Back to Basics: The Influence of Sustainable Development on Urban Planning with Special Reference to Montreal

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Résumé

Durant les vingt dernières années, le terme « développement durable » est devenu
Durant les vingt dernières années, le terme « développement durable » est devenu
une expression commune qui jouit d'un écho favorable auprès des politiciens et
autres décideurs à tous les niveaux de gouvernement. Reflétant cette tendance, les
planificateurs utilisent ce concept de plus en plus de manière explicite et impli-
cite dans la préparation de leurs plans. Par cette approche, les planificateurs sont
retournés aux sources, puisque les principes qui sous-tendent le développement
durable étaient déjà bien représentés dans les écrits des fondateurs de l'urbanisme
moderne de la fin du XIXe et du début du XXe siècle, tels que Patrick Geddes.
Bien que dans les années subséquentes les planificateurs aient appliqué ces prin-
cipes de façon sélective, en tentant de faire face aux diverses priorités de dévelop-
pement, aux changements sociaux, économiques et technologiques ainsi qu'à de
nouvelles notions en sciences sociales et physiques et à l'émergence des diverses
spécialités en planification, le concept de développement durable a toujours été
un point de référence fondamental pour la profession.

Cet article porte sur les principes qui sous-tendent le développement durable tel
que représenté par les fondateurs de l'aménagement moderne et par la littérature plus
récente à ce sujet. Un cadre d'analyse pouvant être utilisé en vue d'estimer dans quelle
mesure les plans actuels reflètent ces principes est développé et est utilisé pour évaluer
trois plans en vigueur à Montréal. Bien que chacun des plans contienne des principes
de développement durable, ils ne reflètent que partiellement les idéaux professés par
les réformateurs en planification du début du XXe siècle. Néanmoins, nous pensons
que le paradigme du développement durable est un outil utile pour mettre en lumière
des questions fondamentales en aménagement et ouvrir la voie vers un développe-
ment qui réconcilie les objectifs sociaux, économiques et environnementaux.

Mots clés: développement durable, aménagement, critère de développement durable, Montréal.

Abstract

Over the past 20 years "sustainable development" has become a household term that resonates with politicians and other decision makers at all levels of government. Riding this wave, planners have increasingly used the concept, explicitly or implicitly, in preparing their plans. In doing so, planners have essentially gone 'back to basics' as the principles that underlie sustainable development are well represented in the late 19th and early 20th century writings of the founders of modern planning, such as Patrick Geddes. While over the ensuring years, planners have selectively applied these principles as they attempted to cope with shifting development priorities, societal, economical and technological changes, new insights in the physical and social sciences and the emergence of planning specialties, the concept of sustainable development has always been a fundamental reference point for the profession.

This paper discusses the principles that underlie sustainable development as represented by the founders of modern planning and more recent literature. An analytic framework that may be used to assess the extent to which current plans reflect these principles is then developed and used to structure a discussion of three current plans in Montreal. While each plan reflects sustainable development principles, all fall short of the ideals espoused by early planning reformers. Nonetheless it is argued that the sustainable development paradigm serves as a useful foil to focus attention on fundamental planning issues and point the way towards development outcomes that balance social, environmental and economic objectives.

Key words: sustainable development, planning thought, sustainable development criteria, Montreal.

INTRODUCTION

Sustainable development is one of many paradigms[1], such as Healthy Cities, Smart Growth and Creative Cities, that have influenced urban planning in recent years. Each of these paradigms has strategic importance as it serves as a lens to focus attention on critical social, economic and environmental issues and points to solutions from a perspective that is particularly salient in a specific context. In recent years, this packaging of 'ways of seeing' problems and their solutions has been remarkably successful in drawing media and public attention and, thereby, influencing public and private sector decisions. While the speed at which paradigms for planning come and go would seem to indicate

that 21ˢᵗ century planners have a relatively short attention span, all of the planning perspectives listed above are in some ways consistent with the core values of the modern planning movement that emerged in the late 19ᵗʰ century. The challenge for planners is to use paradigms that resonate with the public in a way that reflects core planning values.

This paper explores the relationship between the sustainable development paradigm and planning thought. While special attention is given to the concept that was crystallized in 1987 in the World Commission on Environment and Development (WECD) report entitled *Our Common Future*, the paper offers a broader perspective by examining how the root components of sustainable development are represented at different points in the history of modern planning. An analytic framework is then developed that highlights key aspects of the sustainable development paradigm. The framework is used to discuss selected current plans and planning processes in Montreal. Finally, conclusions are offered concerning the influence of the paradigm on urban planning.

SUSTAINABLE DEVELOPMENT AND PLANNING THOUGHT

Definition

Sustainable development has been defined so many different ways that some say it has simply led to 'sustainable confusion'! Nonetheless, the definition in *Our Common Future* (1987) is by far the most frequently quoted and serves as a reasonable departure point for the discussion in this paper.

