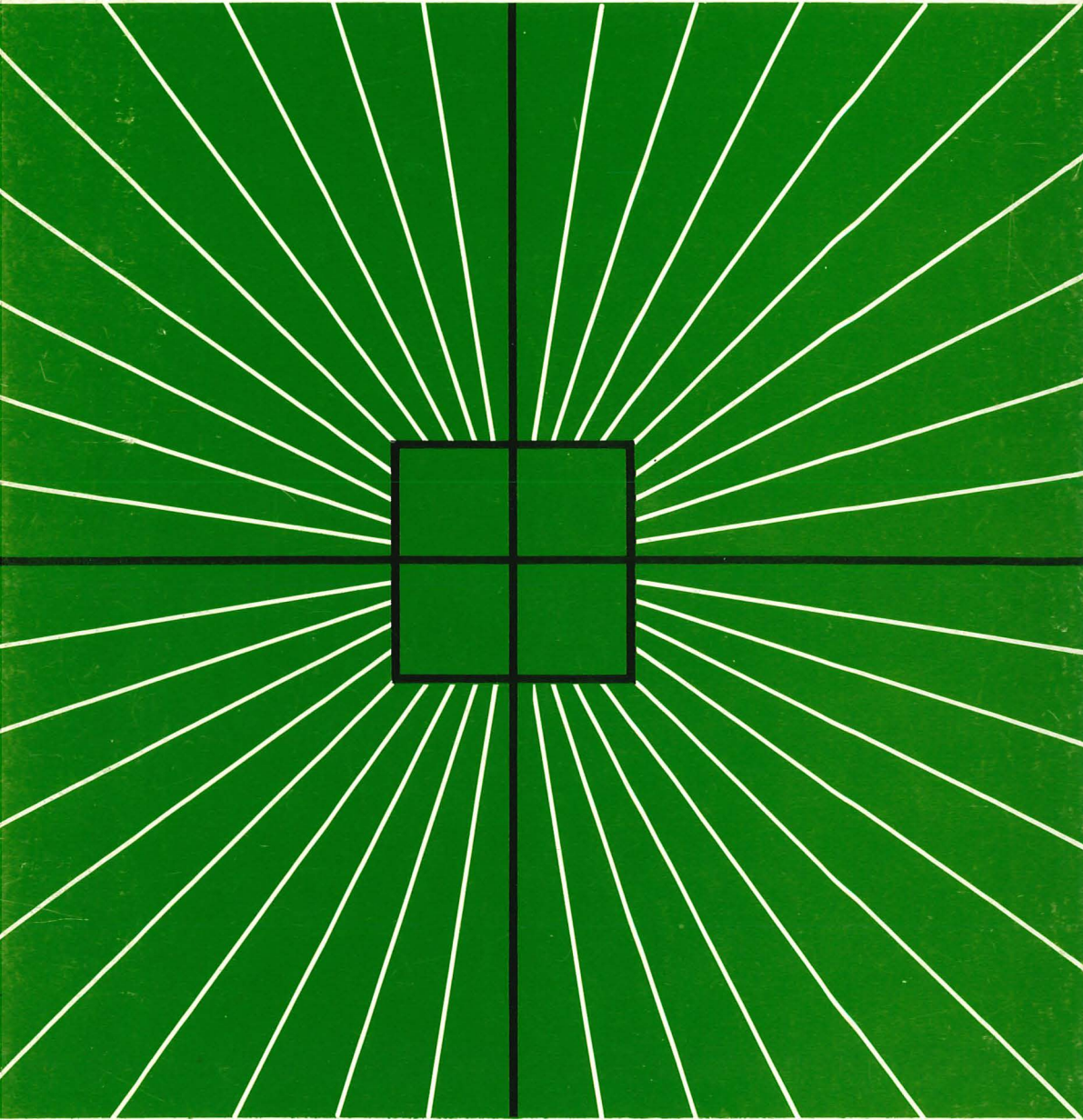


Plan Canada



15/1 March/Mars 1975

Canadian Institute
of Planners

Institute canadien
des urbanistes

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3 years or 9 issues—
Canada \$25.00, outside Canada \$30.00
Single copies including back issues—
TPIC members \$3.00, \$4.00 Others

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EDITORIAL

New Editorial policies commence with this issue of *Plan Canada*. An Editorial Advisory Board has been appointed, which will be consulted about articles specifically, and about general policy. All articles will be refereed, and only those meeting the following criteria will be published:

significance for policy in the urban and regional fields

scholarly significance

appropriateness and clarity of theoretical approach

writing style

relevance to Canada

It is our view that all these criteria can be met by both practitioners and academics. Planning forms a bridge between practice and theory, and needs input from both.

Issues of the journal will contain from time to time *viewpoints*. The current issue contains two articles under this heading—material which strikes out in new directions and which does not derive from the literature, but which does meet our criteria for publication. In addition we have added a section *from the past*, in which we shall include interesting comments and articles written in or about the past. We also propose to review innovative plans, both city plans and regional plans. We urge you to forward a copy of recently completed plans, comprehensive or otherwise, to the review editor.

This issue is a collection of articles revised under the guidance of the previous editor, or recently received and refereed. Our aim is to produce issues regularly and on time. Because the decision by the Executive of the Canadian Institute of Planners with respect to the editors and to financial support was not made until late December, and the available material for publication was not received until early January, this issue is necessarily eclectic. It is our intention that some future issues will be thematic; the next issue on regional planning, and a subsequent issue on planning education.

Each issue of this journal costs, in 1975, about \$4500.00 for 2,000 copies, or \$2.25 per copy. Almost 75% of the issues are sent to members of the Institute, and the remainder go to subscribers. Some revenue is obtained from subscribers (the rates are listed in the front of each issue), and some from advertising. This year, 1975, the Institute is contributing from its funds, under agreement with the editors, \$5800, plus revenue derived from sales and advertising. This amounts to about \$4.50 per member, plus other revenues. For this reason *Plan Canada*

will be restricted to two issues this year, unless other revenue can be found. This is inadequate support. *Plan Canada* is being heavily subsidized by free contribution of time and effort by many individuals, not the least by the editors.

Plan Canada is the window of the Canadian Institute of Planners. It is the only measure of the Institute available to planners in other parts of the world, and in other disciplines and related jobs. *Plan Canada* also provides a forum for the interchange of empirical and theoretical information and understanding that impinges on planning practice. It is not an exchange forum of current planning practice; the *Newsletter* currently performs that role. Nor is it a forum for economists and political theorists to display their intellectual gymnastics. *Plan Canada* should reflect the forefront of the planning profession; it should treat current practice critically, adding to our understanding of the implications of current practice, and suggesting new directions.

To attract articles of a high standard of excellence, a journal must publish only excellent material, and must be produced on a regular basis. In recent history, this journal has been one of sporadic publication, and varying quality. The lack of regularity and guaranteed quality can be attributed at least in part, to lack of Institute support.

If Institute members and subscribers want top quality articles and regular quarterly issues, there is a need for support from the Institute of about \$15,000 per year, or \$10 per member (in addition to subscription, sales and advertising revenue).

ABSTRACTS/RESUMES

Lawrence Haworth, Human Needs in Settlements

The quality of a settlement is measured by its capability of satisfying the needs of those who inhabit it. But human needs aren't 'raw data' discoverable simply through empirical research. Rather, what people specifically 'need' is largely determined by their values. With respect to settlements, two main and sharply contrasting value systems are prevalent. One expresses the ideal of a Work Oriented Settlement, the other that of a Leisure Oriented Settlement.

Each ideal may be seen as built up out of alternative responses to three large contemporary problems: the environmental crisis, the dissolution of community, and the development of labour-saving technologies. Each ideal gives rise to a distinctive ordering of human needs. Both ideals are highly attractive, but their opposition is so extreme that it would be desirable to discover some middle position that synthesizes them.

The ideal of a professionalized society is suggested as such a synthesis and some of the broad planning implications of the ideal are pointed to. Primarily, these concern the professionalization of work and a reinterpretation of the role of 'neighbourhood'.

Ira Robinson The Need to Revive the Planning Core Curriculum

In this article it is argued that a *core* of subjects in the planning curricula ought to be maintained. The author reviews the reasons commonly given for eliminating the core, and considers new job opportunities and roles for planners. He argues that these new trends

Lawrence Haworth, Besoins humains dans les agglomérations

La qualité d'une agglomération se mesure à son aptitude à satisfaire les besoins de ceux qui l'habitent. Mais les besoins humains ne sont pas des 'données brutes' que l'on découvre simplement à la faveur d'une recherche empirique. Au lieu de cela, ce dont les hommes ont un 'besoin' précis dépend largement de leurs valeurs. En ce qui concerne les agglomérations, deux systèmes de valeurs principaux — et très nettement opposés — prédominent. L'un exprime l'idéal d'une 'Agglomération orientée vers le travail', l'autre celui d'une 'Agglomération orientée vers les loisirs.'

Chaque idéal peut paraître fondé sur l'une ou l'autre réponse aux trois grands problèmes actuels: la crise de l'environnement, la dissolution de la communauté et le développement de techniques qui facilitent le travail. Chaque idéal donne naissance à une ordonnance bien distincte des besoins humains. Les deux idéaux sont fort séduisants, mais leur opposition est si extrême qu'il serait souhaitable de découvrir un moyen terme qui en fasse la synthèse.

On suggère l'idéal d'une société de professionnels en tant que synthèse de ce genre et l'on souligne quelques-unes des vastes répercussions dans la conception de cet idéal. Celles-ci concernent essentiellement la transformation du travail en profession et une nouvelle interprétation du rôle de la 'vie de quartier.'

make a required core more urgent. A basic core would consist of substantive materials, theories and propositions, and methods and techniques. This is the formulation for advanced or special training and professional growth.

A suggested pattern of core subjects is illustrated, and a brief description of its various elements is given.

Wong, Hodge, Girvan, Transportation Costs: A Straw Man in Regional Development

This paper asks the question: how do transport costs and rates affect the location of industrial firms between regions? Based on empirical evidence, it is demonstrated that transport costs are not synonymous with distance, knowledge of the role of transport costs in operations of firms is very meagre, and rates can be negotiated between firms and carriers.

Data are presented that show size of shipment, destination *in* a major city, type of goods shipped and competition among carriers are more significant in determining transportation costs than the distance the goods are shipped. Moreover, transport costs are shown to account for only about 5 percent of product cost for most manufacturing firms. And in most provinces, those bodies setting truck freight rates are not involved in industrial location policy deliberations.

Several suggestions are made in regard to taking proper account of transport costs when formulating regional development policy.

P. J. Smith and L. D. McCann, The Sequence of Physical Change in Apartment Redevelopment Areas in Edmonton

Forecasts of change are central to the urban planning process, but these forecasts are only as good as the planner's understanding of the processes of change that are already under way. Traditional zoning, for example, has

Ira Robinson Le besoin de faire revivre un programme qui serve de noyau à la planification

Dans cet article, l'auteur démontre qu'il faudrait conserver un noyau de sujets dans les programmes de planification. L'auteur passe en revue les raisons d'éliminer ce noyau que l'on donne couramment, et il étudie les nouvelles occasions d'emploi et les nouveaux rôles des planificateurs. Il démontre que ces tendances nouvelles rendent plus urgent un noyau obligatoire. Un noyau élémentaire comprendrait des matériaux autonomes, des théories et des propositions, et des méthodes et des techniques. C'est la formulation pour obtenir une formation avancée ou spécialisée et un développement professionnel.

L'auteur y suggère une combinaison de sujets essentiels et il y donne une brève description de ses divers éléments.

Wong, Hodge, Girvan, Frais de transport: Homme de paille dans le développement régional

Cet article pose la question suivante: comment les frais et les tarifs de transport affectent-ils l'établissement des compagnies industrielles entre les régions? En se basant sur des preuves empiriques, il démontre que les frais de transport ne sont pas synonymes de distance, que l'on connaît peu le rôle que jouent les frais de transport dans le fonctionnement des compagnies et que les compagnies industrielles peuvent négocier les tarifs avec les sociétés de transport.

Il présente des données qui montrent que le volume du chargement, sa destination à l'intérieur d'une grande ville, le type de marchandises transportées et la concurrence entre les sociétés de transport ont plus d'importance, quand il s'agit de déterminer les frais de transport, que la distance parcourue. De plus, on y voit que les frais de transport ne constituent que 5% du prix de revient dans la majorité des industries. Et, dans la plupart des provinces, les orga-

relied on crude location and areal assumptions about future land use needs. The inadequacy of this approach shows in many ways, but one which is particularly relevant to the contemporary Canadian city is the problem of zoning residential areas for apartment redevelopment. The conventional response to the pressures of apartment redevelopers is the blanket zoning of large tracts of inner-city housing. The theoretical justification, if any is called upon, is found in the concept of the neighbourhood life cycle, with its notion that each neighbourhood experiences a sequence of growth, decline and renewal. Redevelopment is thus seen as the inevitable and desirable outcome of deterioration. From a detailed case study in Edmonton, however, it appeared that the relationship between deterioration and redevelopment is by no means so direct. Redevelopment is not attracted to certain neighbourhoods *because* they are deteriorated (as life cycle theory suggests), but because their deterioration has not progressed very far. The ethical problem for planners is very clear: should planning devices, such as redevelopment zoning, be used to foster change in residential areas where physical health and safety are not at issue and the population is stable?

Eugene Mattyasovszky, Key Principles in Planning for Environmental Quality

From the realm of ecology the planner can use three key principles in assessing environmental impact of planning actions. These principles are: *stability*, the capacity of the environment to maintain or re-establish itself in the face of disturbance; *productivity*, the amount of organic matter in an ecosystem necessary to sustain life processes; and *cyclicality*, the proper circulation of necessary nutrients in ecosystems.

Variety, complexity and maturity are connected with stability. Human use of land often tends toward simple systems that are inherently vulnerable. While technically efficient in their use of space, large, one-variable systems lead to more intervention and decreased capacity for the ecosystem to cope with injuries. The regional planner should build in as much stability as possible. Natural states that are little-disturbed usually

nismes qui fixent les tarifs de transport routier ne participent pas aux délibérations des politiques régissant l'établissement des industries.

Il fait plusieurs suggestions en ce qui concerne la prise en considération des frais de transport lorsque l'on formule une politique de développement régional.

P. J. Smith and L. D. McCann, Ordre dans lequel se produit le changement physique dans les zones de réaffectation d'appartements à Edmonton

Prévoir le changement est au centre du processus de planification urbaine, mais ces prévisions ne valent que ce que vaut la façon dont le planificateur comprend les processus de changement déjà en cours. Le zonage traditionnel, par exemple, a dépendu de grossières erreurs de location et d'emplacement quant à l'utilisation future du terrain. L'imperfection de cette manière d'aborder le problème est évidente à bien des égards, mais ce qui intéresse tout particulièrement la ville canadienne d'aujourd'hui, c'est la question de la sub-division des quartiers résidentiels en zones réaffectées à la construction d'appartements. La réponse normale aux pressions des constructeurs d'appartements consiste à englober en une zone de vastes étendues d'habitation au coeur des villes. La justification théorique, si l'on en invoque une, se trouve dans le concept du cycle de la vie des quartiers, qui veut que chaque quartier fasse l'expérience, successivement, de la croissance, du déclin et du renouveau. La réaffectation apparaît donc comme la conséquence inévitable et souhaitable de la détérioration. Cependant, l'étude détaillée d'un cas particulier à Edmonton a montré que le rapport entre la détérioration et la réaffectation n'est en aucune façon aussi direct. La réaffectation n'est pas attirée par certains quartiers parce qu'ils sont détériorés (comme le suggère la théorie du cycle de la vie) mais parce que leur détérioration n'est pas très avancée. Le problème moral qui se pose aux planificateurs est très clair:

comprise enough variety to provide stability.

Land uses can be categorized to reflect the needs of ecosystems development. Following upon Odum's 'compartmentalization' of land uses, according to their vulnerability, there are productive/unstable uses, compromise/partially stable uses, protective/stable uses, and non-vital/urban uses. These categories can become a counterpart to other land use data by recording the effect of use on stability. Land use plans can recognize these needs and distribute or disperse land uses to maintain ecosystems. Control measures connected with forms and location of cultivation, changes in vegetation cover, use of herbicides, change in land use and intensity of land use can be derived from the basic principles.

devrait-on utiliser des moyens de planification, tels que la répartition en zones de réaffectation, pour stimuler le changement dans des quartiers résidentiels où la santé et la sécurité physiques des habitants ne sont pas en jeu et où la population est stable?

