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DEVELOPING URBAN DESIGN DISCOURSE BEYOND THE CRITICAL POINT: THE CASE OF SÃO PAULO

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ABSTRACT

This paper discusses some environmental challenges confronting humanity over the next fifty years by considering conditions that have emerged over the previous fifty years in one of the world's 'megacities'. Problems of homelessness & poor social housing conditions, 'visual pollution' and urban water, are linked through a case study about the City of São Paulo. From the combined perspective of philosophy, the arts, design and engineering, the paper seeks to explain how such diverse disciplinary concerns can be unified through urban design and address a situation that is well beyond what has been called 'the critical point'. Some approaches to urban design are recommended that provide typologies of products and processes to address such challenges.

Keywords:
São Paulo, urban design, spatial justice

INTRODUCTION

Statistics speak for themselves. Any numerical portrayal of urban growth in major world cities during the second half of the twentieth century presents a picture of the relentless expansion of people born into and attracted by the idea of urban living. Exponential growth has happened in many cities in the developing world, as well as in some developed countries, although this is now usually contained through the effective use of urban design.

The increasing scale of the world's largest cities has resulted in new ways to categorize the most complex and largest of urban settlements. One must now extend an understanding of the conurbation and know of the metropolis, the megacity/metacity, the fragmented metropolis or city archipelago, and the megalopolis (Shane, 2011: 346–348). Whichever of these terms apply, it names an urban environment unforeseen fifty years ago.

There is a curious symmetry in the idea that the urban design activity in megacities over the next fifty years must address problems of neglect that have arisen during the previous fifty years. In the case of São Paulo issues can be traced back five hundred years.

The growth of the largest cities since the middle of the twentieth century presents the designers of the present and future public realm with unprecedented and unknown challenges. These relate predominantly to the speed of growth and scale of habitat, and proportionate presence of human suffering in some places. Central in this are some basic questions that emerge from a scenario that sees more people worldwide now living in urban environments than not. One must ask: How does the modern 'megacity' function? What are the social, cultural, economic and environmental challenges? What will be required from designers of future urban environment given current growth projections? It might be argued that answers to these questions have tended to focus on technological solutions for how basic needs regarding shelter, energy, water, and food supply can be met. However, answers to such wide-ranging questions

must also be allied to the capability of design in all its guises. This includes the role of planning to halt uncontrolled growth, as well as effective understanding of the complex interaction between technologies, institutions, communities and individual households. Such challenges require a reappraisal of traditional approaches to urban growth and development that must now also be sustainable.

Metropolitan growth can happen spontaneously, or by design. Urban planning helps cities manage growth by design, through preventative or curative strategies; the timing of visioning, forecasting, plan-making, and implementation are all important to the success of city strategies (UN-Habitat, 2008: 187).

One expects that within these contexts are many professionals engaged in confronting the problems of sustainable urban development. Some, but not all, identify their work as urban design. In either case 'urban design' provides an important unifying transdisciplinary context within which differing perspectives integrate. If this is desirable, problems are likely to be solved by many affiliated in their quest to contain urban growth, better organizing the environment in such ways that address social and spatial injustices. As well as established and recognized built environment professionals — architects, landscape architects, city planners, civil engineers — this should involve many including (but not limited to) philosophers, sociologists, human geographers, graphic designers, and the general public engaged in 'transformative action' (Fry, 2009). The quest for better urban environments is the responsibility of all urban dwellers.

The City of São Paulo is at the heart of confronting challenges presented by unprecedented growth. As one of the largest and fastest growing 'megacities' (Tannerfeldt and Ljung, 2006: 176-177) it possesses the problems and privileges of a twenty first century urban agglomeration. Its colonial past and legacy of considering the environment in terms of exploitation, industrialization and urbanization make it a prime example of a 'critical point' place. This describes a period of exorbitant expansion when the 'practico-material morphology' and 'form of urban life' rapidly change (Lefebvre, 1996: 123).

The current predicament of São Paulo, as it has developed since the mid-twentieth century, is literally reflected in its motto 'São Paulo não pode parar!' 'São Paulo cannot stop'. In the 1950s a national agenda for fast economic growth and modernization was reflected in the slogan 'fifty years in five' under Juscelino Kubtischek's presidency (Caldeira, 2000: 40-41).

This paper focuses on São Paulo as a case study. It integrates three aspects of city life that are historically separated but now linked through spatial agendas, adaptation and mitigation of climate change effects. Challenges of homelessness, visual pollution, and water use are linked together as examples of urban planning neglect in ways that emphasize a need for 'holistic approaches' (Brown et al., 2010: 240) to transdisciplinary research into urban environments.