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WECD 1987, 43)

As noted by the Canadian Council of Ministers of the Environment, the concept stresses the need to balance economic development with available renewable resources, limit the extraction of non-renewable resources to the rate of resource substitution, and ensure that waste and other forms of pollution can be readily absorbed by the environment (MDDEP 2005). This interpretation of the concept, which essentially focuses on the *sustainable utilization* of the earth's resources, is widely used by government and industries. The debate on climate change, for example, is largely addressed in these terms.

The WECD report, however, also draws attention to the need to promote economic development, especially in the developing world, to eliminate poverty. This introduces social equity issues and repositions sustainable development as a means of balancing social, economic and environmental imperatives, the so-called triple bottom line. Further, extensive institutional changes at local, regional, national, and international levels to ensure equitable and effective use of the earth's resources over the long term are recommended in the report. It is argued that new multi-

stakeholder governance models are needed to mobilize all actors in civil society to play an active role in managing common resources. All of these elements must be considered integral to the WECD approach to sustainable development, despite their omission in the definition most often cited.

The lack of a succinct, comprehensive definition of sustainable development in the WECD report led to considerable debate concerning the meaning of sustainable development with reviewers offering different interpretations of the words 'development', 'sustainable' and 'needs'. As a result the term has been appropriated to serve many competing agendas (Campbell 1996; Andrews 1997). For some commentators development refers to quantitative change and consequently the concept becomes an oxymoron as continuous physical growth would be impossible to sustain on a finite earth.

In working towards a more comprehensive definition of sustainable development, Berke and Conroy (2000) highlight four primary characteristics of the concept from the literature: system reproduction, balance among environmental, economic and social values, the need to link local and global concerns, and the nature of development as a dynamic process. This leads them to the following definition:

> "Sustainable development is a dynamic process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic and ecological systems, and link local actions to global concerns." (Berke and Conroy 2000, 23)

While the above definition incorporates the key elements of the WECD report, it is important to stress that the term 'development' has both qualitative and quantitative interpretations and that it involves a continuous process of change. These concerns are reflected in the following quote from Kevin Lynch's seminal book *Good City Form*, which was published in 1981, well before the WECD report.

> "The good city is one in which the continuity of this complex ecology is maintained while progressive change is permitted. The fundamental good is the continuous development of the individual or the small group and their culture: a process of becoming more complex, more richly connected, more competent, acquiring and realizing new powers – intellectual, emotional, social, and physical" (Lynch 1981, 116).

For Lynch, the task is not to achieve a steady state with respect to human-environment relations but rather to support a continuous process of change that is directed and implemented by individuals and small groups. This qualitative rather than quantitative perspective on development is also reflected in the United Nations Development Programme's series of Human Development Reports which state that "the basic objective of development [is to enlarge] people's choices" (UNDP 1995, 1), as well as the World Health Organization's Healthy City Initiative that

stresses quality of life and gives greater consideration to maximizing "human development and the achievement of full human potential" (Hancock, Labonte and Edwards 1999). Consequently, in this paper:

> sustainable development is progressive qualitative or quantitative change that ensures the vitality of living systems and the sustainable use of resources, while promoting synergy between nested social, economic and ecological systems through the use of multi-stakeholder participation in planning, decision-making and implementation processes with special attention being given to social equity and the processes through which individuals and small groups develop in qualitative terms.

While this definition is idealistic it provides a sense of direction by underlining key components of the concept that are represented in current planning literature and in the insights of the founders of modern urban planning.

A Brief History of Sustainable Development

Sustainable development is not a new concept as throughout recorded history many cultures have used ingenious techniques to sustain agricultural yields and minimize damage from flooding, land slippage and earthquakes through site selection, crop rotation, building design and common cultural practices. Most of these efforts were, however, designed to cope with specific problems within a limited temporal and spatial framework. The major shift that has occurred over the past 45 years is that sustainable development has emerged as a global concern that requires urgent attention (SD Gateway 2005).

In all but name, sustainable development was at the very heart of modern planning as it emerged in the late nineteenth century to cope with the effects of the industrial revolution. Land use regulations, water and sewerage infrastructure projects, waste management, open space, improved building design and the provision of affordable housing for workers were among the basic measures introduced to promote healthy communities and sustain urban development. These measures were often introduced by self-interested business owners or upper class citizens and civic improvement leagues that were genuinely concerned with the plight of the poor and wished to promote a positive image of their city (Hodge 1986).

One of the earliest urban reformers, Patrick Geddes, developed a comprehensive vision of sustainable development that rivals our understanding of the concept today. Applying his education in biology to the urban environment Geddes focused on processes of economic, social and environmental change and emphasized the need to fully understand the systemic relations within and between these components before proceeding to a planning phase (Hall 1988, 140). For example, he advocated using drainage basins as territorial limits for planning and conducting an analysis of existing social and economic systems within these areas. This analysis would then form the basis of planning proposals that emphasized 'bottom-up' development by individuals and community groups (Edinburgh City

Libraries 2005). Anticipating the concerns of the WECD by over 70 years, he used the phrase "Think Global, Act Local" in his book *Cities in Evolution* which was published in 1915 and demonstrated his commitment to the concept by traveling to India to advise on urban renewal projects and promote a self-help approach (Hall, 1988, 247). For Geddes, planners should be "synthesists" who are aware of the nested layers in complex systems and act as negotiators to promote synergy between "place, work and folk," (Porritt 2004) three words that might be considered "environment, economy and society" in today's lexicon.

