Critical Awareness in the Era of Globalisation: Lessons for Landscape Architecture from an Informal Community in Tijuana, Mexico

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The profession of landscape architecture has undoubtedly benefited from global economic investment, which has spurred development projects involving landscape architects in developing countries around catalysts such as industrial growth and tourism. However, these globalisation trends have also been blamed for various environmental and social ills, and pose substantial risk and uncertainty for the profession. This paper examines the consequences of globalisation, including the impact on informal communities that may not directly benefit from such activities. These consequences are illustrated through literature review as well as description of a community we have been engaged with in Tijuana, Mexico; a case that is typical of many global trends. We also examine the role of landscape architecture practice and education in this globalisation process, arguing that greater consideration is warranted of the professional's role in maintaining or transforming existing social structures that are conducive to inequities and injustices. We argue that critical awareness of a given situation is essential for landscape architects to facilitate social transformation, and we outline a strategy used in Tijuana to gain critical awareness and to effectively dialogue with informal communities.

INTRODUCTION

THE CONSEQUENCES OF economic globalisation have been widely debated in academic and political circles. Proponents such as the World Trade Organisation have argued that globalisation results in diffusion of economic activity and development of employment and investment opportunities in countries previously excluded from such activities. However, others have argued that such opportunities have been unequally distributed, resulting in wide discrepancies between those individuals and communities who benefit from such policies, and those who do not.

The profession of landscape architecture has undoubtedly benefited from global economic investment, which has spurred development projects involving landscape architects in developing countries around catalysts such as industrial growth and tourism. However, at the same time, this globalisation has been blamed for environmental degradation, exploitation of resources, and destruction of local culture, all of which are supposedly antithetical to the values and vision of the landscape architecture profession.

This paper examines some local consequences of globalisation, in particular the impact it has upon marginalised and informal communities that may not directly benefit from mainstream economic activities. These consequences are illustrated

through a description of a community in Tijuana, Mexico; a case that is typical of many global trends. We also examine the role of landscape architecture practice and education in this globalisation process, and consider the range of views expressed by the discourse in landscape architecture on the obligations and values that govern professional practice. Finally, we argue that landscape architects can play a critical role in informal communities within global cities, and we outline an approach we used in Tijuana to gain 'critical awareness' of such issues and methods for engaging communities in a dialogue about the challenges and opportunities presented in their environment.

Globalisation and its Impacts

Definitions of globalisation vary within the literature, depending upon disciplinary perspective and needs of the user. Kwong (2005), for example, simply describes it as the process of removing barriers to freely facilitate the movement of goods, services, people and ideas across nation states. This definition is consistent with what Van Der Bly (2005) describes as the one-dimensional definition, focused on globalisation as a process, which is utilised heavily within the field of economics. Others, such as Tomlinson (1999), offer multidimensional definitions that seek to reveal the complex connectivity of globalising forces and to understand globalisation as a condition or state of reality, as opposed to merely a means. Such conditions include economic, political, social, interpersonal, technological, environmental and cultural dimensions. As Van Der Bly notes, the definitional perspective is important in understanding whether globalisation is viewed as a process that has happened previously in human history, or an unprecedented condition never experienced before; whether it is a simple economic concept that downplays connections to tangential conditions, or a rich but convoluted assemblage of conditions that lacks a clear common identifier or cause.

As landscape architects, we argue that a multidimensional perspective focused on the conditions of globalisation is useful, as it captures the complex inter-relationship between landscape actors and elements in a more holistic way, and emphasises the empirical patterns of investment, degradation, exploitation and empowerment that concern much landscape architectural work. However, we recognise that such a perspective is vulnerable to criticism both by those who believe these patterns are not unprecedented, and by those who challenge many of the interdependencies of modern life.

Those who subscribe to the multidimensional definition of globalisation typically argue that the world community has entered a unique phase in its development, shaped by technological advances and the opening of markets. Modern information and communication technology increases connectivity of individuals across nation states, effectively collapsing traditional geographies (Mabogunje, 2002). The removal of trade barriers and opening of markets facilitates the expansion of the capitalist mode of production and the rise of transnational corporations that effectively use international resources, labour, and financing to expand their market potential. Some have argued that the strength

of these emerging transnational corporations has eclipsed many nation states, and is resulting in a decline of the influence of the nation state as such (Dujon, 2002; Harvey, 2005).

These technological and economic conditions have considerable impacts on urban environments and ecological systems, within both the developed and the developing world. The United Nations Human Settlements Programme describes 2007 as the year when the world's urban population will equal the world's rural population for the first time (UN-HABITAT, 2006). Many scholars link the processes of globalisation with the massive migration to urban environments around the world (Dear and Flusty, 1998; Harvey, 2005; Davis, 2006). This demographic shift has led to the emergence of 'metacities', which are massive metropolitan systems of more than 20 million people, typically under decentralised forms of government (UN-HABITAT, 2006). While metacities represent an important trend, most of the urban population continues to live in small and intermediate cities, which are also growing rapidly. These cities are important centres of trade and destinations for rural migrants, providing an initial step out of poverty and a gateway to opportunities in larger cities.

Economic opportunity is clearly driving the processes of migration to small and intermediate cities as well as metacities. The nature of these opportunities reflects a fundamental shift in political economy, from Fordist to post-Fordist industrial organisation, which ultimately impacts not only on the availability and nature of economic opportunity, but also the overall urban condition.

Fordist regimes of industrialisation emphasised mass production in a centralised way, which contributed to the rise of many paradigmatic capitalist cities such as Detroit, Chicago and Pittsburgh (Dear and Flusty, 1998). In contrast, the post-Fordist era emphasises flexible production regimes, with smaller-scale production and subcontracted components, which may be manufactured and assembled in discrete locations around the world. This shift in the industrial paradigm, in concert with associated changes in economic and political regulation, has created widespread opportunities for industrialisation in cities of all sizes, equated by proponents with the opening of markets associated with globalisation. However, as Harvey (2005) notes, this opening of markets is embodied in the more foundational doctrine of neo-liberalism, which proposes human well-being can be best advanced by liberating individual freedoms and skills within a political framework of strong property rights, free market and free trade. Under such a doctrine, the role of the state is merely to provide security and ensure the proper functioning of markets.

