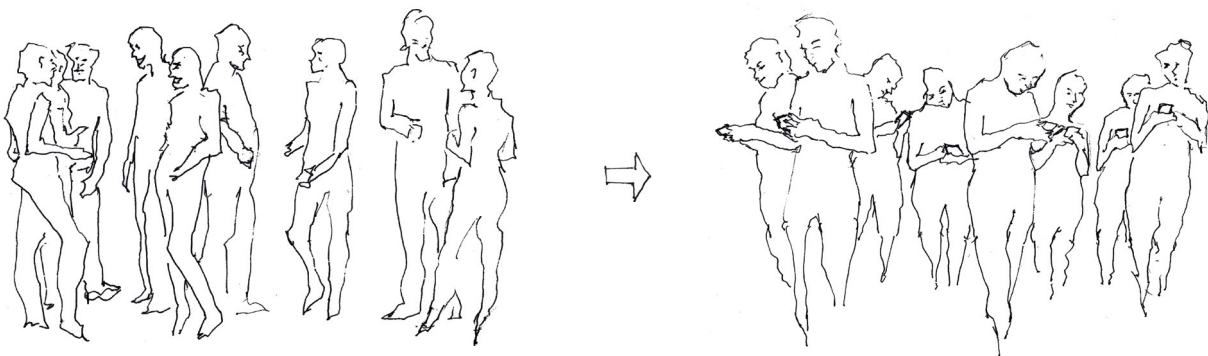
In light of the above-mentioned theory, the main architectural intention in relation to architectural identity is therefore to *mediate* the existing traditions that characterise Pretoria’s regionalist identity (as well as the existing site-specific architectural identities and tectonic coherency as discussed in Chapter 3) with the ensuing modernity and inevitable global evolution in architecture.

2.1.4.5 COMPROMISER 5: Loss of the quality of intimate face-to-face communication

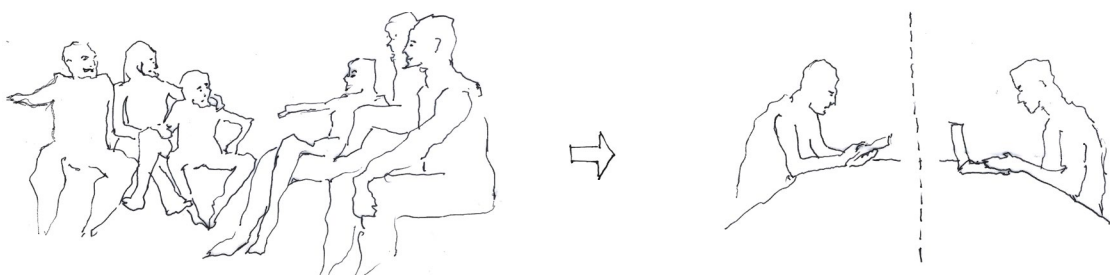
"I fear the day that technology will surpass our human interaction. The world will have a generation of idiots." - Albert Einstein

In an age where the availability of mass-information and communication has aided personalised learning and information-sharing, it has also isolated human beings from one another in a physical, social sense. In this section, the contemporary cult of cyber-culture that has brought about numerous shifts in social behaviour in society over the past two decades is examined. American author, Mark Slouka (as cited by Choay, 2001: 167), analyses "cyberspace's double denial of the corporeal dimension of the human condition and of the body's role in the constitution of the social link". The following statement is from his publication: *War of the Worlds: Cyberspace and the high-tech assault on reality* (1995: 4):

"We've come a long way, very quickly. What surprises us now, increasingly, is the shock of the real: the nakedness of face-to-face communication, the rough force of the natural world. We can watch hours of nature programming, but place us in a forest or a meadow and we don't know quite what to do with ourselves. We look forward to hanging out at The Brick with Chris on Northern Exposure but dread running into our neighbour while putting out the trash. There has come to be something almost embarrassing about the unmediated event.... It's so naked, somehow."