   The early modern planning movement was also very concerned with natural resource management as evidenced by the following citation from a report prepared by the Canadian Commission on Conservation in 1915.

> "… each generation is entitled to the interest on the natural capital, but the principal should be handed on unimpaired" (cited in Wolfe 1994, 17).

Clearly anticipating the definition of sustainable development that was made famous in *Our Common Future* some 70 years later, an advisor for the Commission of Conservation, Thomas Adams, lobbied for provincial planning legislation to deal with resource management and urban development across the country, provided planning advice to all levels of government, and established a professional association of planning in 1919 (Wolfe 1994).

   Despite this remarkable beginning, sustainable development has clearly not been common practice over the intervening years. Part of the reason for this lies in the myriad factors, including social and economic pressures, that derail plans, however well conceived, before they are implemented. However, it is also important to note that governments in western countries faced competing priorities as they moved through periods of war, economic boom, depression, war and reconstruction within a very short period of time. Further, rapid advances in scientific knowledge and analytic methods contributed to the emergence of specialists and a sharpening of the lines between disciplines. In any event, planning became preoccupied with efficiency (Wolfe 1994); problems and their solutions became more narrowly defined within sectors, such as housing and transportation, and confined to what are now commonly referred to as silos. This problem was anticipated by Geddes who wrote:

> "It is but in the earlier stage of every scientific and technical education, that we analyse and see and handle things strictly apart: in the needed further phase we again see them as an interacting whole, and so re-adjust them together. It is because minds fix in the first stage, that great dis-specialised schemes … so rapidly pass into failures and extravagance." (cited in Hall 1988, 247)

Early environmental legislation reflected the sectorial administrative structure and mindset of professionals, and focused on single resources such as air or water quality. This legislation enabled bureaucrats to set benchmarks for spe-

cific emissions that were known to affect health and safety, a very important first step. The interactions between individual emissions and the much wider implications for the environment as a whole and society were, however, not addressed (Schulze 1993).

George Bernard Shaw's phrase "every profession is a conspiracy against the laity"[2] captures the mood in the late 1960s, a period that was pivotal in the environmental movement. Rising income and education levels, a virtual communications explosion, and the emergence of multiple stakeholder groups that were adept at getting their message out, forced professionals to be more transparent about how they arrived at their conclusions. In this context, lofty ideals were not enough. Decades of evidence documenting unsustainable development practices lay on the ground. By the end of the 1960s unrelenting citizen pressure coupled with insistent advocacy planning on the part of some planning professionals and academics led to a complete restructuring of the planning process and the nascence of a much more active and broad-based environmental movement.

The seeds for the shift had been germinating for some years with the publishing of books such as the *Death and Life of American Cities* (Jane Jacobs 1961), and *Silent Spring* (Rachel Carson 1962). These two books, in particular, demonstrated the need to return to the more holistic approach to community development and environmental management espoused by Geddes and others, a challenge that was taken up in other works such as *The Last Landscape* (William Whyte 1968), *Design with Nature* (Ian McHarg 1969), and *The Limits to Growth* (Meadows et al. 1972) which offered new tools to explore the relationship between society, economy and environment, and emphasized the need to resolve environmental issues at all scales from the neighborhood to the globe.

Public distrust in professions and institutions, coupled with pluralism and articulate activism forced public authorities to offer decision-making processes that were much more transparent and participative. The result in the United States was the National Environmental Policy Act of 1969 which effectively provided an oversight mechanism that could be used to second-guess the decisions of any federal agency. Explicit reference in the legislation was made to the need to go beyond the sectorial approach and to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's [sic] environment" (NEPA 1969, sec. 102).

All federal agencies and departments were now to submit environmental impact statements to an independent agency, the Council of Environmental Quality (CEQ), which then ensured that related government units as well as community groups and individuals had the opportunity to comment on government projects. The insistence of the CEQ that an environmental impact statement must explicitly consider comprehensive system-wide effects of alternative development

scenarios, including the status quo, in qualitative as well as quantitative terms and highlight any commitments of non-renewable resources, effectively unveiled the planning process.

Within the following five years almost all OECD countries had adopted comprehensive, procedural environmental assessment legislation for which the NEPA served as a model and the OECD itself had issued a Declaration on Environmental Policy.[3] While most of these countries made modifications to their environmental assessment and review procedures over subsequent years, the effect was immediately dramatic. The environment was declared to be everyone's business and planners were now required to explicitly demonstrate that they were respecting the core values of their profession.