Eugene Mattyasovszky, Principes clefs de la planification en vue de la qualité de l'environne

Du domaine de l'écologie, le planificateur peut utiliser trois principes clefs pour évaluer l'impact de la planification sur l'environnement. Ces principes sont les suivants: la *stabilité*, aptitude de l'environnement à se maintenir ou se reconstituer en présence d'éléments perturbateurs, la *productivité*, quantité de matière organique, dans un système écologique, nécessaire pour entretenir les processus vitaux; et l'*activité cyclique*, circulation adéquate des substances nutritives nécessaires dans les systèmes écologiques.

Variété, complexité et maturité sont liées à la stabilité. L'utilisation de la terre par l'homme tend souvent à créer des systèmes simples qui en eux-mêmes sont vulnérables. Tout en utilisant l'espace avec efficacité d'un point de vue technique, de vastes systèmes à une seule variable aboutissent à une intervention accrue et réduisent l'aptitude du système écologique à se remettre de ses blessures. Le planificateur régional devrait incorporer autant de stabilité que

possible. Les conditions naturelles qui sont peu dérangées comprennent, en général, assez de variété pour assurer la stabilité.

On peut diviser les utilisations des terres en catégories qui reflètent les besoins de développer les systèmes écologiques. En continuant dans la même direction que le 'compartimentage' de Odum sur l'utilisation des terres selon leur vulnérabilité, on trouve des utilisations productives/instables, des utilisations de compromis/en partie stables, des utilisations protectrices/stables et des utilisations non-vitales/urbaines. Ces catégories peuvent servir de contrepartie à d'autres données sur l'utilisation des terres si l'on enregistre l'effet de l'utilisation sur la stabilité. Les plans d'utilisation des terres peuvent reconnaître ces besoins et répartir ou disperser les utilisations des terres pour préserver les systèmes écologiques. De ces principes fondamentaux on peut tirer des mesures de contrôle liées aux types de cultures et à leur emplacement, aux changements dans la couverture végétale, à l'utilisation de produits chimiques, à la modification de l'utilisation des terres et de l'intensité de cette utilisation.

VIEWPOINTS

Human Needs in Settlements

Lawrence Haworth

I

There are two large sets of organizing ideas that people deploy in reasoning about human needs in settlements. I want to clarify these two sets of ideas, and then to comment on the attitude toward human needs in settlements that is suggested by pitting each against the other. The two sets of ideas form, in effect, competing models of a future city, to one or the other of which most people who address themselves to urban problems are committed. In explicating these models, I shall be translating views that usually exist as dimly understood background assumptions into explicitly held theories. One of the models is that of a Work Oriented Society, the other, that of a Leisure Oriented Society.

The models of a Work Oriented and a Leisure Oriented society are built around typical responses to three large issues of the present day. Each issue is the locus of a set of vexing problems created by our failure to control highly developed technology.

1 First, there is the environmental crisis, a convenient way of referring to a host of problems that fall under one or another of three headings: depletion of resources, pollution, and threats to the delicate balances that maintain ecological communities, with such consequences as the extinction or near extinction of entire species of living things. Though we may differ regarding the urgency of one or another dimension of the environmental crisis, so that some may agree with John Maddox that there are Apostles of Doom loose in the streets while others may regard the *Limits to Growth* and *Blueprint for Survival* as, if anything, too complacent, nevertheless everyone accepts that there is a genuine crisis. But two markedly different opinions are held regarding the sort of action called for.

Some, Barry Commoner, for example, contend that we must *humanize* our technology. This is to say that what lies behind the problems that form the environmental crisis is failure to foresee the ramifications of new technologies, failure to anticipate their impact on the quality of life, and that the appropriate response therefore is to be more careful, to adapt our applications of technology so that humanly significant effects *are* taken into account. On this view, the enemy isn't technology *per se*, but shortsightedness. Others, however, the authors of *Blueprint for Survival*, for example, sense that technology is indeed the enemy, and hold that rather than try to convert it into a friend we should simply cut back on it and adopt modes of collective life that depend less on the wonders technology offers. The first attitude is that we should strive to humanize technology, the second, that we should drastically curtail our commitment to it. The first attitude fits naturally into the model of a Leisure Oriented society, the second into that of a Work Oriented society. Briefly, the reason is this: a prime objective in a Work Oriented society must be to humanize the workplace, and this project is at odds with extensive dependence on advanced technology, since the latter aims at routinization of productive processes and the squeezing out of risk of error arising from the human input to those processes. From the other side, a prime objective in a Leisure Oriented society must be to minimize the amount of human labour employed in producing the necessities of life, and this is precisely what technology is fitted for accomplishing.

2 The second large issue is that of the dissolution of community. For centuries now, in the developed countries of the west, the small self-contained settlements of the past,

traditional villages, with their solidarity and insularity, and their parallel social forms in urbanized areas, small enclaves in traditional neighborhoods where generation on generation of denizens found more or less complete rounds of life in face to face contact with one another, have been under attack. This is a familiar story. It is mentioned here only to bring into prominence the implications for our view of human needs in settlements of two sharply contrasting responses people take to the problem. One fits comfortably in the model of a Leisure Oriented society; the other, equally comfortably in the model of a Work Oriented society.

Some, motivated perhaps by nostalgia for a lost community of their childhood, respond practically to the threatening dissolution of community by searching out ways of restoring it. In an urban context this search leads planners to endorse versions of the so-called 'neighborhood unit plan'—an attempt to shore up traditional neighborhoods, to decentralize urban facilities and services so that they operate closer to the neighborhood, and to reinforce or create the citizens' sense of identity with the neighborhood and with one another in the neighborhood. In sum, in the hands of the more exuberant people of this persuasion, the idea is to introduce into the urban environment, under conditions controlled by highly advanced technology, latter-day replicas of those village communities we read about in the novels of George Eliot.

The other response to the dissolution of community is to welcome it and to embrace without reluctance the individualized life styles—involving especially the focussing of life on private rather than public spheres—that form the positive aspect of the development.

For some these are the only two intelligible responses: restore *spatially-defined* community, or endorse individualized life styles characteristic of contemporary highly urbanized areas. The connection between attachment to the traditional ideal of spatially-defined community and the model of a Work Oriented society is fairly transparent. In such communities, the principal activities are those we identify as work, and work tends

not to be an isolated affair but is continuous with the rest of life. Thus, in the traditional English village community, work was principally agricultural in character, and no clear lines were drawn between family life or community life in general and life in the fields. The children's education in considerable degree took place in the fields, not in specialized schools, and the religious life of the community was similarly integrated with agriculture rather than split off as a distinct concern. From the other side, there is a clear connection between satisfaction with the individualized life styles characteristic of the urban environments that have lost the flavour of spatially-defined community, and interest in focussing life on leisure. The homogenous village community stands out as a paradigm of a habitat that centers life on work; the modern city by contrast organizes work as a means and orders affairs so that the primary meanings are sought in leisure activities.

3 The third large issue is one created by development of technologies that improve productivity—that is, that permit the same quantity of product with the application of less human labour. Bringing these technologies to bear in productive activities simultaneously creates a danger and introduces an exciting opportunity. The danger is that work and the workplace will become dehumanized, that the earlier condition, of life for great numbers of people being largely taken up with backbreaking labour—work as *toil*—will be replaced in technologically advanced countries by one in which work is just *boring*—or, where the commodities produced are of low quality and answer to no genuine human needs but merely satisfy a demand artificially induced by advertisers, rather than boring, the work will seem *silly*. That's the danger. The opportunity is that through intensive application of labour-saving technologies we could reach a condition where it is scarcely necessary for anyone to work—where for the most part workers could be replaced by machines or electronic gadgets and most people could have opened up for them great stretches of leisure time. Nor is this just pie-in-the-sky speculation. The opportunity

has already been realized to a considerable degree: the workday and work year are becoming shorter and many people live interstitial lives somehow eked out without working at all—street people, people on welfare, university students, and the like.

To date, the leisure producing potentiality of labour-saving technology has been largely defeated for the economy as a whole because as the technology has been applied demand for the product of industry has escalated—leaving us with what is sometimes called the consumption-oriented, and therefore the growth-oriented society.

It doesn't much matter (except in the short run) whether anyone wants to defend growth and the consumption-oriented society, since they are impossible to sustain. There are limits to growth and to consumption as well, per capita limits and gross limits. As these limits are reached, the current escalation of consumption which counteracts the leisure producing potentiality of labour-saving technology must level off. This is a very mild prediction, but enough to establish that one of our looming problems, a not altogether unwelcome one, will be the need to choose between two responses to the threat and opportunity I have described. We can decide for leisure or we can decide for work. The latter choice would imply our adopting as a basic goal that of humanizing work and the workplace. The former would point us toward maximizing free time through wholesale adoption of labour-saving devices and toward improving the likelihood of people finding in their free time those larger meanings that convince them their lives are worth living.

This doesn't mean that we must decide for either one to the total exclusion of the other. We can compromise. We can say, let's humanize the workplace, but also maximize free time. But the goals aren't really compatible, so it would be wise to determine a priority. Humanizing work involves imposing a constraint on the technology, and this may be expected to cut into its labour-saving character, which would in turn inhibit the potentiality of the technology to open up large stretches of leisure time for the society as a whole. To the extent we endorse the idea

of a Leisure Oriented society, we are bound to resist many suggestions for making jobs more interesting—since they threaten to decrease productivity. Of course this isn't always so; but it is often so. Consequently we shouldn't naively assume that we can confidently embrace these two very attractive suggestions—humanize work and maximize leisure—without deciding which should be given priority, which assigned a subordinate role.

To summarize: the two large sets of ideas mentioned at the beginning form sharply contrasting images of the future shape of the city. One image is of a Work Oriented settlement. Primary features of the image are these: we should back off from our commitment to technology, in the interest of minimizing environmental problems. We should strive to restore and rebuild spatially-defined communities, principally, in an urbanized environment, by focussing on neighborhoods, neighborhood identification, and the incorporation in neighborhoods of sufficient facilities and opportunities so that for the most part, people may live their days within their neighborhood and in face to face contact with their neighbors. And, finally, we should order our lives around work, seek above all in work the central meanings of our lives, and in the interest of finding meaning there strive to redirect new technologies so that they contribute to humanization, rather than dehumanization of the workplace—even when this involves economic inefficiency.

The second image is of a Leisure Oriented settlement. According to it, rather than back off from our commitment to technology we should seek to control its impact on the environment by becoming more sensitive to indirect effects of technological innovations—a move that might well lead to greater rather than less influence of technology on our lives. This image is sympathetic to individualized life styles and regards as archaic the attachment to spatially-defined community, as manifested in attempts to introduce into or to shore up self-contained neighborhoods in intensively urbanized environments. Finally, it envisages an ideal future when the need to work has largely vanished so that for most people life is mainly

free time, leisure, and the meaning of their lives is a function of the way in which they occupy that time.

In contrasting work and leisure in this way, it is important to keep in the foreground two features of work as it occurs in developed countries. First, the content of work is largely defined by the employer, not by the worker himself. Second, work involves dependence in two directions: the worker is dependent on the work as a source of income; and society is dependent on it as a source of needed goods. (In less developed countries these features aren't prominent: agricultural work is often self-defined; and it is not the society but the farm worker himself who is dependent on his work and its product.) Leisure, as free time, means the time when we are our own person, *our* time. We fix the character of the activity with which we fill the time. And, unlike work, free time lacks the feature of dependence; society at large doesn't have a stake in how we occupy the time, and we aren't constrained by need to earn income to occupy it in any particular way. Consequently, as work and leisure are ordinarily understood each is the strict opposite of the other, so that there is a profound difference between idealizing a Work Oriented society and idealizing one that focusses on leisure. To a singleminded devotee of the Work Oriented society, the use of leisure is that suggested by the literal meaning of 'recreation': time to restore energy so that one can resume work; while, to the singleminded devotee of a Leisure Oriented society, the use of work is that through it we finance leisure. The two views are opposites in that what the one identifies as a means the other identifies as an end, and vice versa.

II

Obviously, we want and need work; and we want and need leisure as well. But we require an understanding of each that makes them genuinely compatible. This involves that we should have a view of what each would be like if it were not a mere means to the other but were intrinsically interesting, a source of the kinds of meaning and significance that gives a person the sense that his life has a *point*.

When work and leisure take that form, the ground for supposing that either should be subordinated to the other is removed. The key to an adequate characterization of human needs in settlements is given by the principle that people should find there a setting and structure that assure real opportunity for everyone to find both meaningful work and deeply satisfying leisure. Whether that's anything more than a platitude depends on whether we can give any institutional and aesthetic content to it; that is, identify some of the changes in social practices and some of the features of an urban aesthetic suggested by the principle.

I don't think the idea of 'humanizing' work is the appropriate one to adopt in this connection. This is the main reason why I would reject the image of a Work Oriented society. Talk about humanizing work suggests that the main problem is to make work interesting for the worker, a cosmetic approach. We ought to set our sights higher and reach out for more significant results. If we do, two main goals should be pursued: autonomy and the worth or importance of that which the work is intended to produce. That is, for a person to sense that his occupation forms a major source of meaning in his life, he must be autonomous in carrying on the occupation. There are two main reasons for the absence of autonomy in work. First, the character of the work is defined in advance, in our country usually by a private corporation, in many other countries by a state agency responsible for that type of work. Second, technology itself, in the sense for which Jacques Ellul used the term 'technique', often replaces the need or occasion for judgement on the part of the worker.

The second goal is that of assuring that the product has worth and that the worker can perceive that it has.

Most people have some one line of activity, an occupation, which should serve as a source of personal *dignity*. The two necessary conditions for this are, first, that the person should be *active* in that line of activity—that his judgment, his decisions, should determine how it is to be carried on; and, second, that he should sense that the activity is indeed worthy, so that it matters whether he exer-

cises his responsibility wisely.

The goal then should be the *dignification* of work. Once the obvious vital needs are met, and social injustices are dealt with, top priority in an urbanized environment should go to the project of dignifying work, and this by enhancing its autonomy and worth. In those occupations, such as planning, in which there is a strong desire to see the occupation established as an assured *profession*, the aspiration to professionalize the work is precisely the one to which I am here attaching the term 'dignification'. Stated in its grandest terms, the idea is to professionalize all occupations, or as many as possible, and then to turn over to the machines and electronic gadgets those lines of work that either resist professionalization or that people don't volunteer to take up in this manner. It would be a serious flaw in any economic or political system that it is incapable of directing highly developed technology toward this goal.

There is tension between the notion of dignifying work and the traditional ideal of spatially-defined community, whether in the urban form of *neighborhood* or the rural form of *village*. Under modern conditions, occupations are specialized and typically require training, via apprenticeship or formal education, by which the unique competence needed to carry on the occupation is gained. When people with such competence relate with their occupation in the way suggested by saying they practice it in a professional manner—by identifying with it and finding the central meanings of their lives in the activities it involves—their primary allegiance is bound to tie them to their occupation and to those, their colleagues, who share their commitment. As a result, neighborhood cannot mean for them the locus of intense, spatially-defined community. *The community of colleagues supplants that of neighbors.*

What then should be the role of neighborhood in circumstances where it isn't a major focus of community? Among people who have a deep sense of professional commitment and for whom 'community' is primarily a relationship with colleagues, neighborhoods serve as domains for leisure. It would make much more sense to try to make neighborhoods

work in these terms, as domains for leisure, rather than to attempt to breathe new life into dead or dying social forms. But for this to succeed we require a new understanding of leisure.

With us, leisure means free time, the time left over after work; for the ancient Greeks its use was primarily adverbial: being *leisurely*; that is, not sacrificing the present to the future, not making what you are doing at any given moment a mere means to some future goal. Being leisurely or at leisure meant that the activities one is caught up in, whatever they may be, would be carried on for their own sake, as being intrinsically interesting. Thus, one would savour them as they are carried on and would live in the present without constantly rushing on to other things, leaning as it were into the future. Dignified work or professional activity can and in the best instances will be leisurely. But not all facets of a person's character are likely to find expression in his occupation. Consequently, our image of a city would be stunted if we contemplated an environment wholly given over to work, however exciting and creative we managed to make it.