'The crucial challenges for development around environmental and technological issues relate to whether or not the complex, dynamic systems involved are moving along pathways to sustainability. In turn, it is critical that such pathways lead to improved livelihoods, well-being and social justice for poorer and marginalized people.' (Leach et al., 2007)

Aligning 'pathways to sustainability' is an aspiration for this paper. The ambition is to encourage the idea of 'the connected city' in practical ways by 'connecting the city's fabric' and 'connecting the people who shape the city' (Cowan, 1997: 3). Typically this refers to the professional world of work. Less so does it include the poor who work in the informal economy. Scale of thinking is important in this to ensure in cities the size and complexity of São Paulo there are sufficient energy and material resources for all citizens, including the excluded.

These challenges will be outlined and linked in ways that encourage political as well as material democracy (Harland and Loschiavo dos Santos, 2010). For example, in the case of São Paulo's water management system, population growth severely threatens access to clean water, and this is compounded by problems of water contamination linked to the extremes of rapid industrialization and poor social housing. This is timely because the

second half of the twentieth century has witnessed a 'growing concern with the negative impact of human activity on the physical environment' (Woodhouse, 2000: 141).

This paper consolidates three years of collaborative 'designerly enquiry and decomposition' (Breen, 2005: 95–102) towards sustainable urban design development that includes the urban poor. It benefits directly from collaboration since 2007 and discussions that took place during a field visit to São Paulo in September 2010.

THE CRITICAL POINT

What, and when, is the Critical Point? It has already been described as excessive growth spurts of the city and its inhabitants. It seems this happens at various points of urban evolution between agrarian life being engulfed into the full urban system that results in the city developing through political, commercial, and industrial expansion. Lefebvre suggests it is when 'the importance of agriculture retreats before the importance of craft and industrial production, of the market, exchange value and a rising capitalism' (op cit: 122). With industrialization comes urbanization, and the perception that migration from to urban to rural will result in a better income (Tannerfeldt and Ljung, 2006: 27). Lefebvre has argued that the contemporary city problematic, the 'urban reality', stems from the explosion—implosion, condensation—dispersion produced by the process of industrialization—urbanization (op cit: 123).

Critically, Lefebvre suggests that expansion of settlements lead to the commercial city and 'expanded communications'. This point is said to be located in sixteenth century Western Europe, soon before the industrial city. It is no coincidence that at the same time the 'age of colonialism' and European expansion into Africa, Asia and the New World is forced upon the world (Johnston et al., 2000: 93), and new settlements are formed in distant places from the precarious platform of rising capitalism in Europe. Portugal's discovery of Brazil in 1500, and subsequent colonization some thirty years later, is at the early part of this process (Bitterli, 1989: 57–60) as is the origin of São Paulo.

This is what has happened in São Paulo, especially over the last century, as a 'place of exchange' where '*exchanges*' happen, and are mediated in quantity rather than quality and 'culture dissolves, becoming an object of consumption' (Lefebvre, 1996: 124). This was said by Lefebvre to be a universal crisis of today as the city 'explodes' across political, administrative, historical, ideological and technical boundaries that intrude on the rural way of life. The result of this intrusion is that rural dwellers are forced in despair to look more to the city and the 'shanty town welcomes them and becomes the (inadequate) mediator between town and country, agricultural and industrial production' that is often 'miserable' and 'intense' (ibid: 125). Lefebvre suggests this happens on three levels: (i) global processes of industrialization and urbanization; (ii) urban society, the specific scale of the city; and (iii) ways of living and conditions of daily urban life in the urban (ibid: 126). These are depicted in Figure 1.
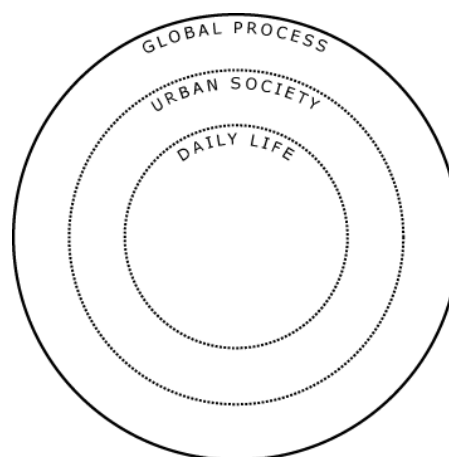

Figure 1. Three levels of urban intrusion.

What is present in this portrayal is the spatial dimension, perpetuated by what UCLA urban philosopher and theorist Edward Soja calls 'spatial (in)justice' (2010), something he considered at very least equal to the historical and social dimension of urban development in developing countries. This is known and traced through the expansion of sixteenth century European colonialism, communication and commercialization, to the consequences of the present day continued attraction of the city to those who are unable to participate as citizens through exclusion. Soja talks not only about those who reside within, but also how 'the urban condition has

extended its influence to all areas: rural, suburban, metropolitan, exurban, even wilderness, parkland, desert, tundra, and and forest' (ibid: 6). Acknowledging this is to raise the important question about how spatial justice can be incorporated into urban design to ensure that '[t]he equitable distribution of resources, services, and access is a basic human right' (ibid). To achieve this must consider how the urban condition impacts on those who must suffer its consequences and become disconnected. São Paulo is one place where this can be observed.