In the 1980s the global sustainability issues that had been hinted at by Geddes in the 1890s and formally addressed by the international community at the *UN Conference on the Human Environment* 1972, and *Habitat* 1976 became more and more prevalent. These initiatives led to the WECD report *Our Common Future* in 1987 which offered up sustainable development as a household word. Even the World Bank was publishing overviews of environmental issues and detailed environmental management guidelines for project managers by 1992 when the *UN Conference on Environment and Development (Earth Summit)* was held. That conference produced *Agenda 21* and spun off *Local Agenda 21* that have had significant influence on urban planning.

Currently, it appears that a management age has taken hold. Using tools that became available in the 1990s, a renewed management class is developing indicators and benchmarks that measure productivity on a continual basis (de Gaulejac 2005). In many ways, this tendency is strikingly similar to the drive to ever increasing efficiency during the industrial revolution. Intense competition is seen as inevitable and winning or losing is largely reduced to indicator scores. Increasing vertical dominance is leading to a decline in the relative importance of middle managers and a widening gap between the rich and the poor (Wolfe 2002). While one can only applaud that evaluation and monitoring are increasingly considered integral to the development process, it is important to ensure that these measurement systems are used to support a holistic vision and are sufficiently subtle to incorporate difficult to measure concepts such as social capital.

This brief review suggests that sustainable development principles have played a fundamental role in urban and regional planning in Canada since at least the 1890s when modern planning took root. The ways in which these principles have been interpreted and applied have, however, varied significantly at different points in time. While the concept of sustainable development currently enjoys widespread support, much of the attention by governments and business focuses on sustainable utilization issues, such as the fishery and forestry industries and problems related to excessive "greenhouse gas" emissions. Further, a meritocracy

has emerged that is fueled by the emphasis on increasing productivity and competitiveness with the result that one of the pillars of sustainable development, social equity, is largely ignored. Challenges lie ahead if the profession is to live up to the aspirations of the founders of modern planning.

SUSTAINABLE DEVELOPMENT, PLANS, & PLANNING PROCESSES

There have been a number of attempts to evaluate whether sustainable development principles are reflected in plans and planning processes. For example, Berke and Conroy (2000) evaluated 30 comprehensive plans in US cities using content analysis to assess whether six factors were present. The factors were harmony with nature, livable built environments, place-based economy, equity, polluter pays, and responsible regionalism. They found that while many communities addressed these issues in their plans, planners were often not sure how to translate them into practice. Professional education, mandatory inclusion of sustainable development principles in plans, monitoring of outcomes and further research are recommended. Berke and Conroy's study did not consider planning processes for the plans evaluated.

In this paper, criteria were developed to assess whether the sustainable development paradigm is reflected in both plans and planning processes. These criteria reflect the earlier discussion on the definition of sustainable development and the historic overview, as well as the author's personal experience. The criteria are used in the subsequent section to structure a discussion of the influence of sustainable development principles on recent plans and planning processes in Montreal. It should be noted that the criteria essentially serve as a checklist for the review. No attempt is made to develop scores and weights for criterion as, consistent with the definition offered above, sustainable development is considered to be a preferential development path rather than a specific outcome.

Sustainable Development Focus

1. The viability of living systems is explicitly addressed.
2. The sustainable utilization of resources is explicitly addressed.
3. Competing social, economic and environmental objectives are highlighted and solutions that promote positive synergy between these three components are advanced.
4. Social equity within and between generations is promoted.
5. Qualitative and quantitative development perspectives are present.
6. Nested system functions form the basis of the analysis of current conditions and are used to assess the effects of interventions in social, economic and biophysical domains.
7. Development is considered to be an unfolding process that is responsive to outcomes, i.e. a "learning ecology."[4]

Territorial Boundaries

1. A single jurisdiction defines the territorial extent of concern.
2. Multiple jurisdictions are addressed simultaneously.
3. The spatial extents of social, economic and/or biophysical processes are used to define the territorial extent.
4. Nested systems that incorporate horizontal and vertical relations between social, economic and biophysical components are used to define the territorial extent.
5. Global issues are addressed.

Time Frame

1. Immediate or election cycle.
2. Generation.
3. Lifetime.
4. Mixed scanning.

Planning Process

1. Public consultation concerning completed plans conducted prior to approval.
2. Summits and visioning exercises are used to focus the planning effort in the initial stages.
3. Interdisciplinary technical committees provide input during the plan making process to ensure that intersectorial effects are taken into account and synergy is maximized.
4. Civil society representatives participate on steering committees that review the progress of the plan.

Implementation Process

1. Public agency implements plan.
2. Strategic partners within governmental, industrial, institutional and civic society sectors assume responsibility for specific tasks as part of a coordinated action program.
3. Actors within a system of nested self-organizing and self-governing units implement aspects of the plan that are particularly salient to their unit with due regard to horizontal and vertical relationships between units.
4. Regular monitoring and evaluation program.

Role and skills of Planners

1. Substantive expertise in planning.
2. Visionaries and communicators.
3. Analysts of complex nested systems.
4. Consensus builders and facilitators of collaborative action.

SUSTAINABLE DEVELOPMENT IN MONTREAL

The influence of the sustainable development paradigm is evident in the thinking behind several of the plans that are currently in force or are under preparation in the Montreal region.