This statement carries even more weight two decades after its publication and is a critical prognosis for the future. In a sense, *information-technology* and the *digital age* (and currently entering the *virtual age*), have become *reverse prostheses*, aiding in communication but simultaneously restricting face-to-face, social interaction. A Stanford psychiatrist and author of *Virtually You, The Dangerous Powers of the E-Personality*, Dr. Elias Aboujaoude (2011 as cited by Kim, 2015) states that "we may stop 'needing' or craving real social interactions because they may become foreign to us".



2.1.4.6 COMPROMISER 6: Mass allure of [negative] escapism

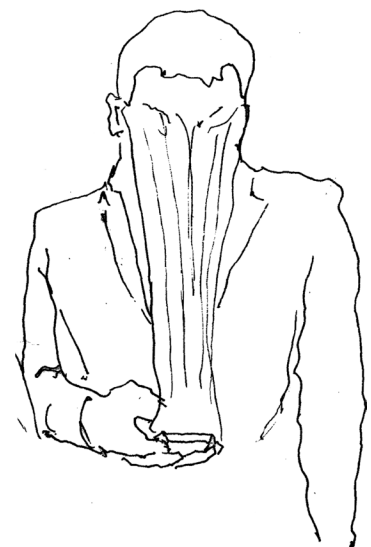
Beyond just the lack of face-to-face interaction is the phenomenon of *negative escapism*. Although it is not a new occurrence - human beings have *escaped* into written and staged narratives for centuries, the ancient greek theatre can be seen as an example - and although most people do it in some form or another, **it cannot be denied that recent (and continuing-) advancing technologies have made the act of escapism so much more ubiquitously available and so much more alluring**. A definition of escapism is as follows: 'a mental diversion by means of entertainment or recreation, as an "escape" or dissociation from the perceived unpleasant, boring, arduous, scary, or banal aspects of daily life' (Doveling et al, 2011: 174).



There are many opinions on the subject of escapism, some positive, other negative. A Norwegian psychologist, Frode Stenseng devised a dualistic model of escapism to denote various forms of engagement on a scale in relation to the resultant self-suppression or self-expansion it might have. 'Self-suppression escapism derives from motivation to avoid negative evaluation of self by getting focused on an activity, whereas self-expansion is motivated from facilitations of positive experiences by getting immersed in an activity' (Stenseng, 2009: 4). Examples of self-suppression escapism are clearly those which have self-detrimental effects such as drug and alcohol

abuse, most forms of addictions, masochism, eating disorders etc; examples of self-expansion escapism are things that promote creativity and growth such as a youth reading fantasy literature.

"The idea of a life lived online, or outside of regular society, is largely seen as dangerous and unhealthy. There have been some reports of self-imposed social isolation that illustrate the negative side of withdrawal. Since the 1990s, the term hikikomori has been used to describe the estimated 500,000 to one million Japanese citizens who refuse to leave their homes. According to Dr. Takahiro Kato, a psychiatrist working at a hikikomori support center in Fukuoka, Japan, many hikikomori display depressive and obsessive-compulsive tendencies, while a minority "appear addicted to the Internet." Then there are the infamous World of Warcraft players who lose themselves in their massive online universe. In 2004, Zhang Xiaoyi, a 13-year-old from China, reportedly committed suicide after playing WoW for 36 consecutive hours, in order to "join the heroes of the game he worshipped." In 2009, a three-year-old girl from New Mexico tragically passed away from malnutrition and dehydration; on the day of her death, her mother was said to have spent 15 hours playing the game. Former Warcraft player Ryan van Cleave explained to The Guardian in 2011 that "living inside World of Warcraft seemed preferable to the drudgery of everyday life" when he had played 60 hours a week. Groups like WOWaholics Anonymous have been created to help former players like van Cleave who became too invested in the game." (Kim, 2015)



Another psychologist and author of *This Virtual Life: Escapism and Simulation in Our Media World*, (2001) Andrew Evans, defines *negative escapism* in relation to Abraham Maslow's *hierarchy of human needs*; noting that it constrains the individual's sense of love and belonging in the context of family, friends and social commitments, which is ranked just after basic physiological and safety needs (Figure 2.6).