The retreat of states from past forms of intervention has effectively lessened their role in influencing economic, social and environmental conditions, and increased the power of transnational corporations and international economic institutions that establish aid policies (Burbach and Robinson, 1999). Structural Adjustment Programs (SAPs) mandated by the International Monetary Fund and the World Bank illustrate this shift in power. The SAPs emphasised government

deregulation through large-scale privatisation of utility companies, government-owned health systems, a downsizing of all public services including food subsidies and recalibrating of local currencies. These policies served to effectively eliminate the middle and working classes in the countries where they were implemented (Davis, 2006). The SAPs, along with protracted drought, rising oil prices, high interest rates and low commodity prices, resulted in conditions in many countries that were more severe and long-lasting than the effect of the Depression of the 1930s in the United States. For those in the low-wage sectors these changes meant increased housing costs, limited or no healthcare and even lower incomes. States seeking aid had little choice in adopting these policies. As Dear and Flusty (1998) note, the neo-liberal ethos has 'coincided with a period of economic recession and retrenchment which has led many to the brink of poverty just at the time when the social welfare "safety net" is being withdrawn' (p 58).

While post-Fordist production creates employment opportunities for many around the world, the tremendous influx of migrants to small and intermediate cities, and metacities, has resulted in formal economic sectors that are often unable to supply adequate jobs for these rapidly expanding populations. In developing countries, the informal sector, including work such as day labour, personal services and other private entrepreneurial endeavours, often provides more employment opportunities than the formal sector (UN-HABITAT, 2006). While the informal sector is commonly associated with unskilled migrant workers and women, skilled and educated people often work informally when they are unable to be absorbed by the formal market. Options are limited for those in the informal sector. As Harvey (2005) notes:

> For those left or cast outside the market system – a vast reservoir of apparently disposable people bereft of social protections and supportive social structures – there is little to be expected from neoliberalization except poverty, hunger, disease, and despair. Their only hope is somehow to scramble aboard the market system either as petty commodity producers, as informal vendors (of things or labour power), as petty predators to beg, steal, or violently secure some crumbs from the rich man's table, or as participants in the vast illegal trade of trafficking in drugs, guns, women, or anything else illegal for which there is a demand (p 185).

This substantial low-wage informal sector has contributed to the emergence of slums and other forms of informal settlements as a significant segment of housing in the cities of the developing world. One out of every three city dwellers lives in a slum, characterised by substandard and unhealthy living conditions (UN-HABITAT, 2006). Often, these slums constitute the informal or squatter housing sector within the city, where low-income workers create settlements of opportunity, using readily available waste materials for constructing homes on property for which they have no authority to reside. Lim (1995) offers a useful framework for understanding housing sub-markets based on the legal status with regard to land

	Legal Occupancy	Illegal Occupancy
Legal Physical Characteristics	A Regular Housing Market	C Invasion Housing Market
Illegal Physical Characteristics (substandard)	B Slum Housing Market	D Squatter Housing Market

Table 1. Structure of submarkets for housing in the developing world, adapted from Lim (1995). Housing in cells B, C, and D can be considered informal.

tenure and physical characteristics (Table 1). Housing that is illegal with regard to its land tenure, physical characteristics, or both, can be considered informal, and presents particular challenges to residents who simultaneously live in dangerous conditions and lack a voice in political processes due to their illegitimacy. Violence, drugs, isolation, lack of emergency and health services, limited schools, non-existent or faulty infrastructure, health complications associated with poor air quality, and few or no spaces to play and exercise, are common environmental conditions of these settlements. These conditions are exacerbated by residents' inability to obtain adequate support from local government due to their lack of representation and fear of being evicted. As UN-HABITAT notes, in many cities these settlements are 'no longer just marginalized neighbourhoods housing a relatively small proportion of the urban population; in many cities, they are a dominant type of human settlement, carving their way into the fabric of modern-day cities' (p 12).

The prevalence of slums and other informal settlements within a city can also be an indicator of urban inequality (UN-HABITAT, 2006). Cities in the era of globalisation have become highly fractured, where extreme wealth and extreme poverty reside in proximity yet lead separate lives with very different economic activities. This divide has received tremendous attention in the literature (Dear and Flusty, 1998; Dujon, 2002; Hubbard, 2003; Mabogunje, 2002; Harvey, 2005). Dear and Flusty (1998) note that in multicultural cities such as Los Angeles, this polarisation is not just economic, but often cultural, as ethnic enclaves emerge that often reinforce patterns of economic class. The result is a highly diverse 'heteropolis' (p 55) of many cultures across a metropolitan region, but an acute fragmentation of the urban landscape along race and class lines: pockets of homogeneity within a sea of heterogeneity.

The growth of small and intermediate cities, and metacities, also presents a number of concerns with regard to the impact on the natural environment, particularly due to the prevalence of informal slum settlements. Consumption

levels in the developed world are well documented and it is clear that current levels of energy consumption and ecological degradation of the most affluent countries currently represent the most significant threat to the earth's environment, particularly with regard to climate change (York, 2004; IPCC, 2007). However, the relationship between poverty and environmental degradation has also received attention within the literature, and is of particular concern in rapidly growing cities in the developing world. Mabogunje (2002) provides a summary of environmental concerns associated with poverty: deforestation associated with increased agriculture and fuel needs; desertification due to overcultivation, grazing and firewood collection; biodiversity loss due to land-cover change; erosion from overcultivation and urban expansion; air, water and soil pollution associated with industrial activity, poor sanitation, denuded landscapes and domestic fuel usage; and climate change due to increased fossil fuel consumption in rapidly growing urban centres.