Protection and Enhancement of Natural Environments

The Policy on the Protection and Enhancement of Natural Environments (Ville de Montreal 2003) was one of the first planning initiatives under the Tremblay administration to go through public consultation and be approved by council. As expressed by Mayor Tremblay, the "goal is not to prevent the development of new, high-quality residential or industrial projects, but rather to provide ourselves with a tool that will allow us to act in a way that ensures that development is not done to the detriment of nature" (Ville de Montreal 2003, 1). In December 2003, the City allocated $36M over a three year period to implement this policy. While this is far below the estimated $200M that would be needed to purchase the remaining forested undeveloped land on the island (Oljemark 2002), it is intended to be used for selective purchases and as a catalyst for more innovative techniques such as land swaps and land trusts in association with non-governmental organizations.

The policy statement identifies 10 "ecoterritories" on the Island of Montreal that support, or have the capacity to support significant biodiversity. These zones are located in mature wooded areas, the drainage basins of streams, and along the river's edge. As illustrated in Figure 1, the boundaries of these territories are strikingly different from the demarcation of traditional planning areas.

Multidisciplinary technical committees that include representatives of the borough, City, provincial and federal governments are being established to prepare development plans that protect and enhance the ecological integrity of these sites. These committees may also invite developers and observers representing civil society to be present during the meetings. Public consultation sessions are to be held by the technical committees or during the annual review of the City's management committee and regular plan review and approval statues apply.

The ecoterritory policy is clearly consistent with sustainable development principles. First and foremost, it respects the ecological processes in sensitive environmental areas and provides a framework to develop a collaborative multi-

stakeholder development plan for these areas with planners assuming the roles of consensus builders and facilitators of collaborative action. If successful, the biodiversity of remaining natural areas within the urbanized area of Montreal will be preserved for many years to come. The approach, however, is limited to the preservation of biodiversity and is not intended to serve as a comprehensive sustainable development plan. This is not necessarily a problem as the policy has been fully incorporated in the city Master Plan. A more serious constraint is the lack of a regional environmental plan to set the context.

Master Plan

The City of Montreal's Master Plan (Ville de Montreal 2005a) which came into effect in December 2004 incorporates the recommendations of the Montreal Summit that was held in June 2002. This document, which won a prize at the annual conference of the Canadian Institute of Planners in July 2005, explicitly endorses:

> "the principles of sustainable development, especially with regards to urban de-velopment and intends to take a balanced approach based on economic vitality, social equity, environmental preservation and respect for the needs of future generations." (Ville de Montreal 2005a, 5)

Figure 1: Designated "Ecoterritories"
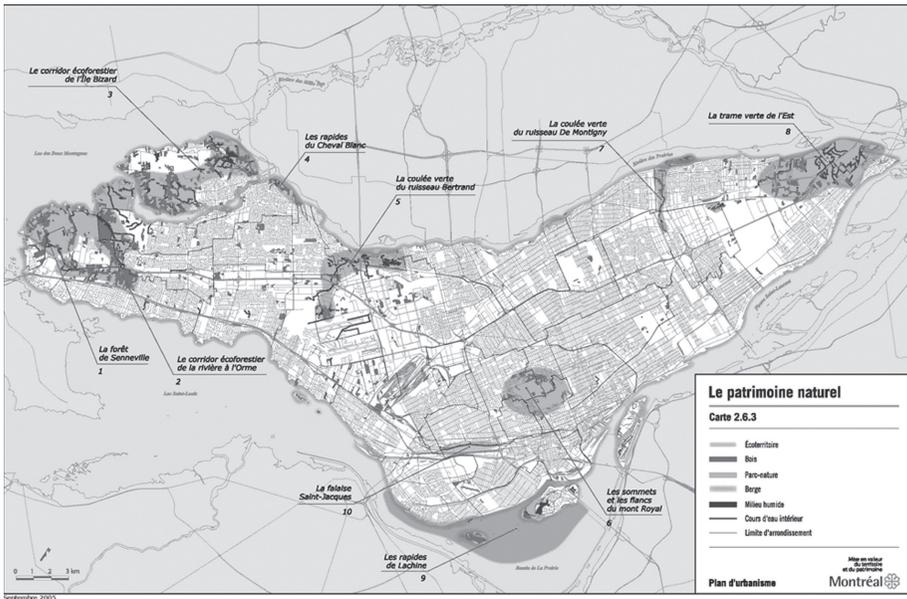
Source: Ville de Montréal 2005a, 169.

The sustainable development orientation is reflected in the structure of the document, which departs from the sectorial approach that is commonly used in favor of "a cross-sectional perspective on planning issues and implementation measures" (Ville de Montreal 2005a, 2). The planning issues that are used to structure the document are:

1. High-quality diversified and complete living environments
2. Structuring, efficient transportation networks that are fully integrated into the urban fabric
3. A prestigious, convivial and inhabited centre
4. Dynamic, accessible and diversified employment areas
5. High-quality architecture and urban landscapes
6. An enhanced built, archaeological and natural heritage
7. A healthy environment.