THE SÃO PAULO URBAN CONDITION

Describing the urban condition of São Paulo, one of the top-five 'megacities' (Tannerfeldt and Ljung, 2006: 176) in its fullest sense is unrealistic here and perhaps a impossible task. Nevertheless, a brief introduction to three aspects of the city will provide enough background to support the objective this paper.

Defined at the turn of the millennium by Teresa Caldeira (2000) as the industrial centre of Brazil, São Paulo presents some of the most challenging urban situations that will arise in any discussion about a critical point. For example, in spatial justice terms, it suffers from spatial segregation that contributes to 'a fear of violence, reproduction of prejudice, contestation of rights, social discrimination and creation of new urban forms to keep social groups apart' (ibid: 10–11). Addressing these issues alone requires critical urban intervention.

Yet, the city authority will look toward its future potential by promoting its qualities and status as a top twenty world city for resource assets; possession of the third largest stock exchange in the world; the presence of fifty-four out of the biggest one hundred global companies; its location as the best city for business in Latin America; and the second best University (University of São Paulo) on that continent with the leading business school. Add to this claims about 2000 private companies who undertake serious research and development; the largest hospital complex in Latin America; proximity to sea, air, road and rail communication; diversity of seventy different cultures living in harmony; and centre of

culture and entertainment (for example, 120 theatres, 280 cinemas, 88 museums) said to produce one cultural event every six minutes.

This contrasting story requires that critical urban intervention is undertaken on many levels. Three examples that demonstrate the need for intervention are discussed next, relating to homelessness, visual pollution, and water use. In sequence, these are examined in more detail, and serve as examples that will benefit from the problem solving dimensions and contexts of urban design outlined by Carmona, Tiesdell, Heath and Oc (2010). See figure 2.
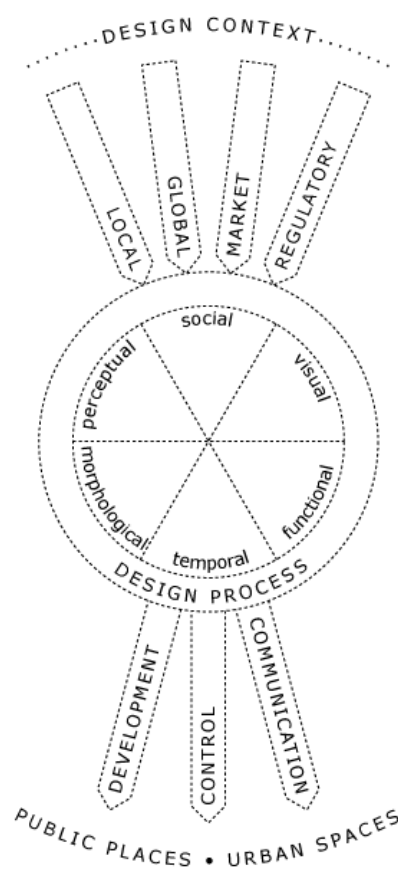

Figure 2. Urban design dimensions and contexts. Source: Carmona, Tiesdell, Heath and Oc, 2010, (redrawn here)

Homelessness and the survivalist economy of recyclable material collectors
Marginal spaces created by the homeless provide a point of view that is essential to thinking about the political history of urban space in our time. It is a synthesis of the contradictions of a culture of waste and destruction. These habitats explicitly show the conditions of absolute misery and question the

chronic neglect of housing, poverty and exclusion issues.

According to bell hooks (1990) "to be in the margin is to be part of the whole but outside the main body". For her:

marginality is more than a site of deprivation; in fact I was saying just the opposite, that it is also the site of radical possibility, a space of resistance. It was this marginality that I was naming as a central location for the production of a counter-hegemonic discourse that is not found in words but in habits of being and the way one lives. (ibid)

She makes a strong distinction between the marginality imposed by the oppressive structure and marginality as a place of resistance.

Understanding marginality as a position and place of resistance is crucial for the oppressed, exploited, colonized people. If we only view the margin as a sign, marking the despair, a deep nihilism penetrates in a destructive way the very ground of our being. (…) I want to say that these margins have been both sites of repression and sites of resistance. (ibid)

It is this sense of practicing resistance that should be highlighted regarding the material culture of the homeless. These are the urban bricolages. According to Lévi-Strauss (1966), bricoleur is 'someone who works with his hands and uses clever means, compared to other means used by artisans'. He goes on to say:

the bricoleur is good at performing a large number of tasks, but differently from the engineer he does not subordinate each of them to the availability of raw materials and instruments created and sought for the purpose of the project. His universe of instruments is nearby, and the rules of his game are always to do with anything he has to hand.

Remarking on the homeless people's strategies of survival material, David Snow (1996) uses this concept. He analyzes the improvisations performed by the homeless in terms of bricolages, and defines the concept of bricoleur as follows: 'used metaphorically, bricoleurs may designate any individual that invents non-conventional but pragmatic solutions to urgent problems'.