Most of these environmental challenges are local and have the greatest adverse impact on local communities, many of which may be located in landscapes that are more vulnerable to degradation as well as other natural hazards, such as flooding, fire and landslides. So in addition to the risks associated with criminal activity and questionable land tenure in informal settlements, residents must also contend with a disproportionate fear of natural hazards.

Globalisation and Landscape Architectural Practice

Globalisation can therefore be viewed as either a process of opening markets, or a condition with far-reaching economic, environmental and social impacts, never before experienced to the same degree as in the contemporary world. If it is accepted that globalisation is indeed a unique occurrence in world history, the impacts on landscape architecture practice must indeed be profound. How can a profession that emerged in response to urban environments of the Fordist era effectively respond to the post-Fordist society and all of the technological, ecological and sociological challenges?

On the surface, there appears to be clear benefits from globalisation for landscape architectural practice. The opening of markets has spurred tremendous growth around the globe, increasing demand for traditional landscape architectural services within the formal sectors of society, often in remote landscapes from which the practitioner is far removed. At the same time, however, many of the consequences of globalisation present concerns for stewardship of the environment, broad access to landscape architectural services and the nature of professional work.

Historically, landscape architecture has had a strong connection to notions of stewardship and care for the natural environment (Scarfo, 1989). This stewardship ethic is prominent in landscape architecture education as well as the professional literature. In the United States, the American Society of Landscape Architecture's Code of Environmental Ethics (2006) articulates these concerns as being of central importance to its members. Similarly, such concerns have been the foundation of

many of the discipline's most well-known treatises (see, for example, McHarg, 1969; Spirn, 1984; Lyle, 1994). Such concerns, however, are often difficult to reconcile with the realities of planning and design projects in the era of globalisation, which frequently result in intensifying use of the landscape and resources by people, particularly in the context of globalisation and the interconnected impacts described previously. Furthermore, while information technology has effectively collapsed traditional geographies in expanding trade in the era of globalisation, it has often exacerbated the disconnection between landscape architect and the landscape over which he or she serves as steward. This amplifies Scarfo's (1989) view of the contemporary landscape architect as an 'external steward', who is greatly disconnected from the landscape and its inhabitants. Brown (2002) found that practitioners' connections to environmental concerns and other factors were particularly strained on international projects, as frustrations with a lack of information and understanding about local conditions resulted in a more detached view of stewardship.

A second challenge to practice in the era of globalisation is ensuring broad access to landscape architectural services. While some segments of the profession have historically responded to the needs of the commercial sector, the professional class and the most affluent in society, others have been committed to addressing the needs of working class and marginalised communities (Crewe and Forsyth, 2003). However, the latter group represents a substantially smaller segment of practice. While it has sought to address the needs of the less powerful, its methods have generally relied upon formal structures: advocating for civil rights, economic opportunity and legal standards of property rights and building codes. Such strategies are effective if communities in need are operating within the margins of the formal sectors of society, yet may be ineffective in addressing the needs and conditions of those outside the margins; those immersed in informal communities. As informal sectors continue to burgeon in the developing world, as well as in large cities within the developed world, landscape architecture must continue to investigate methods to engage these communities, if broad access to services is intended to be part of the agenda.

A third challenge to landscape architectural practice comes from the changing nature of professional work in the era of globalisation. Drawing from the work of German sociologist, Ulrich Beck, Swaffield (2002) describes the potential impact of the 'risk society' emerging within the era of globalisation on the profession of landscape architecture. The risk society emphasises the role of individual and economic efficiency and, as a result, traditional organising structures like nation and state are dismantled and replaced with those structures more conducive to meeting the needs of the global economy. As Swaffield points out, the disintegration of civic structures not only impacts on the most vulnerable in society, as described previously, but also impacts on the professions that operate within them. Career decisions, for example, are no longer made in 'relation to established frameworks of state agencies, corporations, unions and professions' but rather 'are made

individually and in conditions of uncertainty' (p 184). In other words, established conceptions of the professional, particularly with regard to his or her role in society, are increasingly open for debate. Others note that if professions established in nation-state frameworks dissolve, they will likely be replaced by something operating on a global scale, to minimise uncertainty associated with international investment (Dingwall, 1999). Regardless, the uncertainty of changes in the structure of professions will have an impact on the nature of practice, and also present the potential for reconsideration of the meaning and modes of practice.

Implications for Landscape Architecture Education

If the profession is to continue to embrace environmental stewardship, advocate for broad access to its services, and respond to the changing role of professions in society, education must carefully consider the implications of trends associated with globalisation. Of primary concern is careful examination of the potential roles of the landscape architecture professional within society. Drawing upon the work of Crewe and Forsyth (2003), as well as from work on traditions in planning offered by Friedmann (1987), we argue that a central concern for landscape architects should be the extent to which they view their work as maintaining and/or reinforcing existing social/power structures within society, or transforming social/power structures to address inequities and injustices. Viewed through this framework, the diversity of work within the profession in the twenty-first century can be categorised not just by design style or by land-use type, but also by the extent to which the work serves to reinforce existing power relations or dismantle them. Given the consequences of uneven development resulting from existing social structures, we believe this dimension of landscape architecture has not been adequately examined, and perhaps the evolution of the profession in the risk society offers an opportunity to consider this dimension more thoughtfully among landscape architectural theorists. As Friedmann notes, a healthy social system must draw from all traditions – a common perspective on the role of the professional is not necessarily desired, nor is it realistic. However, explicit consideration of the potential role of the profession among educators, students and practitioners may reveal interesting and innovative potentials within the profession, particularly with regard to service in the informal sectors of society.