Each of these issues leads to specific objectives that in turn are addressed with a number of explicit actions and implementation protocols. The cross-sectorial approach is evident throughout. Sustainable development principles are most in evidence with respect to issues related to living environments, transportation, natural heritage and environmental health. A summary of objectives and actions, as well as a thematic index are provided in appendices to facilitate a sectorial reading of the document and implementation by City departments, which are organized on that basis.

Inspired by the many workshops that were held during the sectorial and borough summits; guided to some extent by a committee with representatives from other departments, non-governmental agencies and academics; and subjected to extensive public consultation; the plan is in many ways a collaborative document. In general, it has been very well received, although a number of groups are 'holding their breath' as they wait to see how specific measures of the plan will be implemented in their area.

The plan reflects the characteristics of a sustainable development approach to planning identified above. The cross-sectional issue approach provided a practical way to 'drill down' into nested system functions, appropriate time frames ranging from immediate to forever are foreseen, the planning and plan implementation processes involve collaborative strategic partnerships and City planners have effectively assumed all of the functions listed.

The primary concern is respect to territorial boundaries. While ecoterritory and borough boundaries are used as appropriate, it was not possible to deal with regional issues in the absence of a plan for the Montreal Metropolitan Community. This is an especially important shortcoming with respect to planning new development areas, transportation systems and addressing environmental issues. Furthermore, in the absence of clear national and provincial policies concerning critical environmental issues it is difficult to prepare effective implementation strategies.

Strategic Sustainable Development Plan

The *plan stratégique de développement durable* (Ville de Montreal 2005b) was adopted in April 2005 and is to be implemented over a five year period from 2005 to 2009. The plan making process began in 2003 under the leadership of the City, with financial and technical support from the Conférence régionale des élus de Montréal and the Conseil régional de l'environnement (CRE) de Montréal.

The plan preparation was innovative as it relied very heavily on a series of workshops that were attended by approximately 70 'partners' representing government, industries, institutions, academics and non-governmental organizations. These partners provided direct input over a two year period as the project moved from an analysis of current environmental conditions and prospects, to the identification of orientations and finally specific actions in the fall of 2004. The result was a collaborative effort.

The implementation process is also innovative as the partners signed a statement of principles at the outset concerning sustainable development and committed their organizations to implement specific aspects of the plan that fall within their jurisdiction. While implementation will occur by collaborative action on the part of a broad cross-section of the Montreal community, the City assumes responsibility for coordination and completing an annual review of progress with respect to a set of explicit indicators.

Four general principles guide the plan: community as the heart of sustainable development, the wish for a better quality of life, the need to increase environmental protection, and the goal of achieving sustainable economic growth. The plan identifies 10 orientations that include the following six areas of intervention:

- Reduction of greenhouse gases
- Reduction of water and energy consumption
- Responsible waste management
- Protection of the natural environment
- Enhancement of the quality of life in neighborhoods
- Promotion of activities, management practices and decision-making processes that will support sustainable development.

One or more specific actions, complete with a time frame, are identified for each orientation. For example, the plan intends to put into effect the City's commitment to reduce greenhouse gas emissions to 6% below their 1990 level by 2012.

The plan was accompanied by a program known as *Quartier 21* to encourage neighborhoods to develop and implement local action plans. Each year a small number of neighbourhood projects will be supported financially by the City.

The plan is intended to be complementary to the environmental components of other initiatives such as the ecoterritory policy, the master plan and a transporta-

tion plan that is currently under preparation. This role will be enhanced by annual reports on the state of the environment and progress toward completing the specific actions that have been identified. These reports are to be used to redirect resources to critical areas that need improvement.

The impact of the plan will, however, be limited as it does not incorporate an environmental impact assessment function for projects within the municipality. All too often municipal projects that do not fall under an explicit clause in provincial or federal legislation escape scrutiny and decisions are made without a full understanding of the projects impacts, both positive and negative. For example, environmental assessments were not completed during the selection process for two 'Super Hospitals' although their location will have significant effects on many environmental factors such as transportation demand and therefore greenhouse gas emissions.

The strategic sustainable development plan is essentially a work in progress. It identifies critical issues, provides a sense of direction toward the resolution of these issues, commits the City and its partners to specific actions and incorporates annual reviews that will hold the City accountable. It is a good start that has already had immediate effects. However, a full assessment of the plan will have to wait until some of the specific actions, such as the greenhouse gas emission reduction plan, have been prepared. It is only then that we will be able to prioritize the actions and have some assurance that they will have the desired effect.

The plan offers minimal attention to social issues. It is primarily concerned with achieving sustainable utilization of environmental resources. While reference is made to global issues, the plan, true to its pragmatic approach, focuses on what can be accomplished within the official limits of the City of Montreal.

Overview

Figure 2 presents an overview of the influence of the sustainable development paradigm on selected plans and planning processes in Montreal using the criteria presented earlier in this paper. It should be noted, however, that none of the plans fully address all of the criteria. Rather the text in the figure simply indicates ways in which the sustainable development paradigm is addressed.