The nomadic practices by the homeless characterize the types of occupation and, mainly, the construction of the informal habitat. There, an aspect characteristic of the nomad culture emerges: the presence of tent-like structures, often forming urban camps.

What is the meaning of these tents, these informal habitats made of plastic and cardboard, present in large cities? What is the meaning of this public exposure of poverty on a global dimension? Tents are spaces for contestation that express the absolute historical polarization between opulence and indigence. The homeless refuse to play the role of victims and increasingly show their capacity to resist publicly. These landscapes of urban poverty express the civil disobedience of the inhabitants who occupy the remaining spaces; it is a way for the homeless to defend themselves. In this sense, resistance is in direct opposition to the oppressive condition of being on the streets.

The world is facing an unprecedented environmental and economic crisis that has increased the incidence of homelessness everywhere, perhaps now more than at any time in human history. This is an acute issue. An unknown number of people without homes navigate the cities, along the sidewalks, in search of shelter. São Paulo also has a significant number of deprived people living on the streets and the homeless are spreading across the city, including children in their demographic composition. Public policies for dealing with homelessness have not provided proper answers and the loss of employment leads some of the homeless people and the dispossessed population to create a survivalist economy based on a daily routine of displacement and excavation of the city.

This is called *catação* (collection), done by the *catadores* (collectors). It is an informal economy that reuses the trash of São Paulo and other Brazilian cities. Every day they re-create their strategies of survival and self-shelter alternatives in order to protect themselves and stay alive. The relentless search for material survival strategies gives the homeless and the collectors the possibility of exhuming dead products, the waste of our

throwaway societies. The homeless communities living on streets reuse found materials and packaging to create makeshift habitats — new ready-mades created from abandoned objects.

The anonymous hands of the homeless utilize discarded materials in unexpected ways. They wrap these materials around their lives as a basic resource for protection, adaptation to terrible circumstances and resistance and survival strategy. The plight of the homeless is regarded with an attitude of exclusion as they live inside boxes, they wrap themselves in cardboard, plastics or blankets, and it's this wrapping process that construct their habitat and way of living within the city of paper or plastic. Handling discarded materials and products has also turned into the main activity of recyclable collectors in Brazil. Collection activity on Brazilian city streets has been around for several decades, but it was only at the beginning of the 1980s that the first initiatives arose to organize collectors through cooperatives.

In the city of São Paulo, at the beginning of the 1980s, a group of church-workers articulated the homeless who sought their subsistence in the wastes that were discarded by homes, industries and trade in the downtown area. They began to hold meetings at the Community Center of the Street Sufferers, in the Glicério neighborhood, which became the meeting point for these collectors. The idea of collecting began mainly for the purpose of gathering some money to fund a religious feast in honor of Easter.

Since that special occasion, collectors have organized themselves into cooperatives. The very first one was created in 1989: COOPAMARE - Cooperativa de Catadores Autônomos de Papel, Papelão, Aparas e Materiais Reaproveitáveis (COOPAMARE- Cooperative of Autonomous Paper, Cardboard, Scraps and Reusable Materials Collectors). It was founded, initially with twenty collectors, but the organization of the work of these collectors gradually began to provide income and, throughout the 1990s motivated the articulation and expansion of cooperative work in several cities across the country. COOPAMARE became a reference for other cooperatives.

Currently, COOPAMARE is located in São Paulo, under a viaduct, in the western part of the city. Permission to use the land was a city government concession, but working conditions were precarious. Gradually the collectors have improved the situation and now they have electricity, running water, and restrooms. Collectors are engaged in the development of an environment-friendly economy as they clean the city. The materials they find are sorted and reintegrated into the productive cycle.
Former homeless and collectors used their creativity to overcome their difficult circumstances. They have taken their destiny into their hands and built up a relevant position in Brazilian society, by thinking of alternatives.

Recyclable collectors engage in the development of an environmental protection economy as they clean the city of São Paulo and other cities in Brazil, thus generating some income to overcome their poverty status. Their self-created economy combines public service and environmental care for the city, but their struggle for participating in a public policy for waste management is still on and we still need to enhance the advancement of the collectors' activities, and their redistributive and environmental justice.

The collectors were able to organize themselves into social movements and claim their rights to the city and inscribe their place in history. They showed that products and materials have many lives; and that one person's trash may be the other person's main capital. Today collectors are organized across the country in over 500 cooperatives with a total number around 60,000 members (Medina, 2010).

In August 2010, national government approved a new law — National Policy for Solid Waste — that for the very first time incorporated the role of collectors and also stimulates business to work with them. Although the new possibilities opened with the law are still being processed, it is sure that in Brazil, the participation of collectors has considerable importance, in waste management, environmental urban services as well as poverty reduction. Soja argues that:

focusing in on specific examples of where and how (in)justice takes place helps to ground the search for spatial justice in socially produced contexts rather than letting it float in idealized abstractions and too easily deflected calls for universal human rights or radical revolution (2010: 31).