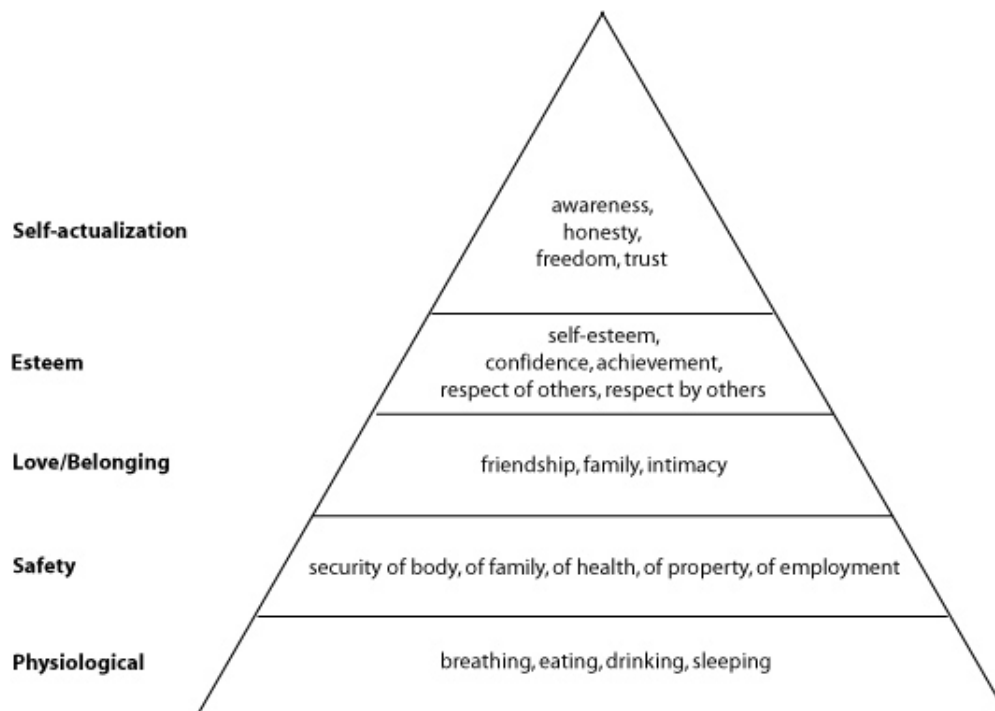


Figure 2.6: Maslow's Hierarchy of [Human] Needs

Johnston (2001: 38) states that "postmodernity compounded the already existing identity crisis brought on by modernity. By stressing the role of the individual freedom, modernity began to weaken one's sense of identity through the breakdown of the family and other bonds.The irony is that as individualism grows, it comes at the expense of the individual who fails to perceive his or her sense of connectedness in the world."

The reason these psychological observations are important is that current technologies offer such an appealing and ever-improving immersive environment in which to get lost and escape. Rem Koolhaas (2000, as cited in da Costa and van Rensburg, 2008: 47) stated that "architecture, as urban agent, can only intervene as a condition and a social negotiator once a full understanding of the human and social landscapes exists." The examples mentioned in Kim's article (2015) may sound extreme, but as technology advances, and virtual reality devices become much more accessible, the allure of immersing oneself in unreality will prove increasingly hard to resist and as a result of this, all indicators point to the fact that these unfortunate events (cited in Kim's article) will repeat themselves all the more often in future.

2.1.5 How to overcome these debilitating social phenomena?

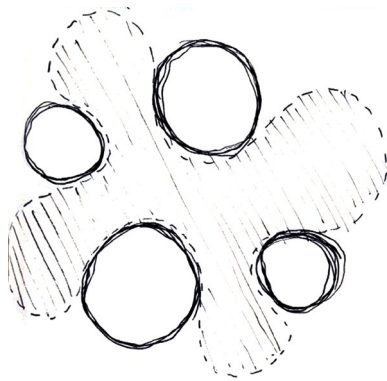
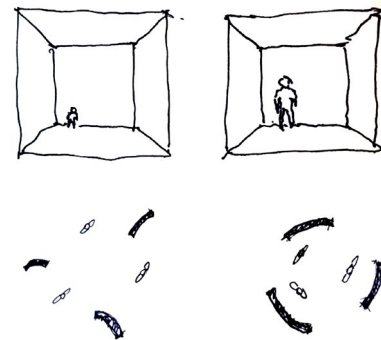
HYPOTHESIS: ARCHITECTURE AS A 'HUMANIST NEGOTIATOR'

The fact of the matter is that modernisation is inevitable. Accelerated technological advancement is inevitable. All of these human-compromising circumstances are inevitable. That being said, as architects (and by extension, as shapers and builders of the space that contains human life) we have an opportunity to improve upon these conditions when designing for humanity and the following section is an investigation on how to overcome them.