If the urban environment is to be a habitat for leisure in the sense of *leisureliness*, what design principles will it incorporate? One key to leisure is spontaneity. It is above all essential for leisurely activity that it be prompted by spontaneously issuing impulses and not have imposed on it from the outside a structure to which it conforms. This means that the urban environment for leisure must be flexible and open: the setting must open up opportunities for action and leave open for personal decision whether these will be followed up. Flexibility is generally sought in either of two ways, one of which seems especially appropriate. Typically, in urban settings a wide range of opportunities is presented in the form of highly structured alternatives among which one is invited to make a choice. Each alternative is in effect a prepackaged plan. It is not unlike thumbing through a travel agent's brochure that lists numerous package tours. You can take the one you want, but once that choice is made there aren't many other choices to make.

This defeats leisure. Or, as it might be put, it yields a non-leisurely way of occupying leisure time. The reason is that we are cast in a passive role. There is a difference between *savouring* the present and being a sponge, a difference between being 'at leisure' and 'relaxing'.

The other manner of achieving flexibility is by leaving the environment relatively unstructured, open but ready for whatever specific uses the person himself dreams up. Pedestrian malls often work in this manner. We are inclined to think of them in precisely the wrong way, as the result of a drive toward further differentiating and segregating urban functions, in this case, foot from vehicular traffic. But the lightness and unshackled feeling conveyed by those malls that seem really to work is a result of the designer having hacked away, perhaps without knowing it, some of the structure people usually confront in the city; he has opened up space that lacks heavy clues concerning how it should be used.

I first suggested that the principal role of neighborhood should be that of forming the immediate, close-to-hand environment for leisure; now I have added that the dominant theme in neighborhood design should be flexibility in the sense of adaptability to a

wide range of uses defined not by the designer but by the neighborhood's inhabitants. A very distinctive aesthetic is implied by these comments, with reference both to buildings and to townplan. We may think of the difference between traditional Japanese domestic architecture, with provision of much undefined space and of ready means of changing even the dimensions of the space, and western domestic architecture, with a clear labelling of what each area is for, what it is appropriate to do there. Note the parallel between the western style and the travel agent's brochure of package tours.

To conclude: this notion of flexibility has an important implication for the theme of human needs in settlements. It is dangerous to carry an inquiry into what these needs are down to a level of concrete detail, since this may prompt the image of an environment in which each need is specifically catered to, yielding a distinct facility that answers to each of them. To approach the problem this way would be to adopt the stance of the person thumbing the tour book. He is looking for the tour that most nearly meets all of his requirements. If I am right about leisure, this is self-defeating when applied to cities. I also believe that it's not the best way to travel.

The Need to Revive the Planning Core Curriculum*

Ira M. Robinson

Planning schools in North America in recent years have denigrated the importance of the required common core in their curricula, and in some instances have eliminated it altogether. I believe we ought seriously to consider reviving the planning core. Those who oppose this position argue against a common planning core primarily because: (1) there is a growing trend toward specialization in planning; and (2) there is little agreement on exactly what the content of an appropriate core should include.

While I recognize the need to serve the growing diversity of skills and interests in planning, I believe it is also vital that training aimed at developing such diversity must be based upon a core of planning knowledge and skills that is common to all planners. This will allow for the fundamental cohesiveness of the profession, an understanding of the broader context within which the various planning concentrations operate, and a measure of flexibility with respect to career development, for all students irrespective of the particular specialty or the concentration they wish to pursue. Moreover, because we cannot agree precisely on the appropriate content of the planning core should not mean that we reject the notion altogether; this is like throwing the baby out with the bath water. Indeed, I believe that the development of a sound planning core in planning schools is perhaps the single most important challenge facing the field of planning education at the present time.

Denigration of the Planning Core

These, I think, are some of the major reasons why planning schools have either denigrated or completely eliminated the required core in their curricula:

First, and perhaps the most important reason, is the change in the types of job opportunities available and the roles performed by planners, resulting from a change in the array of "clients" for whom planners work and from a broadening of the substantive concern of the planning profession itself. These new opportunities and roles call for new skills, methods and theories.

In the past, planners traditionally were employed by "central" planning agencies or by private consultants working under contract for these agencies. Today, planners are also finding employment in: (a) environmental planning and environmental control agencies — at all levels of government; (b) citizen-based neighbourhood organizations; (c) new forms of local government, e.g., area-wide regional governments; (d) specialized public agencies, at all levels of government, concerned with particular functions such as highways, water resources, human resources, health, urban renewal, education, etc.; (e) large private developers and builders. Consequently, planners are finding themselves performing new roles, e.g., social planner, advocate planner, environmental planner, legal planner, etc. If this trend continues, as some persons forecast, the demand for planners from these new clients will far outstrip the demand from the traditional centralized planning agencies.

Second, is the demand by planning agencies and functional departments for persons with special knowledge, skills and competence in areas related to planning, e.g., urban economists, statisticians, systems analysts,

*This paper is based on a presentation to the 1974 Annual Meeting of the Association of Planning Programs in Canadian Universities, Kingston, Ontario, October 1974. The opinions expressed in this paper are solely the responsibility of the author, and in no way reflect existing thinking or practices in the Faculty of Environmental Design, The University of Calgary.

computer programmers, etc.

Third, is the demand for new multi- and inter-disciplinary approaches to planning, and new innovative techniques to deal with the complex problems planners now face (e.g., integration of physical planning with socio-economic and financial planning).

Until recently, most planning schools sought to train *the* planner for work in traditional central planning agencies. A key element of such training was a set of required planning courses which aimed (not always successfully, I should add) to deal with basic theory, principles and methods. Now, confronted with these new trends in planning practice, the schools face a dilemma as to how to resolve the potential conflicts between a matured tradition of planning education and the new demands which have developed after twenty years. Most schools have found it difficult to accommodate both traditions at the same time. Some have decided to continue the older tradition. Many more have gone all the way in the other direction, emphasizing the training of specialists — for new jobs, new roles, and fulfilling new technical needs, and along the way, dropping the required planning core curriculum altogether.

The rationale of schools dropping the required planning core appears to be the following: first, they argue that if the types of jobs, roles and techniques of planners are now so different and so specialized, there is no common knowledge or skills applicable to all these different planners, and therefore planning training must be tailored to their special needs. Second, the concept of a common core curriculum has traditionally been associated with the generalist, comprehensive planner, and since we no longer need to train such planners, we accordingly need no longer require a common set of planning courses. Third, since the training of specialist-type planners is time-consuming in itself, there isn't sufficient time in a student's schedule for him/her to also take general, common courses.

These arguments for dropping the required planning core were given added support by other educational changes taking place at the same time. There has been the trend in many

other fields or disciplines to lower the number of required courses if not drop them altogether. Another, more recent phenomenon noted by a great number of educators is that students (especially in professional schools) appear to be job- and vocation-oriented in their outlook, and are impatient with subjects such as theory, history, and philosophy. They demand specific skills that will make them useable and marketable in the job world immediately upon graduation. Since the concept of a core curriculum, generally speaking, deals with broad theory, principles, concepts and methods, and is not oriented to specific planning problems, skills, or knowledge, these job-oriented students tend to oppose such required courses.

I sympathize with all of these arguments, but don't find them sufficiently persuasive to justify dropping the required common core as part of a planning curriculum. Indeed, I would argue that the new trends in planning practice make a required common core even more urgent.

Reasons for Reviving the Planning Core

One of the arguments used by certain planning schools which have diminished or completely eliminated the required core curriculum is that students can only learn planning in a problem-solving context. Accordingly, these schools stress real-world research projects, field experiences, studios and workshops, as the major learning devices. Although strongly in favour of using such learning devices, I would add that students cannot test the validity of certain propositions merely through problem-solving experiences. They must first be provided with the basic materials, or intellectual building blocks to work with — basic substantive materials, theories and propositions, and methods or techniques that others have worked out that the students can build upon. Such basic theories, concepts, and methods or techniques can only be provided in a common core programme.

A well-conceived and designed common core can serve other purposes as well. It can acquaint students with the primary materials and primary sources of planning, including the history of the field. I am appalled at the

number of students whom I have met from planning schools where the core has been denigrated or dropped, who are not familiar with the persons (let alone their specific writings) who (I think all of us would agree) are the 'great names' in planning. Just as we have come to expect all economic students, regardless of their specific fields of concentration, to be familiar with names such as Marx, Schumpeter, and Milton Freedman, so, too, we have a right to expect our colleagues to respond knowingly when the names Mumford, Howard, Blumenfeld, and Meyerson—to name but a few—are mentioned.

A core programme can help all students to come to understand the various kinds of inter-relationships encountered in planning — among problems, subject matter, and the contributions of different specialists. It can also help to develop in all students certain basic professional attitudes and approaches to planning, such as a sense of social responsibility; an appreciation of both the variation and continuity in man's value system; a basic humility as to what anyone can know and any one group can accomplish, and the need to turn to others for assistance; an historical perspective, yet an inquisitiveness to explore new ideas; and a belief in the ability of man to alter his environment within certain limits — to name but a few attitudes and approaches that are essential marks of a professional planner.

In short, the core programme can provide a foundation on which advanced or specialized training, as well as continual life-time planning education, can be built.

If it is well conceived and designed in terms of fundamentals, a common planning core can serve the educational needs of planners almost equally well whatever their career lines — whether they will work for the central planning agency or for a functional department, whether they will come to serve mainly as consultants to private construction or development corporations or other private units—all of them must be well trained in the basic principles and methods or techniques. All of them must have a common language since they will make continual work contacts, and must understand each other's problems,

approaches and techniques; this is particularly important since in actual practice planners tend to move rather frequently from one type of planning position to another. Since we cannot prepare planners specialized for every conceivable kind of planning unit or requirement and because we cannot anticipate many new kinds of planners that will be needed in the future, it would appear most sensible to provide training in broad, generic planning to produce effective planners for a wide range of situations.

All of these should be able to relate themselves effectively to the broader social and intellectual context within which they are functioning. All of them should share the responsibilities of the profession, which, among other things, includes adhering to a code of ethics and setting of high standards for both research and professional writing. Ideally, they should also share certain attitudes, particularly as regards public responsibility and service. These and similar elements which tend to put the stamp on the stature and the status of a profession, can only be acquired through a common core curriculum.

A Suggested Planning Core - Key Elements

In order to explain more fully what I mean in referring to basic theory, principles, and methods or techniques, I have set down, in the attached table, some reasonably concrete suggestions concerning the possible content of such a core. It cannot be stressed too much that this is not meant to be a specific proposal. The listing is intended only to highlight what I consider to be some key features of a planning core, and is purely illustrative. Several points should be noted at the outset:

1 The headings are meant to represent groups of subjects; they are closely inter-related, and planning core courses would not necessarily be organized along these lines.

2 In any case, however organized, they should be integrated courses, and not a series of 'survey' courses or any other potpourri of courses. A sound planning core cannot be provided by exposing students to bits and

pieces of many subjects, given in different departments and schools. These are meant to be subject areas taught by the planning faculty.

3 A planning core, which would include subject areas similar to those I have listed, could be adequately dealt with during the first year of a student's programme of study. I am not suggesting by any means that a uniform system of core courses should be established at all planning schools—nor would it be desirable that this be done. There are obviously many ways by which students can come to understand and learn to use basic theory, principles and methods or techniques, and it is desirable that various schools experiment

with different approaches to the development of a core programme—both as to content and learning devices. At the same time, it would also be desirable that methods of evaluation be devised so that the elements of strength and weakness in the core programme of each school be known and improvements made over time.

One of the important challenges of the planning schools in the years ahead is to develop a really sound core. Indeed, this in itself is an important, fruitful area of research; that is, the working out of basic principles and methods so as to advance the planning field.

TABLE 1 Illustrative Content of a Core Planning Curriculum

CORE PLANNING CURRICULUM		
<i>I Foundation Knowledge</i>	<i>II Basic Methods & Techniques</i>	<i>III Problem Solving Experiences</i>
A. Urbanism, the Urbanization Process & Urban Problems	A. Analytical Models & Tools	A. Case Studies & Hypothetical Problems
B. The Planning Process	B. Design Methods & Techniques	B. Student Workshops/Studios
C. Physical-Spatial & Environmental Elements in Planning	C. Legal & Administrative Tools	C. Research Projects
D. Socio-Economic Elements of Planning	D. Synthesis-Conclusion	
	E. Communication Skills	

TABLE 2 Detail of FOUNDATION KNOWLEDGE Component of an Illustrative Core Planning Curriculum¹

<p>I FOUNDATION KNOWLEDGE</p> <p><i>A. Urbanism, the Urbanization Process & Urban Problems</i></p> <ul style="list-style-type: none"> — Historical development of cities, including the factors that have determined their location, form, growth, or renewal — The role of cities in development of regions, provinces & the nation — Population growth & the pattern of movements in, into, & out of cities — Various theories & models, especially those developed in the social sciences, for analyzing & viewing the growth & development of cities & their component parts — The structure & form of cities & metropolitan areas — Typical human problems found in urban areas & caused by or affected by the urbanization process; distinction between problems <i>of</i> cities & problems <i>in</i> cities — Past & current efforts to plan & control the environment; differing goals & objectives the role of various power groups — The way man has organized to influence the environment; legislation instituted to deal with the problems of the environment, including the type of tools used — History & Development of the planning profession, & the nature of 'professionalism' — Lessons from the efforts of the past & present to plan & control the environment — Utopian concepts & Utopian thinking; alternative futures for cities & urban areas <p><i>B. The Planning Process</i></p> <ul style="list-style-type: none"> — Stages in the planning process, societal context, e.g., the role of the public, the legislature, the executive, planning agencies, & line departments in establishing goals, choosing among alternatives, evaluating alternatives, feedback & monitoring — The place of planning in the decision-making process, both private & public, including staff & line functions; policy formation & administration — The major decision-making groups affecting development of urban communities; their characteristics & how they are & can be influenced, e.g., private builders, sub-dividers, developers & bankers, private industrialists, etc. — Organization & administration of a public planning agency, alternative possibilities, & relation to other municipal government departments — Planning in private agencies & companies concerned with urban development <p><i>C. Physical-Spatial & Environmental Elements of Planning 2</i></p> <ul style="list-style-type: none"> — The nature of the physical environment of cities & urban areas; the role of natural resources; physical factors in location, form, land use, density & growth; land, water & other requirements of urban uses as compared to agricultural, recreational & other uses potentiality for changes in the physical features & physical limitations in cities & urban areas; the energy demands of cities & urban areas; the criteria of environmental quality personal perceptions of the quality of the urban environment; ecological principles & concepts — Theories of city form — Patterns of space use; the major determinants of land use in urban areas & the principles of planning for land use; estimating future requirements & effective demands of different population groups — Key principles of transportation & movement, both intra-urban & inter-urban transportation as a factor in urban growth & urban structure; trade-offs between different modes of transportation — Housing in its various forms; past, current & new standards; the role of technology

TABLE 2 [cont'd.]

<p>I FOUNDATION KNOWLEDGE [cont'd.]</p> <ul style="list-style-type: none">— Utilities & facilities; their inter-relationships, location & design, criteria of a 'well-serviced' community—Aesthetics: basic elements, changing popular tastes, social role of the designer & planner; the nature of creativity <p><i>D. Socio-Economic Elements of Planning</i> ³</p> <ul style="list-style-type: none">— Urban values, values of society & values of the planner— Key factors in human behavior as they affect such matters as decision-making; goals implicit in a culture; types of controls that generally are resisted; the types of problems for which solutions are usually collectively sought— The nature of social institutions, especially those oriented to the solution of social problems, to reform & to the furthering of special interests; social institutions as constraints on human action (moral, legal, political & economic)— The basic principles of choosing, in both public & private decision-making, among alternatives on the basis of cost & returns— Power structure & the use of power in the urban community as it influences urban planning— The potentialities & limits of planned, rational action, & the nature of social control;— The type of knowledge that social sciences can provide about urban phenomena & rational group action

TABLE 3 Detail of BASIC METHODS & TECHNIQUES Component of an Illustrative Core Planning Curriculum

<p>II BASIC METHODS & TECHNIQUES</p> <p><i>A. Analytical Methods & Tools</i></p> <ul style="list-style-type: none">— Preparation & uses of different types of surveys, including a social survey for planning— Systems analysis techniques— Techniques for analyzing existing & emerging situations, e.g., economic-base study, industry-linked studies, input-output; environmental impact; techniques for analyzing traffic movements— The use of models, including mathematical, statistical & three-dimensional— Optimizing & sub-optimizing techniques, e.g., linear programming— Projection & prediction techniques, both traditional & newer ones, e.g., Delphi, scenario-writing; dealing with situations of uncertainty—The uses of the computer: potentialities & limitations; basic computer programming language & techniques <p><i>B. Design Methods & Techniques</i></p> <ul style="list-style-type: none">— The key design features of cities from ancient times to the present, & the basic techniques behind them—Design consideration & site planning—Basic elements of project design for different land uses and different development situations, e.g., on new land, renewal areas, new towns

TABLE 3 [cont'd.]