Crewe and Forsyth (2003) suggest that 'all approaches [to landscape architecture should] pay attention to who is collaborating, who is using their work, and what long-term political issues are being considered' (p 51). Such attention arises from a critical awareness of social phenomena that shapes our understanding of a particular situation, or what Freire (1970) calls critical social consciousness. In his work in the field of education, Freire outlines stages of critical social consciousness whereby students increasingly see themselves as embedded in a historic social context defined by relationships of power, oppression and privilege. Building on the work of Freire, Shor (1992) advocates for a 'desocialisation' process for students to counter the effects of being socialised in a world that limits the power of

marginalised populations and diminishes their value and contributions to society. Shor argues that such consciousness is based on theories of inherent unequal power distribution and incorporating literacy as the basis for social change. Action must come, first from lived experience, and change can only occur after connections are made between daily life and larger power structures. Shor's goal is to equip participants with an analysis of power and critical questioning skills (literacy) to allow them to question and challenge the status quo. Brown and Jennings (2003) propose a preliminary framework for design studio education based on critical social consciousness. It offers some guidance in structuring case studies to foster critical awareness within landscape architecture students.

Finally, if landscape architects are going to respond to the needs and concerns of marginalised and informal populations, they not only need theoretical perspective but also a practical tool kit of methods and techniques for appraising local conditions and empowering participants. This suggests educational experiences that engage students in real communities, addressing real situations. But it also requires that these experiences emphasise field work and participatory methods aimed at bridging the divide between the professional class and the informal sector: methods that focus on facilitating analysis and problem solving by community members in response to local conditions and existing power structures; and approaches that instil internal stewardship of the environment within locals, as an effective means of countering the effects of distance and disconnectedness between the professional landscape architect and day-to-day life within these communities.

Participatory Learning and Action (PLA) is one approach towards this type of participation. PLA is closely related to Freire's approach to critical social consciousness that emerged out of political movements in Latin America during the 1960s and 1970s. The philosophical roots of these techniques emphasise educators (facilitators) and learners working collaboratively to investigate issues of power with a focus on transforming society and improving the lives of participants (Hall, 1981). PLA, often referred to as Participatory Rural Appraisal (PRA) when applied to rural issues, is used widely in international development and is defined by Chambers (1994) as 'a family of approaches and methods to enable people to share, enhance, and analyze their knowledge of life and conditions to plan and act' (p 953). The focus of PLA is community based and resource efficient approaches to decentralise decision making, to promote diversity of perspectives, and work towards human and environmental sustainability (Angeles and Jeeris-Weerder, 2000). The three main components of PLA are: investigation of an issue or problem, self and collective reflection and joint decision making focused on collective action that directly benefits the people involved (McIntyre, 2000).

Research tools for PLA include a wide variety of visual, mapping and interview techniques. These can be divided into three categories: visual analysis, interviewing and sampling, and group and team dynamics (Chambers, 1994). A review of the literature reveals a wide range of uses for PLA methods including natural resource management (Joseph and Joseph, 1991), gender equality (Grady and Daqqa, 1991),

public health and nutrition (Maxwell, Armar-Klemesu, Brakohiapa, and Sarpeil, 2001) and slum redevelopment (Arrossi, 2001).

PLA builds bridges between professional skills and community knowledge by using creative and participatory research tools. The process engages residents and researchers in an informative and dialectical process that raises significant questions about everyday experiences with the goal of community action. Researchers and residents become activists using lived experience to guide their investigation. Since research is based in everyday experience, changes are also directly connected to improving quality of life in the community. Participants and investigators work collaboratively to define who is involved in the research, how questions and issues are formulated and how research findings will be used. The collaborative quality of this method requires traditional roles of expert and community member to be broken down. Throughout the process, it is the professional's role to be what Mitlin and Thompson (1995) call a supportive facilitator raising questions and fostering connections between lived experience and desired changes through discussion. This is described by Mitlin and Thompson: '[community members] learn about their own knowledge and capacities, and communicate their ideas and priorities to themselves and supportive external facilitators' (p 239). This change in dynamics promotes community ownership of research process and results and fosters a sense of empowerment among locals. Mitlin and Thompson describe empowerment as the ability of the participants to 'realize and fully appreciate the value of their own knowledge and gain increasing confidence in their capacity to be important agents in development' (p 237).

The emphasis on critical social consciousness and the field tool kit in the era of globalisation have important implications for education. As an initial foray to better understand the implications for education and practice, we undertook a field study of participatory methods within a community in Tijuana, Baja California, Mexico as part of the second author's Master's thesis. Tijuana was selected as a focus for this study due to its convenient location, existing relationships with community service groups that facilitated access and, most importantly, as a useful example of a rapidly expanding industrial city within the developing world, which illustrates many of the conditions inherent in the era of globalisation. The intent was to examine the potential challenges and opportunities for landscape architects working in informal settlements in developing nations, and to understand ways in which PLA approaches may be integrated into a critically conscious planning and design education.

RESEARCH DESIGN

Since 2004, the John T. Lyle Center for Regenerative Studies at California State Polytechnic University, Pomona, has been working in Tijuana as part of Habitat 21, the Center's project for sustainable settlements. Habitat 21 has partnered with Corazón, a non-governmental relief organisation that has been serving the poor in Tijuana for over 25 years, with operations in a number of informal settlements.

Previous study by the Habitat 21 research group identified Nuevo Milenio, a six-year-old community with an estimated population of 6,000 residents, as a community with strong social networks conducive to participatory activities (Lawrence, 2005). Therefore Nuevo Milenio was selected as the focus for this study.

The PLA tools adapted for this research were environment and culture mapping, and transect walks. These activities were interspersed with games, brainstorms and active discussions focused on key issues facing residents. The tools were implemented during meetings over a period of two weeks. Each meeting lasted three hours and was conducted in the style of a workshop. In conjunction with Corazón, participants for the study were identified among residents of Nuevo Milenio. A total of ten women participated in the activities. These women were active in Corazón programmes and the broader community. Women constitute the vast majority of Corazón programme participants, and reflect the high percentage of households headed by women in these Tijuana settlements, as well as gender roles that charge women with maintaining community life. Most of these women were migrants from rural areas in southern Mexico. While many lacked substantial formal education, they were extremely knowledgeable about conditions in their community and possessed a number of practical skills obtained through work experiences and participation in Corazón programmes. These skills included carpentry, masonry and gardening.