Collectors experience shows up precisely a possibility of another urban praxis and stresses the relevant participation of Brazilian urban social movements in the struggle for the production of urban space in downtown areas of São Paulo city. It is also worth stressing the organization of another social movement: National Movement of Homeless Population [Movimento Nacional da População de Rua] also claiming their rights to housing policies.

São Paulo Clean City
In contrast to the plight of the collectors who rely on ephemeral excess for their livelihood, recent changes in the law in São Paulo lead to the cause of excess possibly reducing. In June 2007 the UK magazine Creative Review featured an article with the title 'The Naked City' with the sub-text 'São Paulo: the city that said no to advertising' (Burgoyne, 2007). The article featured startling photographs, eighteen in all, of the city's advertising billboards, without the advertising. This was due to the passing of a law in the city, something that had

not been a struggle for the mayor Gilberto Kassab as the vote was almost unanimous at 52 out of 53 by the city's political leaders.

Since referred to as the 'clean city' law, the Creative Review article began: 'A city stripped of advertising. No posters. No flyers. No ads on trains. No Adshel, no 48-sheets, no nothing. Against claims reported by Burgoyne by the Brazilian Association of Advertisers that this radical action would result in the loss in advertising revenue of US$133 million, and other organisations claiming 20,000 job losses, the effect has been dramatic on the cityscape for those that the previous situation engulfed. See Figure 3.

A discussion with the architect responsible for implementing the scheme, Luís Eduardo Brettas, in 2010, characterised a chaotic situation of 'landscape disorder' that is not fully reported and appreciated in the Creative Review article. Using examples far more intrusive than the artistic photographic images captured by the photographer Tony de Marco (available for view on Flickr.com), and as featured in the magazine article, Brettas portrayed how the integration of architecture and publicity had become out of control.

scenarios. For example, according to Brettas, in many cases daylight that usually pierced the windows of a building had been completely obliterated, because of the indiscriminating placement of advertising hoardings. In one instance this had been a child's school! In another, the landowner earned more from advertising revenue generated by the advertising than building occupancy income.

The concept behind the eventual law sought to radically improve the situation. One way to do this, rather than do away altogether with visual communications, was to limit the size of shop fascias and their corresponding logotypes, For example, initial proposals suggest a shop façade 10 metres long should be adorned with a sign no bigger than 1.5m^2. Between 10 and 100 metres this should be a maximum 4m^2, and greater than 100 metres should be maximum 10m^2, two of which can be erected.

When the law came into being in January 2007, non-compliance to act within 90 days carried a fine of up to US$4,500 per day. The establishment of a transition period required the dismantling of substantial physical hardware that supported displays, in some cases substantial cranes being required. Existing painted signs that had been painted directly onto buildings were also painted out. The visual outcome of this action revealed the architecture of the city again, as ornamental fascias were restored and repainted, having previously been covered over.

Figure 3. 'Clean city' consequences. Source: Robert Harland, 2010

The situation that led up to the law portrayed the extreme to which the ideas of modern architects and writers who embraced and promoted the integration of the architecture and publicity to levels that captured what Gordon Cullen described as the 'vulgarity' and 'vitality' of advertising in the city (1971: 151). Theo Crosby (1973: 84) is one who showed how an advertising hoarding could completely cover the side of a fifteen to twenty storey building, and adorn the side of a bus as it moves through the city (1973: 84).

The social consequences of the situation, as it had manifested in São Paulo, had led to unacceptable

Not only did it transform the cityscape, but also the user experience of indoor media posters on subways, including advertising on the arm of 'turnstiles' that allow access to places, were removed. Ironically, the before and after images that depict the various place improvements echo the kind of tricks used by advertisers who campaigned for their presence (Clause and Claus, 1971: 63).

The success of the project has required the efforts of the Commission for Protection of Urban Landscape (CPPU), and cooperation agreements with the Urban Landscape Protection Commission leading to public–

private sector agreements for investment in improving public places.

Some further measures have been adopted, such as the commissioning of 'innovative' graffiti art in innovative cultural projects in various parts of the city. The scheme has also garnered a host of international awards and been shown on high profile exhibition stands such as the Shanghai 2010 EXPO. These plaudits are as much the achievement of the people of São Paulo as the politicians elected to listen to them, as suggested by the council president Roberto Tripoli (Burgoyne, 2007: 50).

Water Use

The continuous rapid growth of São Paulo since the beginning of the twentieth century has resulted in serious concerns about the management of the city's drainage system, especially in relation to urban sprawl that has occurred in the absence of planning control. What is more, this sprawl has reached environmentally protected areas that contain forest and natural water springs.

Sprawl has resulted in these areas now being occupied by low-income families, many of whom are at severe risk during the rainy seasons because of flooding and landslides that can seriously obliterate informal housing. In 2010, an estimated 380,000 homes are vulnerable to these natural phenomena.