<p>II Basic Methods & Techniques [Cont'd.]</p> <p>—Design elements for planning the neighbourhood: the local community, the total urban area</p> <p>— Graphic skills, conceptual modes of work</p> <p><i>C. Legal & Administrative Tools</i></p> <p>— Instruments of effectuation</p> <p><i>D. Synthesis-Conclusion</i></p> <p>— Strategy</p> <p>— Master Planning</p>

TABLE 4 Detail of PROBLEM-SOLVING EXPERIENCES Component of an Illustrative Core Planning Curriculum

<p>III PROBLEM-SOLVING EXPERIENCES</p> <p><i>A. Use of Case Studies & Hypothetical Problems</i></p> <p><i>B. Student Workshops / Studios</i> ⁴</p> <p>— To learn to divide up tasks so they are manageable</p> <p>— To learn to use research in the analysis of problems & in the search for solutions</p> <p>— To learn to measure the cost as well as the benefits of alternative solutions</p> <p>— To highlight the types of experts needed in planning & how & where to obtain help when needed</p> <p>—To develop appropriate attitudes & approaches to the planning field</p> <p><i>C. Research Projects</i></p> <p>— To enable students to develop a design for a research project, including the various steps, from hypothesis testing to recommendations, & the carrying out of the research, from data collection through data analysis, etc.</p>

NOTES

1. The focus here is on the urban community & its growth & development. A view should be provided of urbanization as a dynamic process related to development in the economy, in social organization, in technology, etc. Most of the material would be drawn from the social sciences; however, a course in urbanization & urbanism, generally offered by the Department of Sociology or some similar department in the University is not adequate. The

focus should be on the key aspects of the urbanization process of most concern.

2. The focus here is on the three-dimensional city & the movement of persons & things.
3. The focus here is on society & human behaviour as it relates to planning in the urban community.
4. The focus here is to apply planning & other knowledge & skills to the solution of planning problems & the preparation of plans.

Addendum

The 1974 meeting of the Association of Planning Programs in Canadian Universities (APPCU) from which Ira Robinson's article is derived, provided the opportunity to gather some basic information for all Canadian planning education programs. A summary of the data is given in the accompanying table.

Characteristics of Canadian Planning Education Programs, 1974-1975

University	No. Full-time Students	No. Faculty (F.T.E.)	Duration of Program	Course Requirements	Core Program	Extent of Core
U.B.C.	65	11.5	2 years	30 units	Yes	6 courses
— Master's	53			(approx. 10-2 term courses incl. thesis)		
— Ph.D.	12					
U. of Calgary						
— Master's (Urbanism)	40 est.	8.5 est.	2-3 years	Indiv. Plan of Study	No * (only for Env.St.)	N.A.
U. of Manitoba						
— Master's	33	8.5est.	2 years	22 courses + thesis	Yes	10 courses
McGill U.						
— Master's	24	6.0	2½ years	27 ½year courses	Yes	7 courses
U.de Montreal						
— Master's	78	12.0	2 years	20 course units	Yes	5 courses
U. of Ottawa						
— Master's	18	5.5	2 years	48 credit hours	Not at present	N.A.
Queen's U.						
— Master's	26	5.1	2 years	16 courses + Res. Report	Yes	7 courses
Ryerson Polytechnic Institute						
— Bachelor's	165	9.5	4 years	68 courses	Yes	52 courses
U. of Waterloo	295	18.5				
— Bachelor's	34		2 years	3½ courses + Thesis	No	N.A.
— Master's	255		4 years	24 credits	Yes	10-11 courses
— Ph.D.	6					
York U.		10				
— Master's	120 est.	(1973)	1½-3 years	Indiv. Program of Study	No	N.A.
U. of Toronto						
— Master's	84	12.0	2 years	20 ½year courses + Res. Report	No	N.A.

*However for all students in the faculty, including those pursuing Architecture and Environmental Science Programs, as well as Urbanism, there is a set of six faculty wide courses.

Transportation Costs: A Straw Man in Regional Development*

Cheuk C. Wong, Gerald Hodge and James J. Girvan

The proposition that transportation costs are a vital factor affecting the choice of location of (most) industrial firms springs from a distinguished stream of intellectual thought: from Weber through Friedrich, Hoover, Losch, Isard, Lefebvre and others.¹ This theory is an accepted part of the industrial development strategy of cities, regions and provinces. Transportation costs and facilities are blamed for inaction or failure in programs to attract industry to non-metropolitan regions. Is this reasoning justified, the distinguished theory notwithstanding? Or have transportation costs become a straw man, a scapegoat for failure and inaction in many regional development programs?

Innumerable studies have been carried out by academics and practitioners wherein firms have been asked to state the importance of various factors affecting their choice of location. Invariably, transportation costs are cited as a critical consideration. But one observer recently pointed out that while industrial firms profess to know, to the decimal, their manufacturing costs, few can supply even a little information about how much it costs them to move their products to market.²

This is one side of the problem: we simply don't know very much about transportation costs at the empirical level as they affect production costs. Another side of the problem is the tendency of both theorists and practitioners to treat transport costs as a monolithic factor, and one almost synonymous with *distance*. The problem has still another side. This involves the behavioural characteristics of various actors in the system: the traffic managers of firms, the

public tariff setting bodies, and the international pricing of many commodities.

The present paper touches on all these facets, some in detail and others only indicatively. Freight rate structures for Ontario are probed to determine the factors that underly them. Trucking rates are examined since they reflect the dominant mode for moving manufactured goods. Evidence from other studies within and outside Ontario as well as experience of the authors are arrayed to help round out the picture. The general aim is to try and discern in what ways transport costs might affect efforts at shaping the pattern of industrial development toward less-industrialized regions.

The Many Faces of a Freight Rate Structure

The conventional wisdom about freight charges is that they are an ordered set of prices that, after allowance for fixed or terminal costs, increase regularly with distance travelled. In fact, freight charges in Ontario vary not only by distance but also by type of good, shipment size, origins and destinations of centres, competition among carriers, and volumes of freight moved along a route. One other perspective: in Ontario about 70 percent of all packaged goods are moved in lots of less than 1,000 pounds.

Shipping Distance

The facts of transport life in Ontario do not support the conventional view that freight rates vary in direct proportion to distance travelled. In this province Toronto is both the main market and the main distribution point for products for Ontario and other parts of Canada. An examination of 1969 freight rates between Toronto and other Ontario centres reveals the general function shown in Figure 1. That is, rates remain constant up to a

* An earlier version of this paper was presented to the Canadian Transportation Research Forum, Quebec City, May 1974.

distance of 20 miles, rise sharply up to a distance of 60 or 70 miles away, and then

show only a slight increase until beyond 250-300 miles from Toronto.

Figure 1

Relationship between freight rates (truck) and distance travelled by size of shipment, class 100, 1969

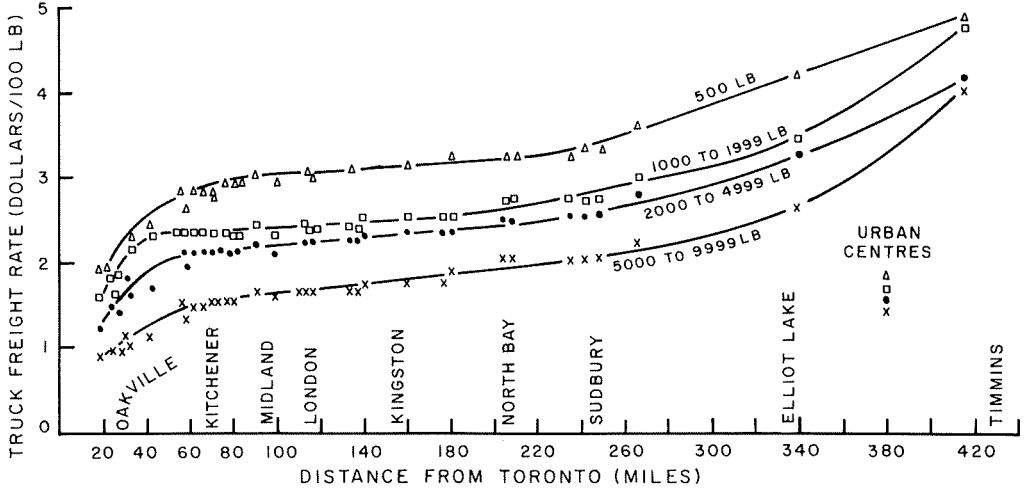


Table 1
Comparison of relative changes in Ontario truck freight rates by distance and shipment size, 1969 and 1972

From	To	Distance	Freight Rate	
			Per 100 lb. for 500 lb. Shipment	Per 1000 lb. for 1000 lb. Shipment
1969 Rates				
North Bay	Toronto	210	3.28	2.51
Sudbury	"	250	3.33	2.51
Barrie	"	60	2.87	2.11
Kingston	"	160	3.17	2.29
Belleville	"	110	3.07	2.20
Kitchener	"	70	2.87	2.11
Peterborough	"	80	2.92	2.11
London	"	110	3.07	2.20
1972 Rates				
North Bay	Toronto	210	4.03	3.21
Sudbury	"	250	2.99	2.19
Barrie	"	60	2.32	1.96
Oshawa	"	32	2.53	2.28
Kingston	"	160	2.98	2.92
Belleville	"	110	2.82	2.22
Peterborough	"	80	3.00	2.23
Kitchener	"	70	2.20	1.90
London	"	110	2.39	1.91
Windsor	"	234	2.52	2.14

There are a number of common sense reasons for this type of curve. First, within the metropolitan locale there are cartage rates common to all shipments. Second, up to 60-70 miles initial fixed (or terminal) costs are a very significant proportion of total movement costs. Third, once the travelled distance reaches beyond 250-300 miles operating costs can start to rise again because of such additional expenses as spare drivers or overnight accommodation.

In 1972, a new system of truck freight rates was introduced in Ontario. It has the effect of further distorting the factor of shipping distance for areas southwest of Toronto compared to other parts of the province. For example, even though Windsor is twice as far from Toronto as London, the freight rate to Windsor is only 5 percent greater. The influence of distance in the cost picture is more pronounced for areas to the north and east of Toronto, especially up to 80 miles away. Figures 2 and 3 show up these distortions well as does Table 1.

Figure 2

Relationship between freight rates (truck) and distance travelled, class 70, 500 lb. shipment size, 1972

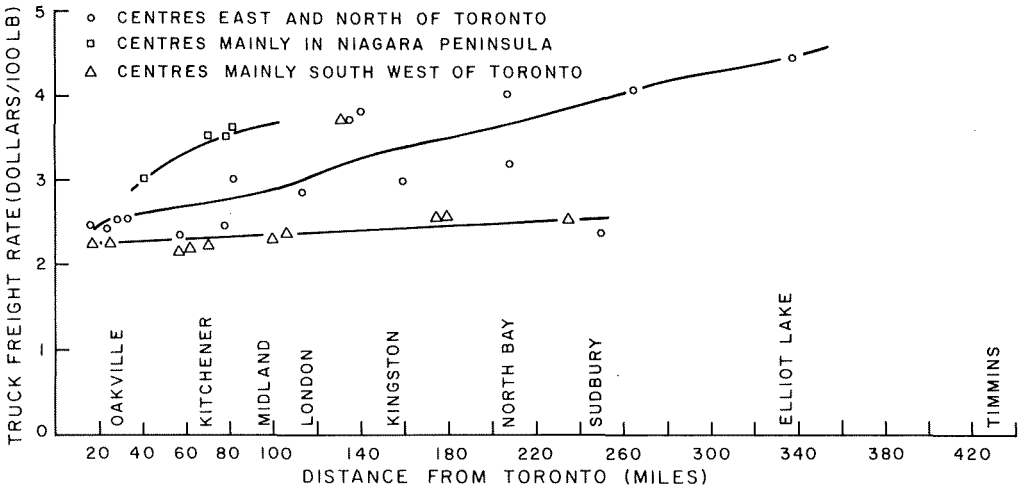
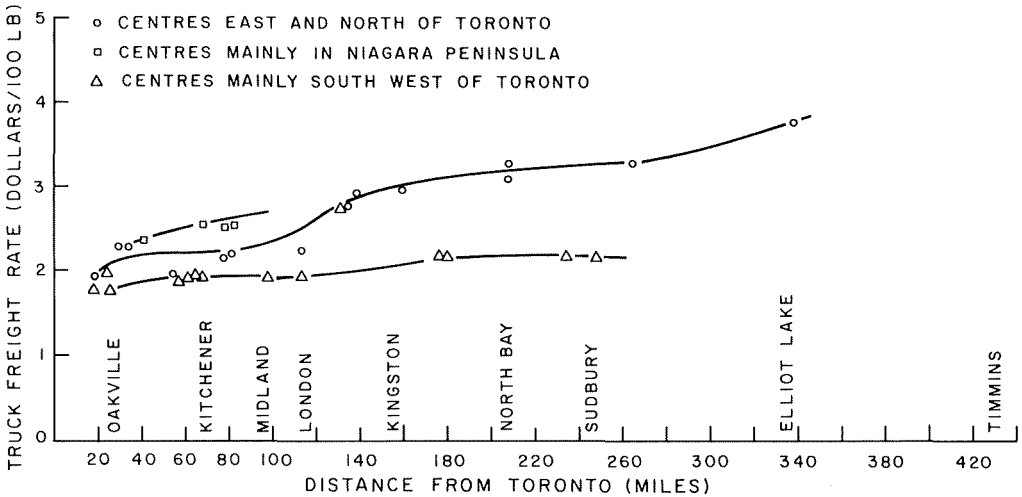


Figure 3

Relationship between freight rates (truck) and distance travelled, class 70, 1000-1999 lb. shipment size, 1972



Type of Goods Shipped

Until very recent years, most products in less-than-carload lots moved under what were called 'Class Rates'. Goods were classified according to a number of considerations such as weight-density, susceptibility to damage, value, etc. A standard class, called Class 100, was established to cover, gener-

ally, finished consumer goods. Other products were rated as percentages of Class 100: very light bulky goods might be classified as Class 200, or command twice the Class 100 rate. While heavy, bulky goods might be classified as Class 55, and be nearly 50 percent less costly to move. Table 2 indicates general rate differences under the class system.

Table 2

Most commonly used truck freight classes and examples of manufacturing products, Ontario 1969

Class 100	— Washing machines, drying machines, fans, electric cut outs, electric cooking appliances, air brakes, refrigerators, electric irons, rheostats, etc.
Class 85	— Finished aluminum extrusions, electric storage batteries, circuit breakers, biscuits, steel desks, hardware, china bathtubs, rubber tires, auto, etc.
Class 70	— Unfinished aluminum extrusions, cleaning compounds, armatures, bread, cheese, coffee in boxes, edible flour, beer, corn oil, etc.
Class 55	— Cereal preparations, fertilizer in bulk and drums, iron bars, galvanized steel plates, chrome ore, phosphate rock, crushed slate, etc.

Recently, within Southern Ontario a new classification system has been introduced for shipments up to 1,000 pounds based on a weight-density factor of 10 pounds per cubic foot or more, regardless of type of goods being moved. It is called Freight All Kinds (FAK). This new system tends to place a penalty on goods of less density and offers compensation for goods of higher weight-density. Meanwhile, shipments between Southern Ontario and Northern Ontario have been largely maintained on the old classification system.

Shipment Size

The size of shipment has a significant impact on transport rates. On less-than-truckload lots rates are broken down by weight categories such as 1,000-2,000 pounds and 2,000-5,000 pounds. In general, the larger weight of shipment, the lower the rate over the same distance. Among other things, terminal costs and overhead costs are less per pound for heavier shipments and larger shipments help reduce unit line haul costs by permitting speedier and more direct routing. Indeed, as Table 1 shows, a shipper who is able to shift to a larger size of shipment is able to gain a greater reduction in freight rates than he would obtain by a reduction in distance moved. For example, the 1969

Ontario rates indicate that a doubling of the distance travelled would increase freight costs by 10-15 percent. Whereas a shift from a shipment size of 500 pounds to one of 1,000 pounds would result in a 25-30 percent reduction in rate. A shipper in Sudbury could move goods to Toronto (250 miles) at a lesser rate per 100 pounds if he combined two-500 pound shipments into a single load than the rate applicable to a Kitchener shipper (70 miles) for a single 500 pound shipment. Figure 1 and Table 1 illustrate this situation. 1972 rates have reduced this differential but not eliminated it.