Simply stated, (in light of the first two 'compromisers') the question is then:

1.) How do you make a building (or space) more **social**?

- Through **collective, social, humanist-scaled space-making** rather than universal, monumental, objective space-making

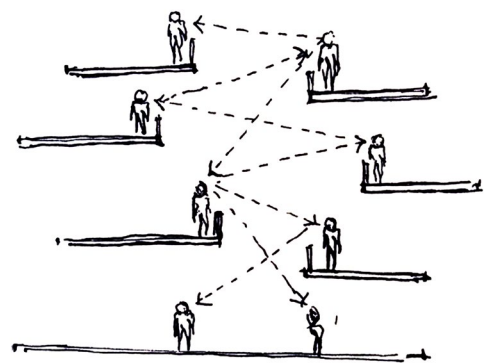


- By celebrating and enhancing (extending, thickening the experience of) the spaces in a building where social interaction would typically occur (i.e. circulation routes, foyers, landings, gathering spaces, all the 'grey' / un-programmed spaces)

- By **maximising informally programmed space**

- As much as possible **dialogue and connection** throughout all spaces and volumes.

- **Multi-functionality** - da Costa & van Rensburg states that "human behaviour and social practices are inherently spatial, and that the organisation of space is a social product." (2008:47) When a space is adaptable to a whole range of social functions, in-place social interaction is promoted and maximised.





SECTION 2.2 : DIGITAL INTERACTIVE ENVIRONMENTS

2.2.1 INTRODUCTION

In response to technology-induced-compromisers 1, 4, 5 and 6, (as explained in Section 2.1) specifically, the 'loss of slow pace of reality', the 'loss of identity', the 'loss of the quality of intimate face-to-face communication and the 'mass allure of [negative] 'escapism'', the following section is an exploration of various ways in which digital technologies can 'thicken' the urban spatial experience. Firstly, the need for public urban space as a gathering platform for different cultures in a heterogenous society - and specifically, how digital interactive technology can enhance this process - is discussed; thereafter follows numerous case-studies of public interactive installations that aid in drawing people together.



“At their most supernatural, interactive design environments can have a transformative effect. They take the visitor to somewhere else. By actively involving the public they are both ‘porous’ and ‘responsive’, beckoning us like the rabbit in Alice in Wonderland to enter and participate in another world.” (Bullivant, 2007: 6)

2.2.2 INTERACTIVE INSTALLATIONS AS A SPATIAL CONSTRUCT:

In contemplation of whether or not these digital installations are considered to fall in the realm of spatial design, a precedent of ephemeral architecture is examined: the Blur building by Diller Scofidio & Benfro (Figure 2.7). According to the architects (2002), it is an “anti-spectacle” that highlights “our dependence on vision itself”. The Blur Building questions the fixed boundaries of space-making and illustrates how architecture can be a direct outflow of a transient event and nothing beyond that event. Interactive design environments have, albeit small-scale interventions, the “power to transform people’s experiences and perceptions...shift the way people interact both with those around them and also with the space around them” (Castle, 2007: 5). If architecture is about place-making and adding value to our environment, it can be said that in some instances these interactive installations have more potential to do that than bricks and mortar.



Figure 2.7: Blur building - Diller, Scofidio and Renfro

2.2.3 Interactive environments as a counter-strategy to compromisers 1,4, 5 and 6:

INTERACTIVE ARCHITECTURE AS A CULTURAL NEGOTIATOR

Considering James Young's statement, from *Textures of Memory* (1994: 6), that “in the absence of shared beliefs or common interests, art in public spaces may form an otherwise fragmented populace to frame diverse values and ideals in common spaces” in order to “propagate the illusion of common memory.” In a very heterogenous cultural country like South Africa, the problem with reconciliation is not just a contested heritage, it is the mutual enlightenment and acceptance of current cultural differences.