Before meeting with participants, we conducted background research into the political, economic and social history of Mexico and the economic policies that have helped shape informal settlements similar to the case-study community. This research helped generate an awareness of the everyday struggles faced by residents in communities like Nuevo Milenio and allowed us to make connections between these daily struggles and the larger power structure within Mexican society. This process embodied characteristics of the desocialisation process advocated by Shor (1992), and followed Brown and Jennings' (2003) call for broader understanding of environmental and social conditions at a variety of scales in developing project objectives and identifying stakeholders.

Figure 1. Residents in Nuevo Milenio engaged in participatory learning activities to reveal a critical awareness of landscape issues.

The first participatory activity was the environment and culture mapping exercise, under the facilitation of the second author. During this activity, participants divided into small groups. Each group was given a large map of their community. The participants were asked to identify a series of community features on their maps (Figure 1). These included the community boundaries, key community sites like stores, significant entry points, parks, their own houses and other resources. Next, the participants were asked to map key community issues on another layer. After the participants finished recording these features, they presented their maps to the entire group. Following the presentations, the activity concluded with a brainstorm summarising the issues and assets.

The second activity was the transect walk, also facilitated by the second author. In the transect walk, participants broke up into small groups and selected a walking route through the community, based on the previous mapping activity. Participants were given a camera and were asked to take a total of twelve photos addressing two
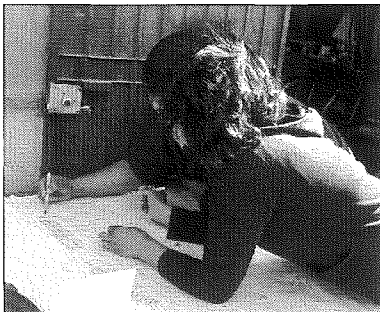
questions: what is working well within the community, and what would they like to change? After the photos from the walk were developed, a second meeting was held where each person selected three photos to present to the group. The presentations were followed by a discussion and a group brainstorm of issues presented as well as possible solutions.

Environmental and Social Analysis of Tijuana, Mexico

Tijuana, Mexico, is an intermediate-sized city located 200 kilometres south of Los Angeles, USA. It typifies the environmental and social challenges facing the border region between the United States and Mexico, as well as urban areas in the developing world during the era of economic globalisation (Figure 2). Between 1985 and 2005, Tijuana's population grew by an estimated 145% to well over 1.3 million people (CESPT, 2003). Much of this growth is the result of trade agreements between Mexico and the United States, stimulating industrial expansion along the northern border region of Mexico and attracting migrant labour. In addition, Tijuana serves as an important initial step for many migrants seeking to ultimately pursue economic opportunity in the emerging metacity of Los Angeles. This substantial growth has tremendous consequences for the region, particularly in terms of providing adequate housing for migrants and environmental impacts associated with growth and poverty. Our background investigation of socio-economic policies in Mexico over the past 40 years reveals the processes that have led to current conditions.

Figure 2. Tijuana, Mexico is located on the US–Mexico border, 200 kilometres south of Los Angeles (source: Google Earth, 2007).

The global recession of the 1970s had disastrous effects on Mexico's economy. In an effort to decrease unemployment levels, the government expanded the public sector, but the increased wages stressed available cash reserves. To supplement the country's income, the government looked to eager United States investment banks for loans. The loans provided a temporary solution for Mexico's economic woes but raised the country's debt from US$6.8 billion in 1972 to US$58 billion in 1982 (Harvey, 2005). Multiple factors, including the increase in debt, escalating interest rates (driven by the United States Federal Reserve), a declining demand for Mexican products due to a recession in the United States, and a decrease in oil prices, put a strain on the over-extended economy. As a result, Mexico was no longer able to make its minimum payment on loans and the country declared bankruptcy (George, 1990).

To avoid financial crisis in the United States and abroad, the international banking community and the United States Government responded by providing a new set of loans totalling US$47.5 billion (Harvey, 2005). These loans were provided on the condition that the Mexican Government apply strict reforms to the country's budget, especially cuts to public-sector services, including schools, health care, food subsidies, drinking water, public transportation and housing.

In 1994, Mexico joined the North American Free Trade Agreement (NAFTA). NAFTA brought an increase in policies associated with encouraging business and manufacturing while promoting the privatisation of industry. The result was an increase in employment levels and an overall decrease in wages in the country (Vadi, 2001). A significant impact of NAFTA was its devastating effect on the rural
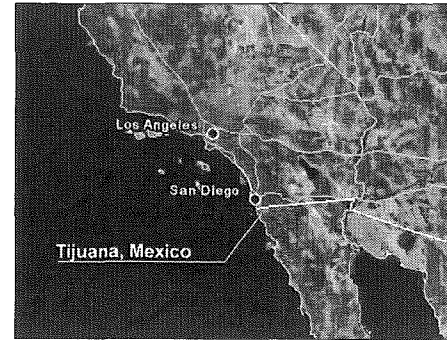
workforce. Protected for nearly a century under a government-sponsored collective land ownership *ejido* system, NAFTA left small farm and agriculture products vulnerable to foreign investors. One result was the purchasing of *ejido* land by large landowners that left many farmers homeless. These shifts in landownership precipitated a mass north migration of farm families to the border cities, such as Tijuana, in search of work where trade policies were promoting rapid industrial expansion. Harvey (2005) explains:

> The subsequent lowering of import barriers delivered yet another blow, as cheap imports from the efficient but also highly subsidized agri-businesses in the United States drove down the price of corn and other products to the point where only the most efficient and affluent Mexican farmers could compete. Close to starvation, many peasants were forced off the land, only to augment the pool of unemployed in already overcrowded cities, where the so-called informal economy ... grew by leaps and bounds (pp 102–103).