Origins and Destinations of Shipments

It matters not only what is being shipped, how big it is and how far it is going, but it also matters where the shipment is destined in Ontario in regard to the freight charges that apply. Within 100 miles of Toronto there is a fairly regular relationship between the size of centre being served and the freight rate: the larger the centre the lower the rate for its shipments to and from Toronto (see Table 3). Again, there are distortions with regard to centres northeast of Toronto. Despite the latter conditions the rates reflect a picture of the field of intense urban activity around Toronto. There is greater exchange among the larger centres and the metropolis as well as a greater array of freight services available which tend to lower rates overall between the larger centres.

Table 3

Truck freight rates between Toronto and other Ontario centres by size of centre and distance, 1971

<i>Distance To Toronto [miles]</i>	<i>Urban Centres</i>	<i>Freight Rate [\$ Charge/100 lb. at shipment size of 1000-1999 lb. level]</i>	
		<i>1971 Population [Preliminary]</i>	<i>1971 Rate</i>
Between 50 to 100 miles	Beaverton	1,500	2.23
	Colborne	1,600	2.22
	Midland	11,000	2.11
	Lindsay	12,700	2.23
	Georgetown	15,800	2.01
	Stratford	23,900	2.02

Orillia	24,000	2.11
Barrie	27,000	1.96
Peterborough	57,500	2.23
Brantford	62,900	1.94
Kitchener	110,000	1.94

<i>Between 100 miles and 200 miles</i>	Marmora	1,300	2.22
	Madoc	1,400	2.22
	Mitchell	2,500	1.99
	Wingham	2,900	2.17
	Kincardine	3,200	2.31
	Campellford	3,500	2.22
	Listowel	4,700	2.11
	Hanover	5,000	2.11
	Goderich	6,800	2.05
	Port Hope	8,700	2.12
	Collingwood	9,700	2.11
	Cobourg	11,200	2.12
	Trenton	14,400	2.22
	Owen Sound	18,300	2.17
	Belleville	34,500	2.22
	London	221,000	2.10

Based on 1971 Freight Rates

Beyond 100 miles up to 200 miles from Toronto the picture of rates shows a random pattern both with regard to centre size and geographical situation. This is largely a result of shippers offering lower rates, sometimes called 'distress rates', between small centres in Ontario and Toronto. This practice is allowed on the argument that carriers face lower reverse flows, or 'back-hauls', from smaller centres and thus have excess capacity to utilize. Lower overhead and labour costs at smaller centres also influence the ability to offer lower rates.

Volume of Movement and Competition

On those routes in Ontario generating large volumes of freight traffic there is considerable competition among carriers. The distance variable is significantly distorted by this fact. For example, it is less expensive for a Brantford firm to ship goods 69 miles to Toronto than to ship 29 miles to Hamilton because of the greater competition among Toronto-based carriers. It is also known that individual manufacturing firms are able to negotiate even more favourable rates in the high volume corridors than those published because of the intense competition among carriers.

The greatest competition has occurred between highway transport carriers and express, or non-carload, carriers. For several years they have copied each other's rate structures with slight modifications to make them more attractive. Truckers in southern Ontario recently moved to the 50-mile block system wherein common rates apply that the express carriers had used. Then on major routes they set rates 10 percent above express rates where there was no pick-up or delivery at one of the points. Where there was no pick-up or delivery at either point the truckers set their rates 20 percent higher than express carriers. Express carriers, as of January 1973, dropped their per piece charges to be more in line with the truckers.

Transportation Costs are in the Eyes of the User

One of the problems cited at the outset was that of finding out how important transport costs are for firms in their overall production costs. In a recent study firms associated with the non-ferrous metals industry were asked such a question.³ Only about one-third of the firms could provide the information on the proportion that transport costs were of total production costs. Many of the firms admitted that no attempt had ever been made to separate them. This was especially true for small firms responding to the survey. In many instances firms owned their trucks which they used for both pickup and delivery and they absorbed the costs into general overhead.

When information on transport cost proportion can be obtained, then another concern must take over: the role of transport costs can be extremely variable among firms. For example, among the firms using non-ferrous metals in their production (see Table 4), some such as wire and cable plants and secondary smelters have a much higher proportion of transport costs in their overall cost picture — probably 7-10 percent. For copper and brass mills and some kinds of plating works the proportion is down around 2-4 percent; for non-ferrous foundries and die-casting works it drops to 1-2 percent.

Table 4

Ratio of labour to transportation cost of finished products by industry within the non-ferrous industrial complex Ontario, 1970

<i>Type of Industries</i>	<i>Ratio</i>
Copper and Brass Mills	Range from 10:1 to 15:1
Wire and Cable Works	4:1
Secondary Smelter	3:1
Non-Ferrous Foundries and Die Casting	Range from 20:1 to 35:1
Plating and Galvanizing Works	Range from 4:1 to 10:1

Source: Hodge, G. and Wong, C., 1970.

The latter study found, as others have, that aspects of transportation *service* are often more critical than *cost* such as easy access to all modes, speed and reliability. Many small jobbing foundries and plating works provide essentially a service, or make custom products. It is not uncommon to find many of their customers picking up their own finished products with their own vehicles because of urgency in delivery. The latter are of such importance to many foundries and plating works that they locate within an hour's travelling time from their major customers. Two other Canadian studies confirm both the great variability among firms of their proportionate transport costs and the, generally, small proportion in most cases. Roy George's "Multiplant Firm Study" of Nova Scotia firms found a range of from near-zero to 16 percent of costs attributable to transportation and a median of only 3 percent.⁴ Even when inflated to cover the possibility of a Nova Scotia firm sending all its output to the Ontario-Quebec market, transportation costs were only of the order of 5.3 percent. The *Atlantic Provinces Transportation Study* found that for a large part of secondary industry it appears that transportation costs are commonly around 5 percent of total costs and may even be lower than this.⁵ They also stated that an extensive program of interviews indicate the importance of transport costs are generally over-estimated.

Some Aspects of the Decision Environment

A number of things can enter into the determination of the transport cost that will actually apply to a firm. For it turns out that the freight rate schedule may not apply in any case or may be able to be varied. One aspect of this is well illustrated by the situation in the non-ferrous metals industry: the pricing of raw materials on some international basis. For example, copper and nickel oxide are always quoted as f.o.b. at the customer's door; electrolytic nickel, zinc and many alloys are quoted as f.o.b. Toronto or a nearby location such as Port Colborne and Thorold. For the former products the customers pay no freight charge at all, while for the latter products they pay the portion of transportation cost from the point of quotation, (e.g. Toronto) to their own plant regardless of where the material originated. That is, a 'basing point system' of pricing exists. The accounting simplicity of such a system is undeniable, but just as sure there will be inequities between firms located at varying distances from Toronto.

At somewhat the other extreme, firms in Ontario have the option of negotiating with trucking firms to obtain special rates that are more favourable than the normal class rates. Firms that can offer large volumes and regular shipments have the most advantage, of course. But most firms located in high volume corridors, such as Toronto-Windsor, stand a good chance of obtaining special considerations due to the greater competition among truckers on these routes. Just how much improvement in rates can be obtained is, however, largely a function of the acumen of the personnel in the firm who are able to perceive the opportunities and negotiate rates.

It may seem from the above that Ontario freight rate schedules have a tenuous merit insofar as they reflect any deliberate policy on the part of the government to obtain a rational truck transportation system for the province. Such a conclusion would not be outrageous. Ontario does not set truck freight rates so much as it receives them from truckers. The Ontario Highway Transport Board is empowered to issue three kinds of license to truckers (a) to carry goods

over certain routes, (b) to carry certain goods over routes in a certain area, or (c) to carry goods to and from a specific point. Those desiring licences in any of these domains offer a rate schedule, but it is not the rate schedule that is decisive. Rather the Board uses the broad criterion of public convenience and necessity in judging the proposed service. Neither does the Board do anything about the distortions and inequities that appear in the rate structure; nor does it attempt to secure better service and/or better rates for less-developed regions of the province. A similar picture could be painted for eight of the other nine provinces in Canada and their meagre role in administering freight rates for industry. Quebec is the exception.

Towards a Fruitful Policy Perspective

Quite regularly, provincial leaders or their officials or regional interest groups can be heard blaming freight rates or the transportation system for the slow pace of economic development in their areas. But the discussion above of various facets of transportation costs should make it abundantly clear that this is an overly simple response to the role of transportation in regional development. Our theories, transformed by theorists and others into conventional wisdoms, create the illusion of uniform transportation surfaces where none, it seems, exist.

Few regular principles prevail within the world of transportation costs. This side of the problem must be recognized if more fruitful policy regarding transportation is to be made. In Ontario, our examples have shown small centers don't enjoy the same rates as large centers within 100 miles of Toronto. While beyond 100 miles, carriers may offer 'distress rates' for small centers on a rationale that is seldom questioned. The new FAK system of charges is not being used consistently because the measurements of weight-density are difficult to make. And, not least, special rates can be negotiated between shippers and carriers to obtain lower rates than those advertised. And such vagaries are not limited to Ontario. In most provinces, the agencies supervising freight rates are just

passive receivers of the rates tendered by the carriers.

How then to approach the question of transportation costs when formulating regional development policies for the dispersal of industrial opportunities? In general, the approach must be on the principle of *uniqueness*, of both firms and centers, rather of uniformity.

Thus, for those concerned with promoting industrial development the following maxims should be applied:

1 *Examine the production cost picture for the firm [or class of firms] to determine the proportion attributable to transportation.*

There is every likelihood that they will not be much affected by even 30-40 percent differences in freight rates, if transportation costs are in the 4 percent or less range for them.

For those attempting to delineate centers (or areas) that might suffer adverse transport costs:

2 *Examine the prevailing freight rates for each location under consideration.*

Distance alone is an insufficient criterion of what might be charged.

Real differences continue to exist between Canadian regions regarding freight costs and transportation services. But there are more productive solutions to reducing the differentials than the blanket transport subsidy that is usually opted for. The latter solution, while simple and therefore appealing to government, tends to mask fundamental inequities in rate setting and poor service. Again, a more selective policy is required that will be in tune with the needs of particular regions and their producers. Two more policy areas worth exploring are:

3 *Improvements may be needed in the infrastructure for transportation in the areas of consolidating shipments and improving schedules.*

Pool warehouses could be established (under provincial auspices, if necessary) in outlying regional centers. In this way, a small number of producers could consolidate their shipments to take advantage of lower rates on larger shipments. And carriers under this arrangement would need

to make only a single call in the area. Assistance might also be provided to arrange more frequent and more amenable schedules. Outlying areas are often left with the worst schedules which then contribute to the perception and the fact that they are isolated and, thereby, unattractive to new industry.

- 4 *Technical assistance could be offered to firms to take maximum advantage of rate structures.*

Advice could be offered on consolidating shipments into larger lots, using the correct class rate, or even negotiating a special rate with carriers.

The ultimate policy problem is removing the inconsistencies and conflicts between the agencies concerned with regional development and those concerned with transportation services. In most provinces they operate completely independent of one another. In Ontario, for example, the Highway Transport Board that licences carriers for specific routes does not have to adhere to any criteria which might help facilitate preferred regional development patterns of, say, the Province's Regional Planning Branch. Yet the regional planners often cite transport costs as a significant constraint on industrial dispersal. Thus, it would be in the public interest to remove counter-productive activities in these two areas.

- 5 *The policies and practices of provincial agencies concerned with freight rate setting and licencing of carriers should be made complementary to the province's regional development policies.*

Where the criterion of 'public necessity and convenience' is used in judging freight rate and route applications, as it is in Ontario, it should encompass the special needs of a region to attract and hold economic activities.

NOTES

1. Cf., C.J. Friedrich, *Alfred Weber's Theory of Location of Industries*, Chicago, University of Chicago Press, 1929; August Losch, *The Economics of Location*, New Haven, Yale University Press, 1954; Edgar M. Hoover, *The Location of Economic Activity*, New York, McGraw-Hill, 1948; Walter Isard, *Location and Space Economy*, Cambridge, M.I.T. Press, 1956.
2. J.C. Gardiner, Paper presented to the Joint Meeting of the Canadian Transport Research Forum and the Canadian Manufacturers Association, Toronto, November 1971.
3. Gerald Hodge and Cheuk C. Wong, *Prospects for an Expanded Non-Ferrous Metals Industrial Complex for Northern Ontario*, A Report to the Ontario Regional Development Branch, Toronto, 1970.
4. Roy E. George, *A Leader and a Laggard*, Toronto, University of Toronto Press, 1970.
5. The Economist Intelligence Unit, *Atlantic Provinces Transportation Study*, Vol. V, Ottawa, Queen's Printer, 1967.

The Sequence of Physical Change in Apartment Redevelopment Areas in Edmonton

P.J. Smith and L.D. McCann

Outside the business cores, the most visible and sweeping physical changes in Canadian cities are occurring in the inner residential areas. The apartment phenomenon is now widespread, and all cities have confronted the urgent demands of the apartment redevelopers. The usual response, apart from some pockets of neighborhood resistance, has been to rezone most of the inner city, in blanket fashion, to permit various forms of high density residential use. Redevelopment zoning has been largely a reaction to market pressures rather than a device for securing social or public interest goals. If left to themselves, for example, the apartment redevelopers will certainly ignore those derelict neighborhoods that are crying out for renewal, while destroying other neighbourhoods that are still socially and physically desirable. How often has there been any attempt to weigh the need for new apartment accommodation in the inner city against the needs of the people already living there? Even the recent sharp conflicts between resident groups and redevelopers have not had this result. Rather, in true pendulum fashion, they have produced an opposing reaction, marking the new-found strength of the anti-redevelopment forces.

But whether the result is redevelopment or the prevention of redevelopment, the role of the planner is open to question. Is reacting to the pleas and demands of special interest groups all that can be done in the name of planning? Or should it be possible to anticipate the pressures for change, to forecast where they will break out and how they will affect the residential environment? Forecasts of change, and the anticipation of desired future states, are central to the urban planning process, but no planner needs to be reminded how chancy the whole forecasting game can be. Even the armoury of sophis-

ticated tools and models that is now available is not proof against error, for one simple reason: sophistication stands for naught if the data and insights that set the baselines for forecasting are themselves crude and imprecise. Despite the upsurge in basic urban research during the past ten or fifteen years, we still know remarkably little about the processes of change in Canadian cities. In many instances, we cannot even be sure *what* is happening, let alone *why*. Without a better understanding of urban change, forecasting must remain a largely intuitive art, with unhappy consequences for the credibility and respectability of the profession that is expected to provide the forecasts.

A further point that bears particularly on residential change in the inner city is that we need Canadian research. Because of their very different social and racial problems, American cities are evolving quite differently from Canadian, and we should no longer attempt to borrow from their experience. This means that we should be prepared to challenge and discard our conventional thinking about residential change, because it is largely derived from American social ecologists and land economists. Moreover, the central notions are old and mostly untested by empirical work.

The basic concept is the neighbourhood life cycle, or the expectation that each district of the city will eventually pass through successive stages of growth, decline and renewal.¹ The decline phase is associated with physical, social and functional changes, all complexly interrelated. Probably the most common conception is that the changes result from the aging of the neighbourhood, and its inevitable deterioration in environmental and structural quality.² The population also changes in various ways—social status is lowered as the housing stock is filtered down,

density increases as the original single-family houses are converted into multi-family use, and renter-occupiers replace owner-occupiers. These changes accelerate the process of deterioration until a crisis is reached, called by Andrews 'the zone of uncertainty.' It is a time when some property-owners will begin to experiment with new land uses, through dwelling conversion, but the future of the neighbourhood is unclear. In effect, there are two choices. Either the experiments will blossom into full-scale renewal (normally in the form of redevelopment) or they will collapse before the forces of blight. In the former case, the conversion process will be arrested at quite an early stage. If this fails to happen, the area will continue to decline until it loses all attraction for private renewal, and public action is ultimately needed for its redemption.