Furthermore, the established city road network in the river valleys of the two most important rivers in the city, Tietê and Pinheiros, is at the mercy of high peak, and more recently, high volume rainfall that has occurred year-on-year since 2009. The São Paulo urban drainage system is ill equipped to deal with such problems having not developed in parallel with rapid city growth. Added to this are poor waste water treatment, polluted rivers, and the paralysis of the city at times of flooding. As well as the flooding of major traffic corridors at times of persistent rain, 'flash flooding' can occur with 30-40 minutes of rainfall and has caused serious material damage and even loss of life.

The city's infrastructure has been unable to cope. For example, urban drainage systems in the Upper Tietê River basin are now deficient, in part due to poor planning and management. This is due to a general lack of understanding between the planning needs at a municipal and metropolitan level. This is also exacerbated by the fact that the São Paulo metropolitan region (SPMR) is the fourth biggest human agglomeration in the world, made up of 38 municipalities, and the municipality that is the City of São Paulo has 31 districts. Yet, there has not been a central authority that considers planning at a metropolitan level. Furthermore, it was not until 2007 that a federal law was established to provide the legal mechanism to provide proper urban sanitary systems for water supply, waste-water, solid waste and drainage. Brazilian cities now have to provide urban drainage planning and management systems management for sanitary services.

The significance of this is emphasised by taking a recent historical look at spatial injustices relating to water supply, access to sanitation and garbage collection. The rapid growth in the twentieth century resulted in the distribution of infrastructure and public services being uneven in terms of access to water, sewage services, garbage collection, paved streets and street lighting. For example, in the late 1960s although 52% of all domicile in the city lacked water, 41% did not have access to sewage services and 16% lacked garbage collection. Whereas in the Central district of the city, just 1% of domiciles lacked water, 5% did not have access to sewage treatment and less than 1% did not have garbage collection. By contrast, new districts such as Itaquera, access was radically different with 89%, 97% and 72% respectively. (Caldeira, 2000: 228)

In addition to this, since the late 1960s, the expansion of the city has also been accompanied by a growth in favelas. In 1973 just 1% the city population lived in favelas whereas twenty years later this had increased to over 19%, the majority located on the periphery, accounting for 1.9 million people (ibid: 240). Figure 4 shows a startling depiction of the expanding rapid population growth and urban sprawl in the seventy-year period leading up to the millennium, much of which has been unplanned.

CONNECTING THE CITY

If urban design is to provide a platform for connecting the city fabric to the people who shape the city, ideas about who shapes the city must be challenged to be more inclusive. Robert Cowan answers the question about who urban designers are from a professional perspective, believing that those who shape the city consist of:

Politicians in central government and on local councils; civil servants; business people; accountants; engineers, property and estate agents; investors; organisers of art events and festivals; creators of public art and those who commission it; fire and crime prevention officers; managers of leisure facilities; tour operators; health service planners; education policy makers; transport operators; promoters of economic development; and members and managers of a wide variety of quangos, statutory organisations, agencies and community groups. … Also, of course, in a relatively modest way, planners, urban designers and architect. … All these people … are … the real urban designers. (Cowan, 1997: 16)

All cities is are also shaped by non-professionals: citizens and non-citizens. Carmona et al (2010) suggest there is a continuum between 'knowing' and 'unknowing' urban design. The former is 'self-conscious' and 'what people who see themselves as urban designers create and do'. The latter is 'unself-conscious' and results from 'decisions and actions of those who do not see themselves as urban designers'(ibid: 16). In either sense, not all are able

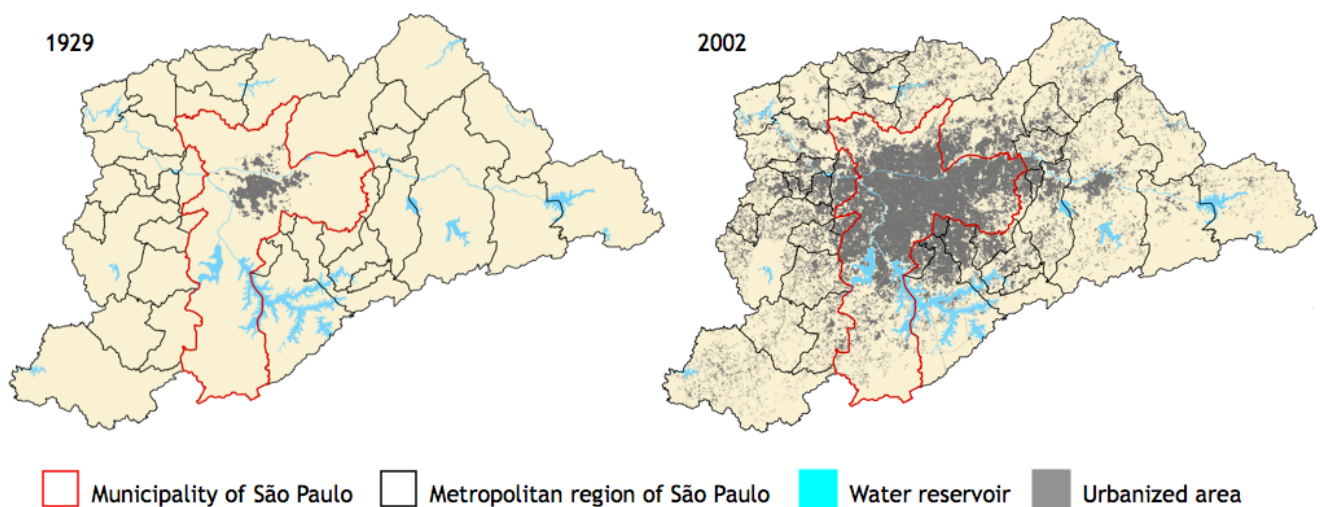| Municipality of São Paulo | Metropolitan region of São Paulo | Water reservoir | Urbanized area |