Digital screening on buildings can aid the reconciliation process through selective educational information communicated to the general public, whereby these differences in cultures can be highlighted and common, ideal values can be celebrated just by walking down the street.

In support of this, Kirralie Houghton (2011: 4) discusses the potential of urban screening to generate a sense of fun and creativity that give a place vibrancy; she states that the “overlaying of digital narratives over physical place has the potential to enhance the meaning and understanding of heritage” and that “localised content can enhance a place’s unique identity and serve a civic function” - the recent example of the subversive political protest agenda (Figure 2.8) in 2015 is an example of this (however not digital). The possibilities with digital content are much more versatile.

Castle (2007: 5) goes on to say that it is “the encouragement of sociability where the interactive is at its most potent, where it has the ability to transcend the everyday – causing the individual to pause a minute in a street corner or a gallery foyer to have fun, be playful and have occasion to smile out of unassailable joy.” In light of these statements this report argues that digital screening has the potential to go beyond the one-sided spectatorship of mere marketing-objectives, to interactive, participatory public urban experiences that can be shared by the collective of city dwellers and encourage cultural interaction.



Figure 2.8: Utilising a building facade for subversive political strategy

The following section considers various case-studies of existing interactive installations that attempts to accomplish the social urban objectives as highlighted above, there-after follows a strategy of specific installations and their content to be employed in the design product.



Figure 2.9: Daan Roosegaarde's glowing Van Gogh cycle path in the Netherlands - 'where history meets the future'

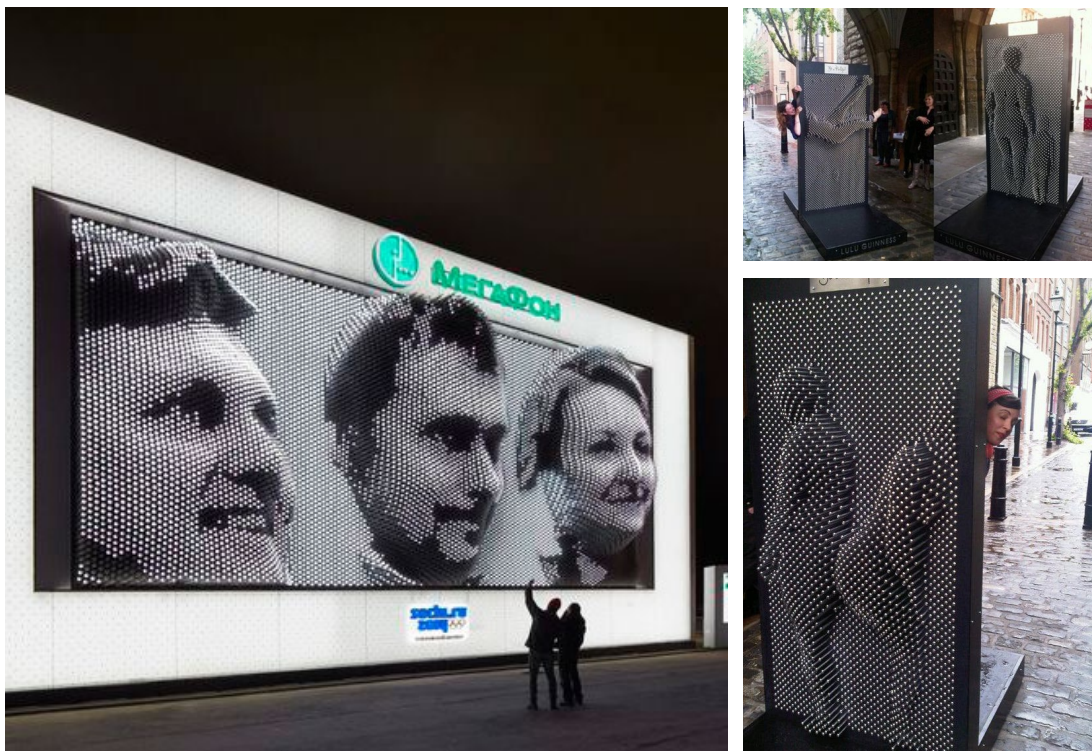


Figure 2.10: (Left) "Architectural Mount Rushmore" - Asif Khan Studio's *MegaFaces* (Right): Manual pin installation by Lulu

MegaFaces is a pavilion that "contorts itself to recreate 3D images of the faces of visitors relayed via digital face scans made in photo booths installed within the building". It comprises 11,000 actuators underneath the cube's stretchy fabric membrane, the installation allows for three, eight meter tall faces to emerge from the wall at a time (Taylor-Foster, 2014).