From this perspective, redevelopment is seen as the salvation of deteriorating areas, and even, in the most deterministic view, as the inevitable outcome of deterioration. Quality decline creates an atmosphere that is tolerant to ever-more radical change, and the neighbourhood comes to be considered to be 'ripe' for redevelopment. The critical practical question is whether planners, redevelopers and residents share the same view of 'ripeness.' The available evidence suggests not. Development permission for apartments is sought in locations that planners had not expected, or do not see as fitting; resident groups are not prepared to concede that their neighbourhoods have become undesirable places to live; and deteriorated areas show no sign of redevelopment activity after years of permissive zoning.

It must be assumed that at least part of the responsibility for these perceptual gaps rests with our lack of understanding about processes of change. If, for example, Canadian planners were asked to conceptualize the sequence of change in apartment redevelopment areas, how many would produce something very close to the sequence that has been set out here? But does this really describe what is happening in Canadian cities? On the basis of his analysis of redevelopment in Toronto, Bourne states flatly that 'replacement of older structures by

apartment construction is not primarily a function of aging and deterioration as economic theory suggests.'³ Have planners' attitudes then been shaped by ill-conceived and poorly tested notions, which hinder them in their attempts to forecast the need for an acceptability of apartment redevelopment? It may not be possible to answer these questions with any confidence at the moment, but they highlight the need for better information about what actually happens in apartment redevelopment areas. For this, there is no substitute for detailed empirical work.

A Pilot Research Project in Edmonton

To be completely sure what changes have occurred, it is necessary to trace the development history of each individual property. This has never been done in any published study, presumably because of the tedious and time-consuming data collection requirements. For the same reason, a pilot project seemed warranted in the first instance in the Edmonton case study. Three key limitations were therefore imposed to keep the project manageable.

(i) Spatial coverage was restricted to seven census enumeration areas, containing about 750 properties and dispersed throughout the inner-city apartment areas.

(ii) Data collection was confined to the assessment records of the City of Edmonton which yielded a wealth of precise information about lot and building characteristics for both existing and replaced properties.

(iii) The base year of the study was set at 1953 because critical data on use and ownership were not available before then. The temporal coverage was also limited to five-year intervals, which fixed 1968 as the terminal date.

Obviously, it was hoped that the pilot project would point so strongly towards fresh insights into the sequence of change in apartment redevelopment areas that a more exhaustive study would be justified.

Results

It is impossible to review the analysis at any length here but two basic questions were asked of the data:

(i) Did apartment redevelopment appear as the culmination of a regular, and possibly predictable, sequence of change?

(ii) Did apartment redevelopment appear to be associated with neighbourhood aging and deterioration in such a way that they could be

used as indicators of the likelihood of future redevelopment pressures?

The first step was to measure the amount and direction of land use change over five-year intervals (Tables 1 and 2). A very clear sequence emerged.

TABLE 1 Changes in residential land use structure, all study areas, 1953-68

Land Use Types	1953		1958		1963		1968	
	No. of Prop-erties	Percent-age of Area	No. of Prop-erties	Percent-age of Area	No. of Prop-erties	Percent-age of Area	No. of Prop-erties	Percent-age of Area
Single family	585	77	505	71	461	65	339	48
Basement conversions	76	11	123	17	132	18	96	12
Other conversions	40	6	49	7	51	8	42	6
Du, tri, quadruplexes	2	-	7	1	15	2	19	3
Walk-up apartments	4	1	8	1	22	4	69	20
High rise apartments	-	-	-	-	1	-	5	3
Commercial-Residential	13	2	14	2	15	2	15	2
Vacant land	32	4	18	1	12	1	6	1
Vacant buildings	-	-	-	-	-	-	3	1
Under construction	-	-	1	-	2	-	12	5
Totals	752	100	725	100	711	100	606	100

TABLE 2 Land use succession matrix, for all areas, 1953-68

1953 Land Use	1958 Land Use									Total Change	Total No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
Single-family	-	60	13	2	4	-	1	-	25	105	480	585
Basement conversions	10	-	1	-	-	-	-	-	2	13	63	76
Other conversions	2	-	-	-	1	-	-	-	-	3	37	40
Du, tri, quad-ruplexes	-	-	-	-	-	-	-	-	-	-	2	2
Apartments	-	-	-	-	-	-	-	-	1	1	3	4
Commercial-residential	-	-	-	-	-	-	-	-	-	-	13	13
Vacant land	2	1	-	5	-	-	-	-	13	21	11	32
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	43	44
Total	14	61	14	7	5	1	1	-	41	144	652	796

TABLE 2 [cont'd.]

	1963 Land Use									Total Change	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1958 Land Use												
Single-family	-	26	6	3	19	-	-	1	2	57	448	505
Basement conversions	12	-	-	2	3	-	-	-	-	17	106	123
Other conversions	-	2	-	-	1	-	-	-	-	3	46	49
Du, tri, quad-ruplexes	-	-	-	-	-	-	-	-	-	-	8	8
Apartments	-	-	-	-	-	-	-	-	-	-	8	8
Commercial-residential	-	-	-	-	-	-	-	-	-	-	14	14
Vacant land	-	-	-	-	1	-	-	-	1	2	16	18
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	48	49
Total	12	28	6	5	24	1	-	1	3	80	694	774
	1968 Land Use									Total Change	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1963 Land Use												
Single-family	-	6	1	5	111	-	1	3	7	134	327	461
Basement conversions	9	-	9	1	21	-	-	-	2	42	90	132
Other conversions	-	-	-	-	13	-	1	-	6	20	31	51
Du, tri, quad-ruplexes	-	-	-	-	-	-	-	-	-	-	15	15
Apartments	-	-	-	-	-	-	-	-	-	-	25	25
Commercial-residential	-	-	-	-	-	-	-	-	-	-	15	15
Vacant land	-	-	-	-	6	-	-	-	-	6	5	11
Vacant buildings	-	-	-	-	1	-	-	-	-	1	1	1
Non-residential	-	-	-	-	1	-	-	-	-	1	48	49
Total	9	6	10	6	153	-	2	3	15	204	556	760

Source: Assessors Department, City of Edmonton, 1968.

In 1953, single-family use predominated everywhere, but it declined substantially and consistently throughout the study period. Some dwelling conversions, particularly through the addition of basement suites, had already occurred by 1953, and this continued

to be the main trend through the fifties. Between 1953 and 1958, the conversion of single-family dwellings accounted for 73 per cent of the residential land use change, and four-fifths of the conversions were in the form of basement suite additions. Apartment

redevelopment was almost non-existent then. In fact, the only other trend of any note was the reconversion of houses with basement suites to single-family use; in other words, conversion is not irreversible.

The period between 1958 and 1963 was quieter but more complex. Conversion was waning and redevelopment was beginning, and both were directed overwhelmingly at single-family properties. The total amount of conversion activity, and the net increase in converted dwellings, were modest in comparison with the preceding five years, but not because of a depleted supply of convertible houses. Two-thirds of the study area was still in single-family use in 1963, confirming Andrews' hypothesis that conversion must be arrested at an early stage if private apartment redevelopment is to follow.

By the third period (1963-68), new conversion activity had virtually ceased. The number of converted houses fell rapidly, through the dual impact of reconversion and redevelopment, and the latter took over as the dominant mode of residential change. Four-fifths of the redevelopment was from single family properties, but this should not be allowed to obscure the fact that converted houses were being redeveloped in roughly equal proportion. One-quarter of the single family properties and one-fifth of the converted properties were redeveloped in these years. The apartment redevelopers showed little tendency to discriminate between converted and non-converted properties in their search for building sites.

From this part of the analysis, then, it was apparent that the conventional notion of a sequence of land use change was borne out, at least at the large-area scale (i.e. when the land use data were aggregated). When the scale is reduced to the individual property or small group of properties, however, there need be no conversion phase at all. In the overwhelming majority of cases, redevelopment proceeded directly from single family use. It therefore seems that the role of dwelling conversion in the redevelopment process is to contribute to the general neighbourhood atmosphere of 'ripeness' for renewal. A small amount of conversion can be

taken as a sign that private apartment redevelopment *may* be attracted to the neighbourhood, but not necessarily to the actual converted properties. By extension, it can also be presumed that if conversion proceeds unchecked, the prospects for redevelopment are correspondingly diminished.

The question that then arises is how conversion relates to deterioration in the redevelopment process. It is best posed in chicken-and-egg fashion. Is structural and environmental deterioration the spur to conversion, and thus to redevelopment (in accordance with economic theory), or does it accompany conversion and redevelopment, and in part result from them? The first would provide a neat series of linked stimuli and responses, but the second seems to be closer to the Edmonton experience. It is messier and more difficult to unravel, but this may well be a mark of its greater realism. In effect, it means that deterioration and conversion are both manifestations of external pressures for residential change (e.g. demand for cheap rental accommodation), and that they reinforce one another in a snowballing manner. The greater the amount of conversion, the greater the decline in environmental and structural quality; and the greater the decline in quality, the greater the likelihood that conversion will continue. In terms of the redevelopment process, the critical point is that neither conversion nor deterioration can progress too far if an attractive environment for apartment investment is to be maintained.

In support of this interpretation, two pieces of evidence can be offered from the Edmonton case study.

(i) When original construction standards were compared with building conditions in 1968, it was apparent that structural deterioration had begun. On a five point scale, from good to poor, the original condition of the study areas was generally good, whereas about 75 per cent of the surviving houses were only fair-to-good or fair in 1968. At the same time, though, more than 10 per cent of the houses were still in good condition, and poor houses were virtually unheard of. It seems fair to say, therefore, that the

deterioration was not far advanced. Moreover, bearing in mind that this was the situation in 1968, after fifteen or twenty years of extreme pressure for change, it would be ridiculous to conclude that deterioration had preceded conversion in any substantial way. (ii) The housing in the study areas turned out to be so young that there had simply not been time for it to experience serious deterioration in advance of conversion. Forty-five per cent of all the houses were built after 1940; only one-third predated 1921, mostly from the boom years of 1908 to 1912.

Conversions, in particular, have occurred remarkably early in the dwelling histories (Table 3), and do not seem to discriminate by age. Of the surviving houses in 1968, one-third of those built before 1921 and one-third of those built after 1940 were converted. Redevelopment shows more age discrimination, but it must also be remembered that the housing was older when redevelopment became vigorous. Again in 1968, half of the houses built before 1921 had already been replaced as compared with one-fifth of those that post-dated 1940.

TABLE 3 Age of dwellings at time of conversion or redevelopment [in percentages]

Age Group	Basement Conversions	Other Conversions	Redevelopment	Surviving Single family 1968
Less than 10 years	60	15	0	0
10 to 19 years	27	19	10	4
20 to 29 years	1	15	21	50
30 to 39 years	6	22	12	7
40 to 49 years	6	29	22	12
50 years and over	1	0	35	26

Once more, the question of scale becomes important. Although the individual houses may be quite young when they are converted or redeveloped, their neighbourhoods are amongst the oldest in the city. This reflects a sporadic and long-drawn-out process of infilling, and means that the neighbourhoods have a reputation for age that is at odds with the very mixed housing structure that actually prevails. They are also central neighbourhoods, of course, and there can be no doubt that their proximity to booming employment and institutional nodes (the C.B.D., the provincial government centre, the University of Alberta and the Northern Alberta Institute of Technology) during a period of rapid population growth has caused premature land use change—premature in terms of the physical lives of the houses. Another revealing characteristic of the study areas was their high level of owner-occupa-

tion in 1968, about 70 per cent in the case of the surviving single family houses and two-thirds for converted dwellings. At the same time, there was a marked tendency for both conversion and redevelopment to be associated with changes of property ownership. Of the remaining single family houses, only 37 per cent had changed hands three or more times in the previous fifteen years. A fairly high level of stability was therefore prevalent, though perhaps with some filtering-down of the housing stock. Of 112 converted dwellings for which reliable information could be obtained, 40 per cent had been converted within a year of a change of ownership. In interviews, this was presented as a matter of economic necessity, to help pay off a mortgage or to supplement a family income. The converted dwellings had also had more ownership changes than the single-family houses: almost two-thirds of the basement

conversions and half of the other conversions changed hands three or more times between 1953 and 1968. This activity may be seen as a prelude to redevelopment, increasing the likelihood that the properties will eventually come into the possession of absentee landlords whose interests are speculative. Sixty-nine per cent of the redeveloped properties experienced at least three changes of ownership between 1953 and the date of redevelopment, and the place of rental occupation seems particularly significant in the sequence of events. Only half the cleared houses were renter-occupied at the time of redevelopment, but most of these had changed ownership within the previous five years, and one-quarter of them within the previous year. Renting was obviously an interim device while properties were being assembled and the arrangements for redevelopment were being made. Conversely, of all the cleared houses that were owner-occupied, only 14 per cent had changed hands in the preceding five years. Their population was stable and, but for the block-busting techniques of property speculators and apartment redevelopers, it is not likely that they would have been put on the market. For that matter, it can be presumed from the land use and ownership data that there are still many people in the study areas who are uninterested in selling out. This is confirmed elsewhere in Edmonton, where apartment redevelopment has been stalled well in advance of the complete replacement of the housing stock. The unhappy result is extensive areas of incompatibly mixed housing.

The general point to be derived from this is that redevelopment planning policies (e.g. blanket zoning) that assume a fairly quick and complete land use succession may, in fact, generate intractable and long-enduring problems of residential quality. By failing to acknowledge the persistence of much of the original housing stock, the legitimate interests of the continuing population of owner-occupiers are also disregarded. It is not enough to shrug them off with the thought that they are amply protected by the 'small fortune' that they will make one day. Quite apart from the dubious economic

grounds of such a proposition, they are being pressured to give up something that they do not want to give up, and it would be hard to argue that some overriding common good is being served in the process. The ethical problem for planners is abundantly clear.

More directly to the purpose of this paper, it is hard to escape the feeling that this kind of problem owes much to the conventional association between redevelopment and deterioration. As long as planners hold, even unconsciously, to a deterministic view of residential change, in which redevelopment is seen as an inevitable and desirable product of deterioration, they are guilty of maintaining the perceptual gap between themselves and inner-city residents. The Edmonton pilot study has made it plain that there is a relationship, but deterioration is much more a product than a cause of the conversion and redevelopment processes. Redevelopment is not attracted to certain neighbourhoods *because* they are deteriorated, but because their deterioration (and the dwelling conversion that accompanies deterioration) has not progressed very far.

The practical danger of conventional thinking is that it leads to unwarranted assumptions about the appropriateness of particular development policies. In the case of apartment redevelopment, for example, is it possible that blanket zoning in response to the urgings of developers reflects an intuitive belief that areas that are attracting redevelopment interest must, of necessity, be deteriorated? In other words, can redevelopment interest be seen simultaneously as the signal that an area is 'ripe' for change, and as the solution to the problems caused by a supposed deterioration? But if the assumption is turned inside out (as the Edmonton pilot study suggests it should be) the planning alternatives become very different. If redevelopment interest is seen as evidence that deterioration is *not* far advanced—certainly not to the point that replacement can be justified on the standard health and safety grounds—and that the neighbourhood has *not* been taken over by a shiftless and transient population, the case for blanket rezoning is quite undermined.

The real policy issues must be couched in

different terms. For example, the Edmonton pilot study has shown that the availability of property is a much more critical variable in the redevelopment equation than the age or condition of the buildings. But how can effective redevelopment policies and zoning regulations be shaped around the chance distribution pattern of property availability, without jeopardizing the interests of the resident population who have no wish to leave? Is it just a black-and-white choice, between no redevelopment or blanket zoning in the hope of complete redevelopment? Or is a mix possible without hopelessly compromising one interest or the other? Edmonton's experience certainly suggests that blanket zoning is neither warranted nor successful. A recent planning study has shown that only 455 acres of 1,250 acres zoned for apartments in the inner city have actually been redeveloped.⁴ On present evidence, this over-zoning has already created a land supply that should be adequate for at least twenty or twenty-five years. In fact, of course, the prospects of all this property being redeveloped within twenty-five years are minimal, since that would also assume no further additions to the zoned apartment area. The dubious ethics of using planning devices, such as zoning, to foster the physical deterioration of otherwise healthy and attractive communities is screaming for attention, especially since the deterioration process is likely to be so long-drawn-out. The conventional association between redevelopment and deterioration becomes self-fulfilling.