CONCLUSION

The principles of sustainable development have influenced modern planning since its inception in the late 19th century. In fact, while there have certainly been refinements over the years due to advances in physical and social sciences, as well as public awareness, it can be argued that virtually all of the fundamental principles that are currently associated with the term were put forward by early planners at that time. Simply put, sustainable development is a core value for urban planning and planners have gone back to basics in endorsing it.

Figure 2: Overview of SD influences on planning in Montreal

	Natural Environments	Master Plan	Strategic SD Plan
Sustainable Development Focus	• Vitality. Protect areas of ecological value. (1) • Balance between land development and conservation. (3) • Nested ecological systems considered. (6)	• Vitality. Protect areas of ecological value. (1) • Sustainable utilization & resource management. (2) • Balance between social, economic and environmental issues. (3) • Social equity. (4) • Qualitative & quantitative development. (5) • Nested system. Cross-sector perspective on planning issues and implementation measures. (6)	• Vitality. Protect areas of ecological value. (1) • Sustainable utilization, resource management & pollution abatement. (2) • Balance between social, economic and environmental issues. (3) • Support for limited number of community driven neighborhood action plans. (4) • Qualitative & quantitative development. (5) • Nested system. Cross-sector perspective on environmental issues and implementation measures. (6)
Territorial Boundaries	• Boroughs. (2) • Ecological units, largely defined by surface water drainage basins on the Island of Montreal. (3)	• Single jurisdiction: Island of Montreal. (1) • Multiple jurisdictions: boroughs. (2)	• Single jurisdiction: Island of Montreal. (1) • Multiple jurisdictions: boroughs. (2)
Time Frame	• Mixed scanning. (4)	• Mixed scanning. (4)	• Mixed scanning. (4)
Planning Process	• Public consultation on policy. (2) • Collaborative multidisciplinary technical committees develop plans. (3) • Public consultation on plans. (1)	• Summits & visioning exercises. (2) • Multi-stakeholder workshops. (3) • Civil society representatives invited to participate on steering committee during plan preparation. (4) • Public consultation. (1)	• Summits & visioning exercises. (2) • Multi-stakeholder workshops. (3) • Civil society representatives invited to participate on steering committee during plan preparation. (4)
Implementation Process	• Incremental based on concept plan. (1) • Strategic partnership of government & private sector. (2) • Annual monitoring and reporting. (4)	• Public agency approval based on plan and zoning regulations. (1) • Strategic partnerships between public & private sectors. (2) • Annual monitoring and reporting. (4)	• Public, NGO & private partners commit to implementing specific actions. (2) • Annual monitoring and reporting. (4)
Roles & Skills of Planners	• Expertise in environmental planning (1) • Consensus building & facilitation of collaborative action. (4)	• Expertise in land use planning. (1) • Consensus building & facilitation of collaborative action. (4)	• Expertise in resource management. (1) • Consensus building & facilitation of collaborative action. (4)
Limitations	• Lack of regional plan to set context. • Little consideration of social issues. • Resolution of development options within single jurisdiction. • Lack of management plan for conservation areas.	• Lack of regional plan to set context. • Limited integration with Strategic SD plan.	• Lack of regional plan to set context. • Limited integration with Master Plan. • Limited attention to social issues. • Limited enforcement mechanisms.

Note: bracketed numbers refer to the list of criteria above.

Unfortunately, however, different interpretations were given to sustainable development over the years as, at least in North America, governments dealt with a succession of war, boom, depression, war, and rapid growth. The need to deal with these imperatives coupled with a tendency for increasing specialization in professions, led to an overemphasis on particular aspects of sustainable development, such as sustained economic growth, efficiency or the search for the good life for individual households. In hindsight, the suburbanization process which was accompanied by increasing travel demand and heavy automobile dependency represents a major departure from sustainable development principles. However, it was justified at the time as a way to improve the living environment for families.

Since the 1960s, various parts of the sustainable development paradigm that guided many urban reformers years before, have served as foils to assault a complacent bureaucracy and confront what are portrayed as global economic imperatives. All too often, however, planners were part of the complacent bureaucracy and external agencies with the power to force environmental impact assessments were required. While the paradigm is complex and difficult to define in operational terms, as Campbell suggests it may be used to sharpen debate by providing "a lightening rod to focus conflicting economic, environmental and social interests" (Campbell 1996, 297).

In recent years, the influence of sustainable development principles on the ways we 'see' urban problems, define territorial boundaries and involve multi-stakeholder groups in planning and implementation processes has been dramatic, as evidenced by the review of current plans in Montreal in this paper, an observation that could be repeated for many other jurisdictions. The challenges, however, are great due to the global environmental crisis, increasing disparities between rich and poor, and the sense of exclusion that many feel in the face of a rising meritocracy. The sustainable development paradigm offers a perspective that may point to a more subtle and balanced form of development.

Acknowledgements

Notes

[1] Paradigm: The most commonly accepted definition of paradigm is that of Thomas Kuhn who describes a paradigm as the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (see Kuhn T. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.)