Figure 2.11: ICE - Interactive Communication Experience by Klein Dytham Architecture in Tokyo, Japan.

The ICE installation takes the form of a 5 x 3.5 metre curved glass wall suspended from the ceiling like an icicle, which responds to bodily movements in a small front lobby info-lounge space. Financial data streams in, visible as electronic ticker tape.

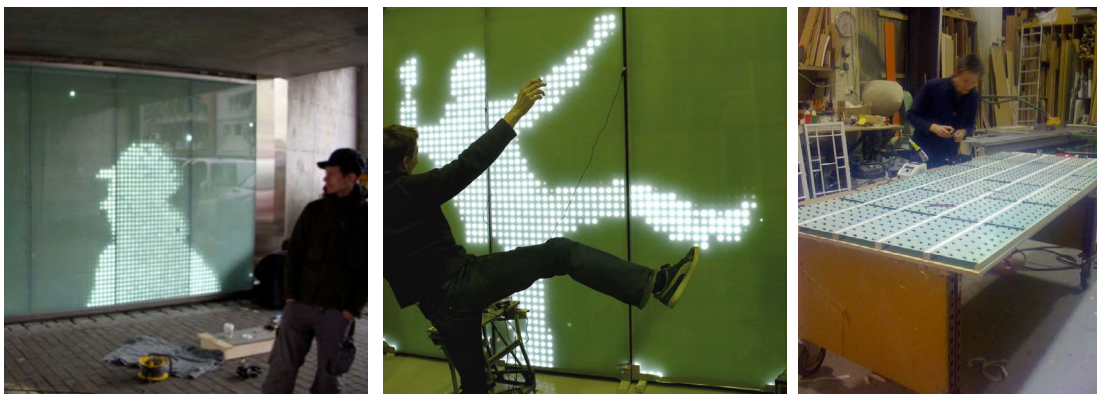


Figure 2.12: *Dobpler* Interactive LED system, Streams and Flows in Sandnes, Norway. Skjelvik Design, 2007.

Dobpler consists of an interactive LED installation in a pedestrian tunnel underneath a railway. It consists of 27m² *Dobpler* modules with motion sensors installed which tracks the movement of any passerby and lights up in the outline of their silhouette.

[*Something which can aid in automatic surveillance of an area.]



Figure 2.13: *Nosy*, an interactive robotic camera and urban display in Tokyo, by Christian Moeller, 2006.

Nosy constitutes a robotic video camera randomly captures the surrounding landscape and people, which are then displayed in bitmap graphics onto three towers covered with white LED panels and laminated glass. Laminated glass, LEDs, robotic light and camera system. Dimensions: 43' x 43' x 15' (Moeller, 2006).



Figure 2.14: 'Civic Exchange' - A public information installation in New York City by Antenna Design, 2004.

Civic Exchange is based on a 'hub' and 'spokes' system that visually embodies the notion of a tree-like gathering place, the information system is an open platform with an interactive map allowing for community participation, with an LED column serving as a public announcement screen.



Figure 2.15: “Mojo” - Robotic light following passerby, by Christian Moeller, 2007, installed in San Pedro, California 2007

Mojo comprises a robotic arm holding a theater spotlight shines a perfect circle of light onto the sidewalk following the passers-by with its light beam. (Precedent for technological surveillance)



Better
air quality



Figure 2.16: THINK Exhibit at the Lincoln Centre in New York, by IBM.

The *THINK* wall visualizes, in real time, the live data streaming from the systems surrounding the exhibit, from traffic on Broadway, to solar energy, to air quality. Visitors discovered how we can now see change, waste and opportunities in the world's systems.