The divide between Mexicans reaping the benefits of open markets and those languishing in the informal sectors gives rise to the concept of 'Two Mexicos', as the disparity between rich and poor continues to grow (USAID, 2003, p 1). While nationwide income averages about US$6,400 per capita annually, over half the population earns less than US$1,440 per capita: figures that are much more consistent with earnings in Central American countries.

The landscape of Tijuana illustrates the physical effects of these economic disparities. Driving to the outskirts of the city, one sees vast clusters of houses for migrants, dusty roads and small patches of green (Figure 3). To live in these communities, residents negotiate difficult terrain and unstable soil to excavate lots and build homes (Figure 4). Called *colonias*, these settlements are informal due to illegal land tenure, substandard living conditions, or both. These *colonias* may develop gradually over decades, but may also emerge seemingly overnight as in the
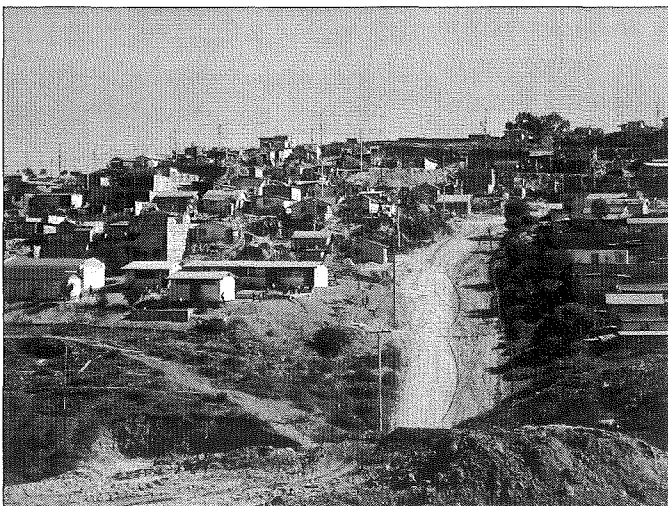

Figure 3. Nuevo Milenio, a rapidly expanding colonia located on the steep hillsides of Tijuana, Mexico.
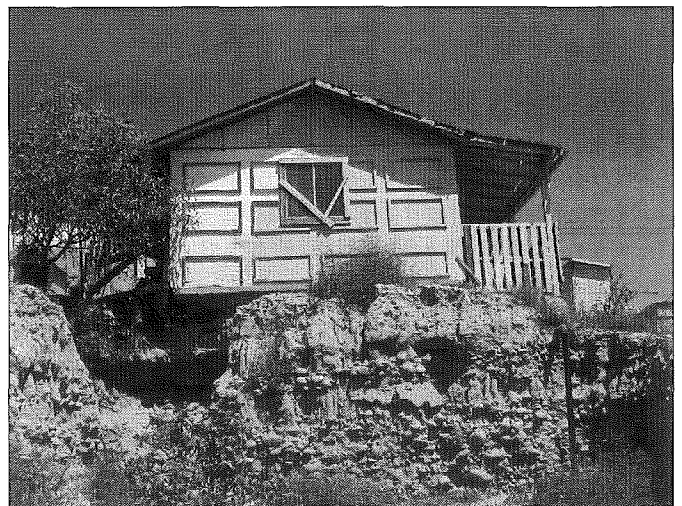

Figure 4. Inadequate slope stabilisation leads to dangerous conditions, which threaten life and property in colonias such as Nuevo Milenio.

case of Nuevo Milenio, swelling to thousands of residents in just a few years.

Infrastructure is limited in these *colonias*, and many basic needs, such as sewerage, emergency assistance, green space, playgrounds, walking paths, roads and other forms of support from local government, do not exist. In Nuevo Milenio, some homes have running water suitable for laundry and washing; most do not have sanitary sewer connections (Figure 5). The roads are unpaved and no drainage system exists – washing and cooking water is poured into the streets after use. In the rainy months, the deeply rutted dirt roads are impassable, restricting movement in and out of the community (Figure 6). Small areas of green space exist around some houses, and only small remnant patches of coastal sage and chaparral plants dot undeveloped hillsides. Most children play near the houses and in the streets. With little support from local government the residents of the *colonias* often rely on their own ingenuity, and the support of local churches and non-governmental organisations, to survive.

In summary, the conditions of Nuevo Milenio reflect the urban inequality, substandard living conditions, environmental degradation and risks associated with informal settlements in the era of globalisation. As such, it serves as a useful case study community to investigate the potential challenges and opportunities for landscape architects interested in effecting change in these types of communities.

Figure 5. Most homes in Nuevo Milenio lack sanitary sewer connections and still rely on poorly planned outhouses.

RESULTS OF PLA ACTIVITIES

Kjer (2006) summarises the broad range of issues and ideas discussed during the PLA activities. Three specific topics of discussion are worth examining in detail for the purposes of this article: garbage, criminal activity and open space within and around the *colonia*.

Garbage in the streets and public spaces within the *colonia* was repeatedly discussed and represented during the mapping exercise and the transect walk. While the City does provide garbage collection for Nuevo Milenio, garbage is still described by participants as a problem that affects both health and community pride. On the maps, residents showed specific places in the community where garbage is dumped (Figure 7). These areas included vacant lots, hillsides and the nearby drainage channel. Participants explained that there are two central issues related to garbage: garbage containers often do not have lids, and not all residents have garbage cans. Because the garbage cans are often open, stray dogs take the garbage out and spread it around the community. The use of plastic bags by those that do not have containers creates the same problem: garbage strewn throughout the streets. As one resident describes:

Figure 6. Typical winter road conditions in Nuevo Milenio.