NOTES

1. The most recent and most complete exposition of the life cycle concept is Richard B. Andrews, *Urban Land Economics and Public Policy* (New York: The Free Press/Collier Macmillan, 1971), pp. 95-137. For other versions see Edgar M. Hoover and Raymond Vernon, *Anatomy of a Metropolis* (New York: Doubleday, 1962), pp. 183-198 and David L. Birch, 'Toward a Stage Theory of Urban Growth,' *Journal of the American Institute of Planners*, Vol. 37, No. 2, 1971, pp. 78-87.
2. Wallace F. Smith, *The Low Rise Speculative Apartment* (Berkeley: University of California, Center for Real Estate and Urban Economics, Research Report No. 25, 1964), p. 79.
3. Larry S. Bourne, 'Market, Location and Site Selection in Apartment Construction,' *The Canadian Geographer*, Vol. 12, No. 4, 1968, p. 220.
4. D. Lovatt and A. Olsen, *Zoning Study: An Historical Inventory of Multiple-Dwelling Land* (Edmonton: City Planning Department, 1973).

Key Principles in Planning for Environmental Quality

Eugene Mattyasovszky

How, in a world much concerned with deterioration of the natural environment, may a planner incorporate appropriate measures into urban and regional plans to help ensure the integrity of the natural environment? The purpose of this paper is to suggest some 'practical ideals' for planners dealing with the physical environment.

In the realm of ecology there are three key principles for preserving or re-establishing a healthy, well-functioning ecosystem. They are:

1 Stability

2 Productivity

3 Cyclicity

They represent integral processes and conditions in the natural environment and are also interrelated. From these principles can be derived criteria, standards and ideals that the planner can use in devising planning solutions and evaluating alternatives. These principles are applied near the end of the discussion in a realistic planning example of development of an urban river valley.

1 Stability

The principle of stability refers to the capacity of the environment to maintain itself against impact from outside or to be able to re-establish its former state after a temporary disturbance. A stable environment can be recognized by its *complexity* and *variety*, as well as its *maturity*. In more formal terms, these conditions are usually found in an environment that has reached its high successional stage and has a high level of 'captured' and used energy within its ecosystems.

The attributes of variety and complexity are directly connected with stability. The more varied the environment the more stable, generally. It is certainly so in natural systems — ecosystems which have also

evolved toward complexity. Newton said, 'Nature is pleased with simplicity,' but this is apparently not quite the truth. Complexity has obvious inherent advantages in function and structure; variety is implied in complexity. One such complex system is a rain forest. On a smaller scale, peasant field strips in some agricultural landscapes show variety without being a really complex system. Yet even this kind of variety can mean more stability than very extensive areas simplified to the extreme (e.g. one-crop, large fields).

Human intervention in natural systems normally means reduction in complexity and therefore in stability. Human use of land usually simulates the most simple ecosystem and the maintenance of it, and therefore needs permanent intervention. The present 'warfare' against so-called pests is an indication of natural systems' inability to maintain themselves. This maintenance is a costly process and never attains, in the end, a stable state. There is need of continuous application of ever-improving (or destructive) instruments and methods.

Fortunately, many of the attributes of a stable system can be manipulated or introduced relatively easily. The relatively manageable attributes serving stability, are:

- a** species diversity
- b** spatial or pattern diversity
- c** biochemical diversity; and in some cases, where it is compatible with the intended use
- d** maintaining it in a high (mature) successional stage

The trend, however, is toward further simplified systems in more and more extensive continuous fields. What superficially appears to be the progress of technology is in fact regression from a stability point of view. And reduction in variety also leads to increased

vulnerability, which leads to increased intervention and this to decreased capability of the system to cope with injuries, and so on. This is exactly our situation in many areas today. The environmental deterioration problems of our day, such as air, water, soil pollution are at the very least connected with this enervating sequence.

The regional planner's capacity for decision about the use of the land is limited by many factors—cultural, economic—or simply by the sheer pressure of human population. The problem is not to re-establish an original self-maintaining stable ecosystem through complexity and variety but through compromise to try to *build in as much stability as possible*. This means to introduce and maintain as much diversity and other ecological attributes of stable environment as the constraints permit.

In the case of agriculture and planted forests the future is discouraging. It may well be the case that things will go further in the present simplifying direction. It is so strongly felt by some development experts that efficiency is only achieved this way, that no serious efforts are made to increase variety. The experience as well as the findings of ecology show that different combinations of plants in the same area can be more successful (more stable and more varied, even more productive) but may be so at the cost of less efficient use of labor as well as of present machinery in terms of short term profit.

At any rate the case for variety in agriculture and planted forests appears to be a losing battle. Variety is everywhere retreating (as from the old Mediterranean two- or three-storey cultures, Chinese and other horticultural methods, etc.) and giving way to uniformity. As an inevitable consequence there is less stability and need of more and more intervention.

In other land uses, the situation is quite different. There the apparent incompatibility between stability-variety and productivity-efficiency does not exist. Recreational land uses, urban land uses, land use in specific vulnerable areas (seashores, slopes, bodies of water, etc.) are compatible with variety; it is even a requirement. The maintenance or introduction of variety in a recreational area

requires specific and thorough knowledge of the ecological conditions of the area. Criteria for such applications have been dealt with in an earlier paper.¹

Variety takes many forms in land use in vulnerable areas (areas with exceptional natural historic interest, seashores, lakeshores, estuaries); variety means many things and it has to be interpreted differently in different situations. A general rule might be: *a little-disturbed state usually comprises enough variety to provide stability as well as aesthetic and natural historical value*. Where action is needed (i.e. erosion control in arable land) the measures taken often increase the variety of the system.

2 Productivity

Productivity has a somewhat different meaning for the ecologist from that which it has for the economist. The ecologist distinguishes between gross and net productivity. As E.P. Odum defines it: productivity is the total amount of organic matter fixed. Net primary productivity is organic matter stored in tissue; gross productivity is the net plus matter needed for respiration (life processes). Although the planner must be concerned with both the economy and the ecology, there is a definite shift in policy areas from giving overwhelming consideration to economic criteria toward the ecologist's productivity quality criterion.

Up to this point, the problem appears to be simple and similar to the case of stability: introduce the conditions of maximum productivity, compatible with other considerations. Unfortunately, within the same unit of area, region or ecosystem the maximum productivity does not correspond with maximum stability or variety. Rather the opposite tends to be true; if there is any correlation, it is a negative one.

The planner's problem is to discover how to find a compromise, or proper balance between stability and productivity, and build it into the plan of the region. It is a subtle task, demanding considerable substantive knowledge of the environment, ability to predict the consequences of intervention, and ability to formulate an ideal or guiding policy about

the relative importance of these two quality criteria.

The relative importance and intended equilibrium will vary within the plan according to the uses of different parts of the land (or subsystems within the whole ecosystem). There will be proposed land uses where the stability is more important, such as erosion-susceptible areas, some types of recreational land use etc. In other cases productivity is the almost exclusive aim, such as agriculture. The different urban uses create different categories; here other considerations may take precedence.

3 Cyclicity

This notion has several meanings and is rather new in environmental planning. What we are concerned with here is proper circulation of materials indispensable for life. Thus, cyclicity means the circulation of necessary nutrients such as nitrogen, carbon, phosphorous, etc. Their definable circulation in a well functioning ecosystem can easily be disrupted by man's activity. The most frequent man-induced disturbance consists of taking material (resources) away from one region and transferring it to other regions, frequently, the great urban centers. From there it may be flushed directly into the sea or other water bodies. The so-called 'downhill' flow of nutrients is thereby accelerated. There is still some re-circulation but in a reduced and, generally, wasteful way. Some vital materials circulate better and are less susceptible to man's interference than others. But, carbon and water, previously less critical, are now of concern in regard to their cycles. Phosphorous and nitrogen and other nutrient cycles can even more easily be disrupted. Connected with or part of this cyclic disturbance is the lack of recirculation and re-use and eventual accumulation of waste and by-products of human activities, mostly undecomposable industrial waste, chemicals, etc.

It is obvious that the proper material and nutrient circulation within the region or ecosystem is a prerequisite of productivity and stability. Although cyclicity is a pre-requisite it is only so in the sense that the re-circulated material is needed, but if it is lost it can be (or rather must be) supplied from other sources.

So the planner's strategy should be two-sided: one would be to secure a maximum of re-circulation and the other would be to add as supplements many of the needed materials.

The ideal of keeping vital nutrients re-circulating as happens in an undisturbed well-functioning ecosystem is often incompatible with our present economic situation and use of land. Since, even in the natural system there is a downhill flow of nutrients, a strategy of supplementing material from outside sources is generally compatible with maintaining ecosystems.

The principle of cyclicity can be taken into consideration quite explicitly in planmaking for urban areas and regions. For example, in the survey phase one can:

- 1 Examine the general state of material circulation under the existing land use arrangements;
- 2 Recognize the weak points, disturbances, forms and speed of the loss and inadequacies; and
- 3 Quantitatively define the changes and construct a model of the material and energy exchanges under the existing land use system.

In the planning proposals phase, cyclicity can be expressed in two ways:

- 1 As measures of change dealing with the proposed land use system. (This can also be illustrated by a model.)
- 2 As proposals regarding the kind of material to be supplied to the ecosystem and in what form.

Linking Ecology to Land Use Plans

In recent works of E.P. Odum we find the concept of 'compartmentalization' of land uses.² This concept can be applied readily and relevantly to land use planning. Odum adopts four categories of land use related to stability in ecosystem development:

- | | |
|-------------------|---------------------|
| 1 Productive uses | Unstable/Vulnerable |
| 2 Compromise uses | Partly Stable |
| 3 Protection uses | Stable |
| 4 Non-vital uses | N.A. |

These categories may also be used to array and investigate land development as a counterpart to economic function and social activity land use categories. Within, say, a 25-mile radius of a major urban center, the land uses might be examined and recorded

according to their effect on stability of the environment.

1 *Productive/Vulnerable Land Uses:*

- a Agriculture (arable)
- b Road, Power and Pipelines—rights-of-way
- c Other 'unstable' land uses: estuaries, steep slopes, abandoned orchards, arable or other lands of 'urban shadow' etc.

2 *'Compromise' Land Uses:*

- d Planted forest (vulnerable in early age, less vulnerable later).
- e Some grass covered areas, grazing lands, (planted or natural).

3 *Protective/Stable Land Uses:*

- f Forested areas
- g Most of the areas of outdoor recreation (playground, sportsfields being mostly within the urban-industrial land)
- h Other conservation areas, areas under jurisdiction of conservation authorities but not within parks, areas zoned as 'greenbelts', some metropolitan open spaces

4 *Non-Vital/Urban-Industrial Land Uses*

The above categories offer the possibility for the planner to distribute or disperse land uses in a variety of ways in which the protection to adjacent areas, and so increase the productive uses or with intermediate categories. The stable uses are not only stable themselves but lend some stability and protection to adjacent areas, and so increase the stability of the whole area. Required uses should, of course, be calculated by future demand for a certain size of population rather than present ones. This is especially the case with recreational uses, and rights-of-way. The land use plan, clearly, has to be adjusted to the natural physical setting, the prevailing topography, soil, and vegetation cover as well as to the particular distribution of land uses. The planner has the following possibilities open to him:

- 1 to maintain the existing distribution
- 2 to rearrange it
- 3 partly to maintain or partly rearrange it (this is the most frequent case); and/or

4 attach or prescribe conditions, restrictions and specifications to different proposed and existing uses.

All these should be preceded by a thorough investigation of the environmental stability as well as other quality requirements.

It is not necessary to elaborate further here on the possibilities of (1), (2) and (3). Their proper application varies greatly according to the local circumstances. The fourth—restrictions and specifications—offers tremendous possibilities for the planner. Many unstable or otherwise qualitatively deficient land uses can be improved by certain specifications. (To prescribe these specifications is not always easy. The planner representing the public interest can come into conflict with private interests of the land owner who may be well protected by law.)

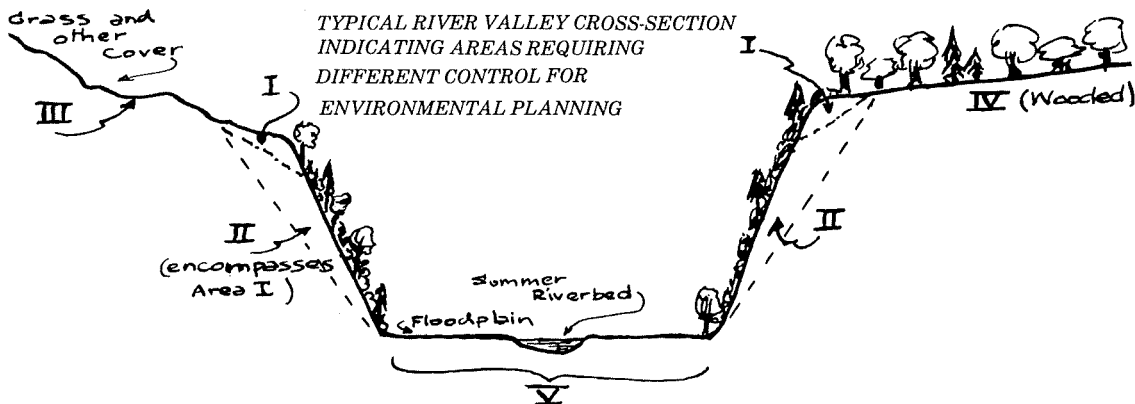
An Example: Planning in the Credit River Valley

A concrete example from the writer's experience in a rapidly developing area west of Toronto can help illustrate the planner's role in maintaining ecosystem stability.

A unique asset of the area are several scenic valleys. To preserve these extremely vulnerable complex ecosystems, many different measures were taken:

- 1 Assessing possible impact of the expected use (in this case a new, large scale residential development)
- 2 Prescribing preventive measures; and
- 3 Where needed, undertaking restorative measures.

For the purpose of assessing possible environmental impacts, detailed maps and cross-sections of the valleys were prepared. They delineated the 'vulnerable' areas in respect to the forms of possible threats on ecosystems stability in the valleys. A characteristic cross-section from the lower part of one of the valleys is shown here with the areas of differing vulnerability noted.



Control Area	Description	Degree of Vulnerability	Recommended Control Measures
Area I	Upper part of steep slope	very vulnerable	-keep intact -no buildings -no roads -no fences
Area II	steep slope with vegetation and trees	quite vulnerable	-preserve all vegetation cover -cut no trees -no building -no dumping -no road without concrete support walls
Area III	area adjacent to slope not wooded, without grass or other cover	delicate	-restricted land use -keep vegetation cover where possible -contour cultivation -reforestation -no harmful chemicides
Area IV	forested land adjacent to slope	stable	-strict limitations on uses which would disturb forest -controlled forest use (cutting/recreation)
Area V	valley floor	very vulnerable	-keep open for runoff -controlled recreation -wildlife 'corridors'

All the measures in the above categories were in practice worked out in the necessary detail: what, how, and who would implement them. Because of the limited space here we only referred to the measures themselves.

All of this is, of course, an example of only a very narrow section of a planning area with a limited set of environmental problems. The planners who must deal with greater units, like whole river basins, face much more varied sets of possibilities to maintain or re-establish stability. A regional land use proposal with its mosaic-like dispersal of mutually 'stabilizing' different use allocations with their corollary measures would be a more complete example. But even this selected simple example can show what the planner can do and what a wide variety of measures are available to preserve a healthy, stable physical setting.

For larger areas, the planning strategy for environmental improvement might consist of two types of control measures:

- 1 required measures with sanctions; and
- 2 recommended measures without sanctions.

A few examples are given below:

- a *Connected with cultivation.* Certain cultivation methods are recommended in areas adjacent to vulnerable localities such as river valley slopes.

- b *Vegetation cover.* Restrictions in changes of vegetation cover including cutting of only certain sizes or kinds of trees.
- c *Chemicals.* Restrictions on certain chemicals used in industry and agriculture; specification of quality of discharged effluent, and pretreatment.
- d *Changes of use.* Restriction on large scale land use change.
- e *Intensity of use.* Limitation of use pressure on certain areas such as recreation use (e.g., hiking only versus snowmobile use).

Conclusion

This paper spent a relatively large amount of space on the principle of stability. This was partly intentional; stability is a neglected, not-too-well-understood, and not-too-well-cared for aspect of our environmental planning.

The nearly exclusive productivity or efficiency concern of conventional planning gradually must give way to broader perspectives, if we want to be able to cope with those aspects of quality deterioration—pollution, physical and mental health hazards, aesthetics, etc.—which are more intimately connected with stability and cyclicity attributes. Fortunately, the possibility of applying measures and guiding principles is open to the planner, if he approaches his tasks from a broad, ecological perspective.