In light of the case-studies discussed in section 2.2 and the potential of digitally interactive environments, the question (in response to Compromisers 5 and 6 discussed in section 2.1) is:

2.) How do you make a building (or space) **that would keep you from wanting to escape reality** (in a self-suppressing way)?

- By the thickening of the lived, real spatial experience:



- Use the technologies and create the inevitable immersive environment, **but do it in a public, urban way that can be experienced collectively**, by a multitude of people, not just one alone (which breeds social isolation)

- Digital urban screening



- Collective learning center programme
- **Combining recreation and education** - learning becomes fun - boundary between work and play is blurred (in a good way, when at work - different to compromiser of loss of work-life balance) therefore enhancing the real, lived experience.

7 . 3 . 1 D U A L I T Y O F P E R M A N E N C E A N D C H A N G E

Figure 2.17 illustrates the duality of “permanence and change” based on the theory discussed in this chapter. Firstly it depicts the inevitable concept of technological advancement that results in change; this modernization also presents us with the six identified ‘compromisers’ on human life.

This dissertation proposes the spatial and programmatic ‘counter-strategies’ to counter these compromisers, which should therefore be permanent elements that remain rooted, fixed constituents throughout future evolutions. On the other hand, the ‘benefits’ (or the ‘utilization of technology’) as well as the functional (and therewith structural- and spatial-) elements are open-ended to change to a degree, in order to accommodate the rapid obsolescence of emerging technologies or changes in future uses of the building.