> They come one time a week to collect the garbage. What happens with the garbage most of the time is that the dogs come and take the garbage out of the cans. Garbage is a big part of pollution in the community. For me garbage is an important issue because it involves each resident showing pride in the community by taking responsibility for their own garbage and putting it out for the trucks to collect. It is an important part of our health.
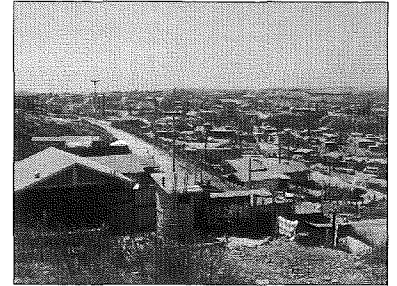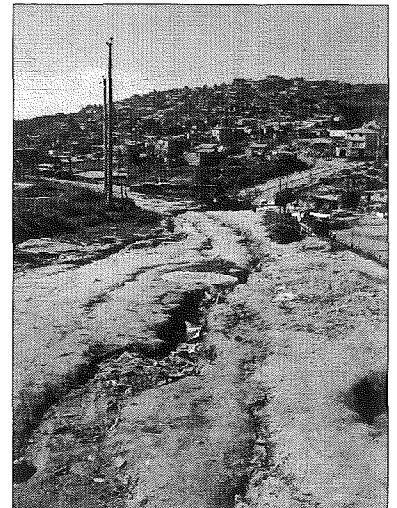
Environment and Culture Mapping Activity
Map Number Two

assaults • house • to go to school
dangerous area/thieves
garbage
bus stop
house • store
burned cars • store • store
garbage
store
community center
assaults • to go to school • school
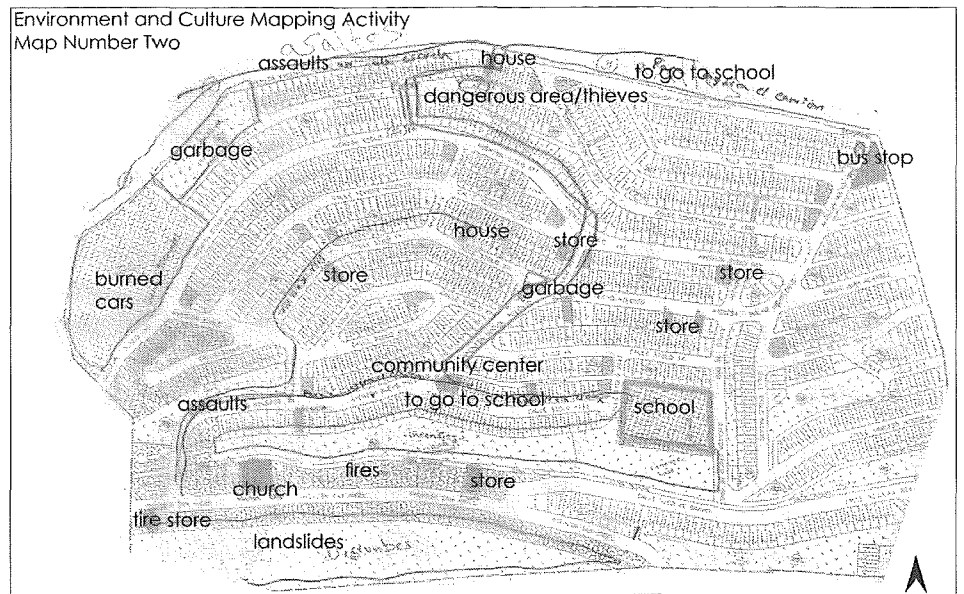fires
church • store
fire store
landslides

Figure 7. Map produced by community members. The process revealed locations of garbage dumping and criminal activity, as well as conditions giving rise to the situation.

Residents understood the direct connection between this waste problem and health. They said that stomach illness, especially in the children, is one of the biggest problems with the improper disposal of garbage.

In the final brainstorming session, residents had many ideas for potential changes that could decrease problems with garbage in the community. Residents discussed garbage as an issue that affects community pride: 'What we would like to change is to have the community [become] cleaner by having everyone put garbage in the right place.' Solutions included having the garbage trucks come twice a week, organising a community-wide garbage clean-up day and educating residents about proper waste disposal and the adverse health effects of poor waste management.

A second topic of discussion was criminal activity within the *colonia*, and its impact on residents' lives. This was consistent with the findings of the social network analysis by Lawrence (2005), which also revealed the extent to which concerns for safety of family and property are primary for Nuevo Milenio residents. Participants mapped areas of high criminal activity and places where they felt unsafe (Figure 7). During the brainstorms following the transect walk, one photo of a known criminal sparked a lengthy discussion about crime in the community. The participants explained that residents know who the thieves are, but do not report their identities to the police for fear of retaliation, as well as a belief that the police do not respond to their needs.

Many aspects of crime in Nuevo Milenio are beyond the residents' control and they reported that they often feel like prisoners in their own homes. The fear of crime appears to have a paralysing effect on the community. During the discussion about crime, residents expressed these feelings and brainstormed

ways to get a handle on this problem. Suggested solutions included installing a guard at the entry to the community. Another suggestion was to begin tracking burglary and other crimes on their own by developing a bulletin where people can report the crime, when it happened, where it occurred and possibly who the perpetrators were.

A third topic of discussion was open space and the lack of play spaces for children in Nuevo Milenio. Through the mapping exercise and transect walk, a discussion of children playing in the streets expanded into a dialogue about community resources and government follow-through. The conversations included discussions about the lack of space in the community for a park, the available skills of the women to build a park, as well as other important considerations, such as problems with planting trees due to the poor quality of the soil, and the need for financial resources. These discussions raised questions directly related to design. For instance, how can perceptions of open space be expanded to include the hillsides and areas around the drainage channel? How can conservation of these areas be promoted in the community? The discussion also revealed the knowledge the residents have, such as construction and gardening, which could be used to build and maintain a park.