Figure 4. Urban population growth in the upper Tiete River Basin. Source: (Amaro et al., 2011).

to impact on the city fabric at the meaningful scale. But some do, and the examples discussed here of homelessness, visual pollution and water use, are arguably actions of 'unknowing' urban design process that become more conscious and 'knowing' of urban design. It is unknowing in that the situations that created this scenario are undesirable and can be said to reside in the 'cracks', a metaphor for private development that ignores its surroundings, amongst other things. The cracks in urban design are:

• The gaps in the urban form, where overall continuity is disrupted.
• The residual spaces left undeveloped, underused or deteriorating.
• The physical divides that purposefully or accidentally separate social worlds.
• The spaces that development has passed by or where new development has fragmentation and interruption. (Carmona et al., 2010: 17, citing Loukaitou-Sideris 1996)

Lack of continuity, residual spaces, social divisions, fragmentation and interruption provide some of the issues that link spatial injustice with urban design. Gaps might be filled through Jon Lang's suggested approaches to urban design:

1. Total urban design — complete control by a single design team over the design of a large area — buildings, public space and implementation.

2. All-of-a-piece urban design — where schemes are parceled out to different development/design teams following an overall masterplan that acts to coordinate the pieces.

3. Piece-by-piece urban design — the process of single uncoordinated developments coming forward as and when opportunities or the market allow, although guided by area objectives and policies.

4. Plug-in urban design — where infrastructure is designed and built in new or existing areas, into which individual development projects can be plugged in later.
(Carmona et al., 2010: 17, citing Lang 2005)

These are just a couple of examples of how urban design recognizes the urban condition and offers urban design processes for intervention.

CONCLUSION

The examples discussed in this paper offer three different approaches to urban regeneration. For the homeless, this is at a human scale about survival. The clean city programme seeks to remove the visual clutter that has become out of control, disorderly and detrimental to human existence. Prior to this, the situation provided economic benefit to few, but limited social value in the provision of money for reinvestment in the socio-material fabric. The problems associated with water use result from a lack of planning infrastructure at a metropolitan level.

These are linked in the domain of urban design, and the problems that have emerged with rapid growth. The megacity has suddenly appeared. With this has come new urban problems that could not have been envisaged fifty years ago. Yet some appear to suggest that fundamental problems have been in the making for five hundred years. São Paulo exemplifies this and this paper has reported on ways to embrace sustainable urban design development. The problems of homelessness, visual pollution and water use have been introduced briefly. These can be understood as the result of unknowing urban design and the outcomes often reside in the 'cracks' of the urban fabric. Urban design offers ways to frame urban problems and actions characteristic of the megacity condition.

In their work on urban development and management, Göran Tannerfeldt and Per Ljung identify urban problems directly with 'city planning, infrastructural issues, housing', and more, within the wider scope of 'governmental controls, financial issues and social goals', recognising that there are many gaps (as well as cracks) that result from these fragmented relationships (Thomas Melin in Tannerfeldt and Ljung, 2006: 5). This paper has attempted to add a spatial dimension in that the three case studies — homelessness, visual pollution, and water use — have arisen as much because of spacial concerns. In the case of homelessness, space is contested and negotiated in a socio-spatial survival context. The clean city campaign is a spatio-economic act aimed as much at improving the city's fabric as it is a controlling mechanism. The challenge

of water use is a spatio-environmental concern linked to the vivid depiction of a São Paulo urbanized area encroaching so much on the rural that the city's water supply is literally being swallowed up by urban sprawl. No longer does the shantytown welcome the rural dweller, but the opposite.

The paper extends an existing emerging discourse about urban design as a key discipline for tackling conditions that have been associated with Lefebvre's concerns about the critical point. In this sense, it proposes an optimistic view for the future design of large cities that seek to deliver spatial justice from the grip of spatial injustice. Future questions framed around the critical point must seek answers to what the design of spatial justice looks like and how it is experienced by all.