[2] George Bernard Shaw's play "The Doctor's Dilemma" which was staged in 1906

contains this line.

[3] Adopted by OECD Member Governments during the meeting of the Environment Committee at Ministerial level 14th November 1974.

[4] Kevin Lynch uses this term in his book *Good City Form.*

References

Andrews, R. N. 1997. National Environmental Policies: The United States. In *National Environmental Policies: A Comparative Study of Capacity Building*, ed. M. Jaenicke and H.J. Weidner. 1997, 25-31. New York: Springer Verlag.

Berke, P. R. and M. M. Conroy. 2000. Are we planning for Sustainable Development? *Journal of the American Planning Association*, Vol. 66 No. 1 Winter: 21-33.

Campbell, S. 1996. Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association*, Vol. 62 No. 3 Summer: 296-312.

Carson, R. 1962. *Silent Spring.* 40th anniversary ed., 1st Mariner Books ed. Boston: Houghton Mifflin, 2002.

de Gaulejac, V. 2005. *La Société Malade de la Gestion: Idéologie gestionnaire, pouvoir managérial et harcèlement social.* Paris : Editions du Seuil.

Edinburgh City Libraries 2005. http://www.edinburgh.gov.uk/libraries/artsphere/architects/geddes/geddes.html. (Accessed November 25, 2005).

Hall, P. G. 1988. *Cities of Tomorrow: an Intellectual History of Urban Planning and Design in the Twentieth Century.* Edition 3rd ed. Oxford; Malden, MA: Blackwell Publishing.

Hancock, T., R. Labonte and R. Edwards. 1999. Indicators that Count! Measuring Population Health at the Community Level. *Canadian Journal of Public Health.* Nov/Dec. vol. 90: 22-26.

Hey, C. 2003. *EU Environmental Policies: A Short History of the Policy Strategies.* EU Environmental Policy Handbook. Available online: http://www.eeb.org/publication/chapter-3.pdf

Hodge, G. 1986. *Planning Canadian Communities: an Introduction to the Principles, Practice and Participants*, Toronto: Methuen.

Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Random House, 2002.

Lynch, K 1981. *Good City Form*. Cambridge, Massachusetts: The MIT Press,

McHarg, I. 1969. *Design with Nature.* Garden City, New York: Natural History Press.

Meadows, D. H., D. I. Meadows, J. Randers, and W. W. Behrens III. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.

MMDEP. Ministre de Développement durable, Environnement et Parcs,

Québec. http://www.mddep.gouv.qc.ca/developpement/definition.htm#note1. (Accessed November 30, 2005).

NEPA. 1969. *The National Environmental Policy Act of 1969.* http://ceq.eh.doe. gov/nepa/regs/nepa/nepaeqia.htm. (Accessed November 25, 2005).

Oljemark, S. 2002. *Montreal's Green Space Story: Past and Present.* http://cbed. geog.mcgill.ca/AtlasPDFs/MontrealsGreenspaceStory.pdf 2002 (Accessed November 18, 2005).

Porritt, J. 2004. Sustainable Development Past and Present: Patrick Geddes Lecture. *Sustainable Development Corporation.* (Available online: http://sustainableregions.net /uploads/documentbank/150_document.pdf).

Schulze, R. H. 1993. The 20 Year history of the Evolution of Air Pollution Control Legislation in the U.S.A. *Atmospheric Environment*, Vol. 27B, No. 1: 15-22.

SD Gateway. No Date. Introduction to Sustainable Development: Definitions. http://www.sdgateway.net/introsd/definitions.htm#1. (Accessed November 25, 2005).

United Nations Development Programme. 1995. *Human Development Report 1995*, New York: Oxford University Press.

Ville de Montreal. 2002. The Montreal Summit http://www2.ville.montreal. qc.ca/sommet/fr/sommet2002.shtm. (Accessed November 25, 2005).

Ville de Montreal. 2003. *Policy on the Protection and Enhancement of Natural Environments.* http://ville.montreal.qc.ca/pls/portal/docs/page/Portail_Fr/media/ documents/ecoterritoire1fr.pdf (Accessed November 25, 2005).

Ville de Montreal. 2005a. *City of Montreal Master Plan.* http://www2.ville. montreal.qc.ca/plan-urbanisme/. (Accessed November 25, 2005).

Ville de Montreal. 2005b. *Strategic Sustainable Development Plan.* http://www2. ville.montreal.qc.ca/cmsprod/fr/developpement_durable/plan_strategique. (Accessed November 25, 2005).

Whyte, W. 1968. *The Last Landscape.* Garden City New York: Doubleday.

Wolfe, J.M. 1994. Our Common Past: An Interpretation of Canadian Planning History, *Plan Canada* July. 75th Anniversary Edition: 12-13, 16-19, 22-34. Available online at http://www.cip-icu.ca/English/plancanada/wolfe.htm.

Wolfe, J. M. 2002. Reinventing Planning: Canada. *Progress in Planning*, Vol. 57: 207-235.

World Commission on Environment and Development. 1987. *Our Common Future.* Oxford: Oxford University Press.