Accompanying the women on the transect walk became an opportunity to observe the community with residents; seeing the world through their eyes, as they took photos. During this activity, assumptions of definitions for various typologies of land use became obvious when one resident was asked about a hillside where she was taking a picture (Figure 8). The hillside was vast and empty of homes. The slope was a mixture of garbage, disturbed areas prone to erosion and a remnant assemblage of chaparral plants. When asked, the resident described the area as having little use besides being a dumping ground. This depiction of the hillside was accurate in many ways, and when asked if she would consider the hillside a 'green space,' the resident replied no, because the area was for garbage and was too steep to build on. This interaction demonstrates the different definitions applied to the landscape by local residents and designers. The definition of green space as that which is open and undeveloped and has the potential to host wildlife and plants was in direct contrast with the community member's definition of green space as a programmed place for children to play.

Figure 8: Photo of hillside taken by community member. The photographer described the hillside as having little use for the community.

DISCUSSION

The results of the PLA activities reveal the obvious utility of asking community members to identify the key issues within their community and brainstorm about solutions. When considered in the context of globalisation and its challenges to landscape architectural practice and education, however, the activities also reveal the potential for such approaches to aid the profession in grappling with notions of stewardship, broad access to professional services and the role of the profession in a globalising society.

The PLA activities resulted in a number of discussions related to environmental stewardship. Some of these discussions focused on landscape stewardship issues,
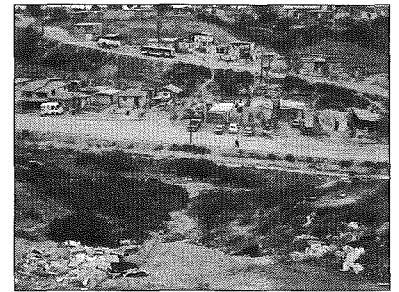
such as garbage within the community, while discussions of criminal activity related to stewardship issues in the social environment. If we accept the notion that contemporary landscape architects operate as external stewards, a condition exacerbated by increased distances between professional and site within the era of globalisation, then it seems reasonable to explore strategies that foster internal stewardship with residents of communities in which landscape architects work.

PLA processes offer the opportunity for the landscape architect to facilitate learning and expression among residents about their local environment, potentially fostering stewardship values. In some instances, Nuevo Milenio residents clearly articulated existing stewardship values, such as concern over garbage in their community, but the PLA process enabled them to discuss strategies for acting on these values on a community scale, beyond tending to their own properties. In other instances, residents were exposed to environmental concepts by the landscape architect/facilitator, to raise awareness of threats in the landscape (such as erosion) or opportunities (such as the undeveloped hillside as an amenity). What emerges is a mixture of existing environmental concerns from the community, as well as new environmental concerns and resources that are discovered by community members through effective facilitation.

The results of our PLA activities also revealed many implications for the work of landscape architects concerned with broad access to their services, particularly those interested in working with and addressing the needs and concerns of informal sectors of society. Many of these implications were revealed during the resident brainstorming session. In the case of garbage within the community, one solution identified was more frequent garbage collection by the City. In the case of criminal activity, a solution was to install a guard at the entrance to the *colonia*. While these may be viable solutions within the formal sectors of society, neither is feasible within informal sectors where community members lack power to effect change in government policy or resources to pay for their own private services to supplement governmental offerings. However, participants quickly recognised these limitations within the discussions and sought other creative solutions that were within their capacity to effect change.

The implication is that there is great potential for landscape architectural services within these informal communities, but the expected outcomes and the role of the landscape architect in these activities might be quite different than in the formal sector. Understanding the capacity of the community becomes critical, as the landscape architect seeks ways to organise this capacity into effective change. For example, in the case of the park for the children of Nuevo Milenio, the residents already had strong ideas of what this park should include, and great capability in basic construction, including concrete work, carpentry and planting. A critical role for the landscape architect in this project could be connecting the community with resources and knowledge to help build the park, including alternative low-cost building materials, assistance in technical considerations such as drainage, and organising the community in an effective way to facilitate construction.

There are tremendous opportunities for creativity and innovation within these projects, due to resource limitations and the lack of policies guiding development within these informal settlements. At the same time, the vulnerability of these communities must be recognised, and the practitioner must take steps to ensure public health and safety. As the application of design standards for the developed world is often inappropriate given the levels of risk within these communities, the challenge is often one of articulating the balance between acceptable and unacceptable risk in the context of informal settlements.

The results of our study also reinforce the need for professionals to re-examine their roles within the era of globalisation. Our critical analysis of socio-economic conditions in Mexico was effective in fostering awareness regarding power structures influencing conditions on the ground in Nuevo Milenio. The PLA activities also revealed the tremendous potential of participatory activities that are effectively facilitated to foster empowerment within communities. However, developing critical awareness and effective facilitation are skills that must be learned. If landscape architecture is interested in effectively using the potential of participation, professional education must integrate critical awareness and facilitation training into their curricula in more substantive ways. But this education must be complemented with a theoretical perspective that challenges students to critically examine the role of landscape architecture in maintaining existing social structures or transforming them to address inequities in society. Individuals with varying theoretical perspectives may be interested in assisting oppressed informal communities, but perspective is important in understanding whether this assistance is aimed at ameliorating the symptoms of globalisation while perpetuating the processes that give rise to them, or seeking to overturn the injustices that create such conditions. As Freire (1970) notes:

> Any attempt to 'soften' the power of the oppressor in deference to the weakness of the oppressed almost always manifests itself in the form of false generosity; ... In order to have the continued opportunity to express their 'generosity,' the oppressors must perpetuate injustice as well ... True generosity consists precisely in fighting to destroy the causes which nourish false charity. False charity constrains the fearful and subdued, the 'rejects of life,' to extend their trembling hands. True generosity lies in striving so that these hands – whether of individuals or entire peoples – need to be extended less and less in supplication, so that more and more they become human hands which work and, working, transform the world (pp 44–45).

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