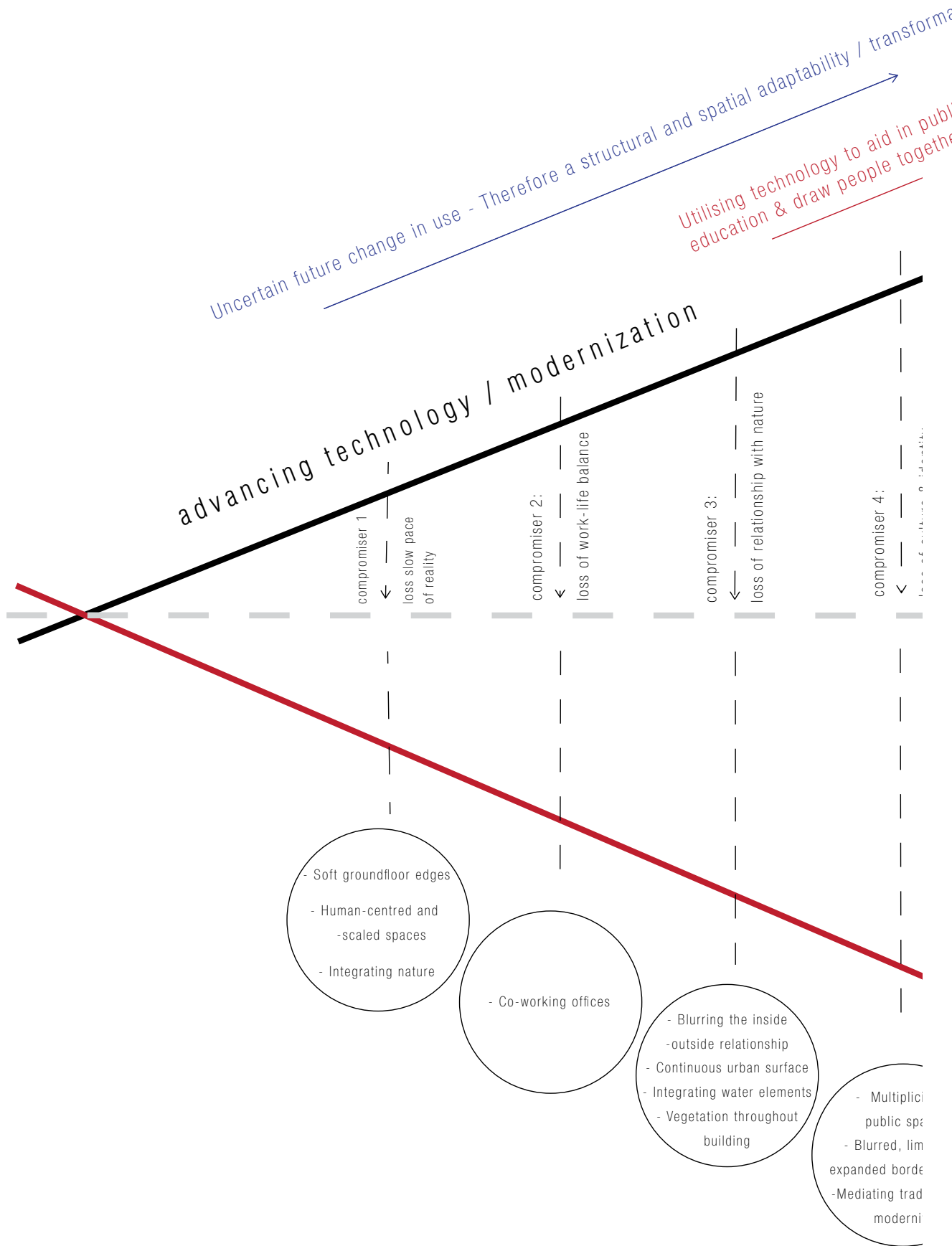


Figure 2.17: Diagram explaining the duality of permanence and change

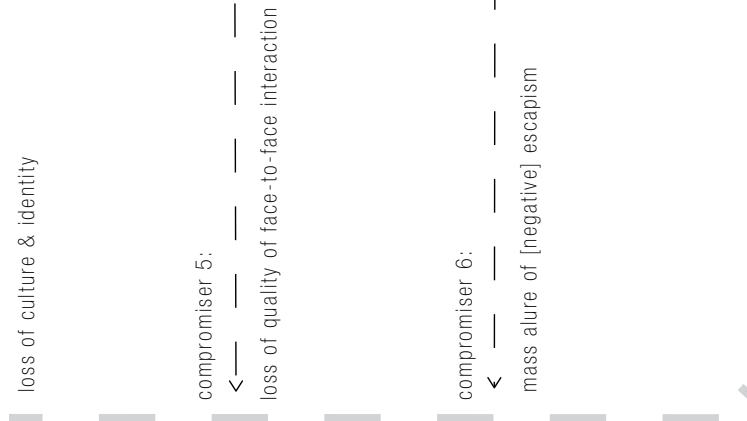
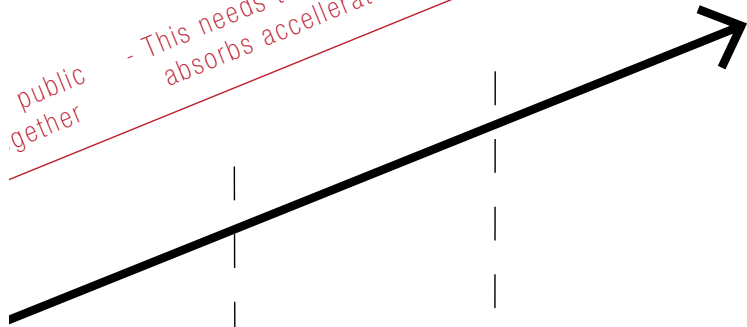


formability

public
together

- This needs to be an **open infrastructure**
absorbs accelerated changing technologies

c h a n g e



detrimental attributes of
technology on human life

Countering the compromising
attributes of technological
advancements with spatial
design strategies

- These counter-strategies need to
stay on as **permanent** elements

city in
pace
minimal or
order spaces
definition and
unity

- Collective, humanist-scaled space-making
- Maximising informally programmed space
- Dialogue and connection
- Multi-functionality

- Digital urban screening
- Use technologies in public to experience it collectively
- Collective TEL programme
- Combining recreation & education

p e r m a n e n t

2 . 3 . 2 C O N C L U S I O N

In conclusion of the the theory-chapter, this dissertation is rooted in the theory of time an change, which means that modernization and specifically technological adnacement is a inevitable outcome. However beneficial and inevitable modernization and technology advancement are, this document argues that spatial designers remain cognisant of the compromising attributes of this technological evolution. Secondly the intention of this project is to purposefully utilize technology and consolidate it within the spatial design process from the onset of the project; specifically with the main intention of engaging people and creating a collective, immersive and interactive environment which draws people together in the public realm.



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