REFERENCES

AMARO, C., ANDRÉ, J. C., BRITES, A. P., BARROS, M. T. L., BUCALÉM, M., LUCCI, R. M., MORIHAMA, A. C., MUKAI, P., MORIHAMA, A. C., PEREIRA, M. C. S., SOSNOSKI, A., TOMINAGA, E. N. S. & YAZAKI, L. F. O. L. 2011. São Paulo city urban drainage master plan. *Work in progress*.

BITTERLI, U. 1989. *Cultures in conflict: encounters between European and non-European cultures, 1492-1800,* Cambridge, Polity Press.

BREEN, J. 2005. Designerly enquiry. *In:* DE JONG, T. M. & VAN DER VOORT, D. J. M. (eds.) *Ways to study and research urban, architectural and technical design.* Delft: DUP Science.

BROWN, V. A., HARRIS, J. A. & RUSSELL, J. Y. (eds.) 2010. *Tackling wicked problems through the transdisciplinary imagination,* London: Earthscan Ltd.

BURGOYNE, P. 2007. The Naked City. *Creative Review,* 6/27, 48–50.

CALDEIRA, T. P. R. 2000. *City of walls: crime, segregation, and citizenship in São Paulo* California, University of California Press.

CARMONA, M., HEATH, T., OC, T. & TIESDELL, S. 2010. *Public places – urban spaces: the dimensions of urban design,* Oxford, Architectural Press.

CLAUSE, R. J. & CLAUS, K. E. 1971. *Visual environment: sight, sign and by-law,* Ontario, Collier Macmillan Canada, Ltd.

COWAN, R. 1997. The connected city: a new approach to making cities work. *Urban Initiatives.* London.

CROSBY, T. 1973. *The environment game*, Penguin Books.

CULLEN, G. 1971. *The Concise Townscape,* London, The Architectural Press.

FRY, T. 2009. Sustainability: Inefficiency or Insufficiency? *Design philosophy papers* [Online]. Available: www.desphilosophy.com.

HARLAND, R. G. & LOSCHIAVO DOS SANTOS, M. C. Year. Design education as a practice of affiliation: facilitating dialogue between developed and developing nations. *In:* Design & Complexity: Design Research Society Conference, Montreal, 7-9 July, 2010 Université de Montréal, Canada. 1-11.

HOOKS, B. 1990. *Yearning. Race, gender and cultural politics,* Boston, South End Press.

JOHNSTON, R. J., GREGORY, D., PRATT, G. & WATTS, M. (eds.) 2000. *The dictionary of human geography,* Oxford: Blackwell Publishing

LEACH, M., BLOOM, G., ELY, A., NIGHTINGALE, P., SCOONES, I., SHAH, E. & SMITH, A. 2007. Understanding Governance: pathways to sustainability. STEPS Working Paper 2, Brighton: STEPS Centre.

LEFEBVRE, H. 1996. *Writings on Cities / Henri Lefebvre; selected, translated, and introduced by Eleonore Kofman and Elizabeth Lebas,* Oxford, Blackwell Publishing.

LÉVI-STRAUSS, C. 1966. *The savage mind,* London Weidenfeld and Nicolson.

MEDINA, M. 2010. *World's Largest And Most Dynamic Scavenger Movement*, BioCycle.

SANTOS, M. C. L. Cities of plastic and cardboard: The homeless informal habitat in Sao Paulo, Los Angeles and Tokyo.The Asia-Pacific Network for Housing Research International conference, 2005.Kobe:APNHR - Japan sub-committee, 2005, v.1, p.224-232.

SANTOS, M. C. L. 1999. Castoff/Outcast. Living on the street. In. T. Correl and P. Polk (eds). The cast-off recast. Recycling and the creative transformation of mass produced objects. Los Angeles. UCLA Fowler Museum of Cultural History.

SHANE, D. G. 2011. *Urban Design since 1945 – a global perspective,* Chichester, John Wiley & Sons Ltd.

SNOW, D. A., ANDERSON, L., QUIST, T. & CRESS, D. 1996. Material Survival Strategies on the Street: Homeless People as Bricoleurs. *In:* BAUMOHL, J. (ed.) *Homelessness in America.* Phoenix: Oryx Press.

SOJA, E. W. 2010. *Seeking spatial justice,* Minneapolis and London, University of Minnesota Press.

TANNERFELDT, G. & LJUNG, P. 2006. *More Urban Less Poor : and introduction to urban development and management,* London, Earthscan.

UN-HABITAT 2008. *State of world cities 2008/2009: Harmonious Cities,* London, Earthscan.

WOODHOUSE, P. 2000. Environmental degredation and sustainability. *In:* ALLEN, T. & THOMAS, A. (eds.) *Poverty and Development into the 21st Century.* Milton Keynes and Oxford: The Open University and Oxford University Press.