NOTES

1. E. Mattyasovszky: 'Recreation Area Planning: Some Physical and Ecological Requirements' in L.O. Gertler, ed., *Planning the Canadian Environment*, Harvest House, 1968, pp. 148-168.
2. E.P. Odum, 'Strategy of Ecosystem Development,' *Science*, Vol. 164, April 1969, pp. 262-269.

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FROM THE PAST

Radial Hamlet Settlement Schemes* E. Deville, LL.D.

Surveyor General, Dominion Lands

A number of hamlet settlement schemes, in which triangular farms are formed by lines radiating from the hamlet, have recently been presented to the public through the newspapers. The object of a hamlet scheme is to enable farmers to enjoy the social and other advantages resulting from community life by gathering their houses and buildings into small hamlets.

The idea is not new: it can be traced back to the early days of the colony. The first settlements were along the shore of the St. Lawrence, around Quebec, each settler's lot being given a narrow frontage on the river, generally 2 or 4 arpents (23 to 46 rods), and a depth of several miles. The houses were built on the water-front and stretched in a long line along the shore. This state of affairs did not agree with the views of the King; his subjects in France were living in villages, which was the proper way for people to live, and his subjects in Canada must dutifully conform to the established custom of his kingdom. Accordingly, by an 'arret' of the 21st March, 1663, he ordered the population to be gathered into hamlets and boroughs. In his instructions to the Intendant, Jean Talon, he tells him to divide the inhabitants into boroughs, each composed of a reasonable number and with a suitable amount of land, and to cause them to observe the regulations and usages which are practised in France. Great was the consternation among the Canadians on receipt of the King's arret; they feared being compelled to abandon their houses and improvements. Talon told them that the measure was not intended to be retroactive. To further allay the excitement and demonstrate the feasibility of the

scheme, he laid out, in 1667, a few miles northwest of Quebec, the three villages of Charlesbourg, Bourg Royal and L'Auvergne; two were settled with 'families' and the third one with soldiers.

The village was in the form of a square of forty-arpent sides (about 1½ miles). Each side was divided into ten parts of four arpents each (46.5 rods), which formed the bases of forty triangular farms of forty square arpents (34 acres). In the centre was a small square, with a road around it called the 'Trait-Quarre' (square line). Inside the trait-quarre was the church, cemetery, flour windmill and flour water-mill; the inhabitants' houses were on both sides of the traite-quarre. Charlesbourg, three and one-half miles from Quebec, is to-day a town of some 2,500 population.

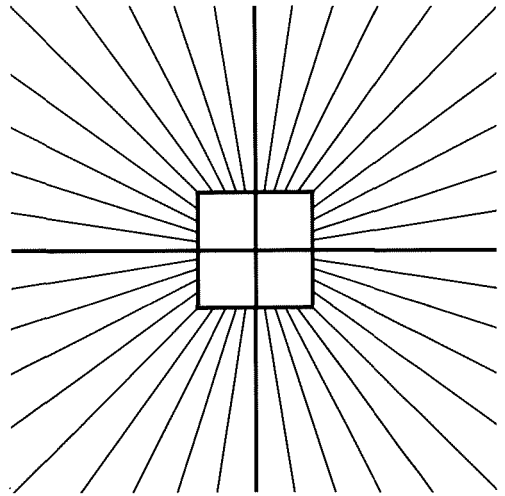


Fig. A—Charlesbourg and Bourg Royal Settlements, near the city of Quebec.

* This excerpt is taken from *Conservation of Life*, volume 4, #2 (April, 1918) p. 33. The section we include is that accompanying the plan of Charlesbourg and Bourg Royal Settlements (Fig. A), which served as the basis for the cover design of this issue of *Plan Canada*.

Conservation of Life subtitled 'Public Health, Housing and Town Planning' was an official publication of the Commission of Conservation. In addition to being Surveyor General Dr. Deville was a charter member of the Town Planning Institute of Canada, a Vice-President of the Institute at its inception, and President in 1921.

Ed.

Biographical Note: Horace Seymour Shirley Spragge

Horace Llewellyn Seymour (1882-1940), one of the pioneers of town planning in Canada, began a career in 1914 that spanned Canada from Halifax to Vancouver, encompassed federal, provincial, municipal and private consulting work and included university and university extension lecturing and radio broadcasting. He had been advocating a renaissance in town planning after the stringencies of the Depression when he died at the age of 58 in 1940.

Seymour was born in Burford, Ontario and graduated from the University of Toronto in engineering. He was employed by the federal government as a surveyor for Topographical Surveys and Mapping, and later qualified for his C.E. A large part of his early career was in surveying. When Thomas Adams came to Canada in 1914 as Town Planning Advisor to the Commission of Conservation, Seymour joined the Commission's Town Planning branch and worked with Adams during the active life of the Commission. In 1919 Seymour was the Federal official appointed to explain the Dominion Provincial Housing loan in the Eastern Provinces. He did some private consulting with Frank Barber and Associates, an engineering firm in Toronto, then in 1922 produced the plan for the city of Waterloo and as Associate Consultant with Thomas Adams the plan for the adjoining city of Kitchener. This was the first comprehensive plan for any city in Canada; to obtain sufficient zoning enabling legislation at that time Adams and Seymour found it necessary to amend section 399a of the Municipal Act.¹

After a trip to Venezuela to do a geodetic survey, Seymour applied for the job of preparing the plan of the City of Vancouver. There was considerable resentment expressed in the *Town Planning Institute Journal*² when the job was given to the American firm of Harland Bartholomew rather than a Canadian but Seymour was appointed resident engineer for Bartholomew from 1926-1929 to supervise the plan. This system of using men on the spot was typical of the large American consulting firms like those of Bartholomew and John Nolen. A.G. Dalzell, another

planner under Adams at the Commission of Conservation, was also employed by Vancouver for the plan.

In 1929 Seymour went to Alberta as Director of Planning for the Province, administering the new Planning Act and reporting to the Minister. Planning advice was offered to all municipalities but the Depression hit and in 1932 the planning department was disbanded.

Seymour returned to Ottawa as a planning consultant. Among his clients were the Ontario municipalities of Sault Ste. Marie, Cornwall, Ft. William and Sudbury. In the Maritimes he was retained as the planning consultant to Saint John, N.B. from 1935 to 1940 and worked on planning legislation for both Nova Scotia and New Brunswick.

His planning experience was wide. He had worked on the Niagara regional study of 1919 under the Commission of Conservation. He gained experience of urban renewal under drastic circumstances working with Adams in Halifax after the explosion of 1917 and in Haileybury after the disastrous fire of 1922. He believed that planning encompassed highway improvements and provincial park areas (and tried to implement this in Alberta) and he advocated planning on a provincial scale.³

Seymour saw the purpose of town planning as achieving efficiency goals. He wrote in February, 1940: 'I find that there is, now in Ontario, an increasing recognition that town planning is fundamentally economic. In spite of the undue prominence frequently given the City Beautiful side of town planning, it is being realized that town planning is an essential way of reducing tax levy or of giving more essential services for the tax dollar.'⁴ Like Adams, Seymour scorned the City Beautiful approach, and, again like Adams, believed in the essential connection of housing and town planning. One reason for the disappointment in the results of the 1919 Federal Provincial Housing Loan, he felt, was the lack of town planning accompanying the building.⁵ When the United States passed the Wagner-Steagall Public Housing Act in September, 1937 Seymour regarded Canada as the one remaining Western country that did not provide, by legislation, for low rent

housing.⁶ He threw his energies into working for the National Housing Act of 1938 and for a National Building Code. He advocated cooperative housing and building societies and felt the Dominion Housing Act of 1935 only gave mortgage protection to those already owning homes. He was deeply involved with the National Housing Conference held in Ottawa in March, 1937 by the Union of Canadian Municipalities and the National Housing and Planning Association, a citizen organization with branches and counterparts across Canada.

Seymour was active in planning education both for professionals and the community. As early as 1921-23 he lectured at the University of Toronto and again at the University of Alberta in the 1930's. With the University of Toronto Extension Department he ran a series of planning lectures in Ottawa in the later thirties as both co-ordinator and participant. In Edmonton he had run a series of ethnic programmes on the radio; later in Ottawa he had planning lectures broadcast. He was a frequent contributor to periodicals, notably the *Journal of the Town Planning Institute of Canada*, the *Canadian Engineer and Social Welfare*. He was a member of both the Town Planning Institute of Canada and the American Institute of Planners.

Styling himself Housing and Town Planning Consultant, Seymour typified the early generation of generalist planners whose experience touched most fields of planning. It is unfortunate that he did not live to transmit his Canadian knowledge and expertise to the new generation of planners that produced the post war revival of planning.

His daughter, Marion Seymour who has followed her father's profession, is placing her father's papers in the Public Archives of Canada to promote the study of early Canadian planning. Queen's University will receive his library.

NOTES

1. Seymour papers file 66, "Town Planning and Housing 1935", TS speech, p. 11.
2. "News and Notes: Canadian Town Planning Gets Under Way," *Journal of the Town Planning Institute*, v.5 #5 (October, 1926), p. 1.
3. Seymour papers, file 61-3, Interview with Seymour Saint John Town Planning Commission, n.d.
4. Seymour papers, file 31, letter, Seymour to Controller Tardiff, Pembroke, 21 Feb. 1940.
5. Seymour papers, file 66, "A Canadian Renaissance in Town Planning," TS article, 24 Feb. 1937, p.2.
6. Seymour papers, file 61-3, Interview with Seymour Saint John Town Planning Commission, n.d.

BOOK REVIEWS

Jean-Claude Marsan, *Montréal en Evolution*, Montréal: Editions Fidès, 1974, 423 p.

Avec son livre "*Montréal en évolution*", monsieur Jean-Claude Marsan nous offre une magistrale synthèse sur l'histoire de l'architecture et de l'environnement urbain de la métropole canadienne. Architecte de formation et professeur à la Faculté de l'Aménagement de l'Université de Montréal, monsieur Marsan déborde largement, dans son ouvrage, du cadre strictement urbanistique pour expliquer l'évolution de la ville de Montréal; il en vient ainsi à considérer dans une perspective chronologique les facteurs stratégique, historique et géographique qui ont conditionné sa croissance depuis le début de la colonisation de la Nouvelle-France jusqu'à l'époque contemporaine.

En s'attaquant à un sujet aussi ample, l'auteur sortait des sentiers battus et relevait le défi de l'explication pluralistique du phénomène urbain; par son approche interdisciplinaire, il a réussi à dresser un vaste tableau de la genèse de la métropole et de sa croissance jusqu'à nos jours. C'est précisément à ce niveau que réside tout l'intérêt de cet ouvrage qui s'adresse autant aux spécialistes universitaires des diverses disciplines qui ont la ville pour objet d'étude, qu'à l'"honnête homme" curieux de comprendre l'évolution de l'environnement urbain de la seconde ville française du monde.

Pour l'urbaniste, la leçon qui se dégage du livre de monsieur Marsan est que la ville de Montréal est le résultat d'une symbiose très subtile de nombreux courants culturels qui se sont principalement traduits dans les divers courants de l'architecture française et anglaise du XVIIe au XIXe siècle, adaptés aux conditions climatiques locales

jusqu'à l'avènement de l'architecture internationale du XXe siècle et dont certaines réalisations ont conféré à la ville son identité et son charme bien particuliers. Cet équilibre est aujourd'hui compromis par la spéculation foncière qui entraîne la démolition d'édifices marquants qui donnaient à la ville son caractère spécifique. Cette urbanisation 'scientifique' et le plus souvent 'sauvage' détruit l'homogénéité du tissu urbain et accélère le processus de désintégration du milieu édifié par les générations précédentes. Il ne s'agit pas ici de se porter systématiquement à la défense d'un édifice du seul fait de son âge, car il est normal que le tissu urbain se régénère en permanence mais cette rénovation devrait se faire en tenant compte du milieu existant et en conservant les bâtiments les plus significatifs des époques révolues au lieu de ces paysages urbains dévastés qui caractérisent aujourd'hui le centre-ville.

Cette évolution du milieu urbain montréalais est divisée par l'auteur en trois parties principales: la ville-frontière (1642-1840), Montréal victorien (1840-1914), Montréal au vingtième siècle.

Le livre est abondamment illustré et réunit, pour la partie ancienne, tous les plans et cartes les plus connus et rarement réunis mais qui, malgré l'utilisation des planches hors-texte, ne sont pas toujours d'une lisibilité parfaite et ne rendent pas justice à la belle facture des gravures anciennes. Toujours au chapitre des illustrations, on peut regretter que les clichés illustrant le centre-ville datent déjà de quelques années, mais il ne s'agit là que de détails mineurs qui pourraient être corrigés dans une édition ultérieure.

Il y a lieu également de mentionner la remarquable bibliographie, établie par chapitre, qui fait de cet ouvrage un précieux instrument de recherche et qui vient encore s'ajouter à l'intérêt exceptionnel que ce livre devrait soulever.

Léon Ploegaerts

Human Settlements: The Environmental Challenge

A Compendium of United Nations Papers Prepared for the Stockholm Conference on the Human Environment, 1972, Centre for Housing, Building, and Planning, United Nations Department of Economic and Social Affairs.

The Macmillan Press Ltd., London and Basingstoke, 1974. 209 pp.

At the United Nations conference on the Human Environment, held in Stockholm in 1972, six main themes were discussed, and a series of subjects defined for each theme. One of the six themes was the planning and management of human settlements for environmental quality. This was divided into 15 subject areas, each the topic of one background paper. *Human Settlements: The Environmental Challenge* is a compendium of these background papers, most of which were prepared by the Centre for Housing, Building, and Planning, United Nations Department of Economics and Social Affairs. Since these background papers are not generally available, the material was published in an integrated form for general distribution. As a compendium, the book is ephemeral: it lures with a surfeit of facts, whets and appetite, then directs the reader elsewhere for the detailed treatment. By the end of this century, the population of the world may be approximately double what it is today; the proportion living in cities may increase from 40 per cent to 50 per cent; there may be a need for 1,100 to 1,400 million new housing units; there may be megalopolitan regions of 50 million people in each continent. This prospectus for the year 2,000 assumes, of course, a reasonably orderly world development, presumably under the aegis of international agencies, such as the United Nations, with their conferences, discussions, papers, declarations, recommendations, and resolutions. The prospectus does not consider, in its year 2,000 scenario, prolonged famines, sub-continental wars, or major upheavals in the geopolitical world map. World bodies such as the U.N. do not seem to consider it scientific nor politically popular to include such cataclysms in their view of alternative futures.

Given, then, the future viewed as an exponentiation of the present, the book offers an overview of the plethora of world problems, both planning and otherwise. An ubiquitous maxim in the text is that it is primarily through the planning of human settlements that an appropriate environment for human survival and development may be assured. To achieve this, the suggested prescription is to create optimal conditions for economic and social growth, while at the same time to protect and to enhance the environment. Not discussed is the enigma of how this can be achieved in the developed *and* the developing countries, without rupturing the privileged world position that many Western countries assert as their birth-right. The discussion, without becoming polemic, navigates through tempestuous issues and their solutions, skimming the surface and only occasionally dipping into detail. Profound problems may be introduced, diagnosed, and treated in single paragraphs. The book was intended to be an overview and not a detailed manual; its habit to aver the irrevocable should therefore not leave the astute reader bereft. Nor should the dichotomous nature of the presentation be disturbing. These dualities include developed, developing countries; human settlements as cities, as dispersed regions; planning in the capitalistic model, in the socialist-Marxist model; migrations to cities, from cities; centralized, decentralized decision making; etc. The organization of the book itself is dichotomous, of sorts, being divided into Part One (the problem, evolution of human settlements, a comprehensive approach, the process of implementation), and Part Two (housing, industry, leisure, infrastructure, transport, and social and cultural aspects). There is also an appendix which lists those of the 109 recommendations of the Declaration on the Human Environment and its Action Plan, adopted at the Stockholm conference, which deal with human settlements, and it outlines three resolutions on human settlements, adopted by the General Assembly of the United Nations.

Growth is a central theme for much of the discussion, and continued industrialization

and increased production are accepted as essential for a betterment of world humanity. The energy-consumption imbalance in the world today, where a minority of the world's population consumes most of the energy and other resources, is treated only in passing. Similarly, the text avoids the population problem, and slithers diplomatically over the sections which could deal with world over-population, foreign aid, and the need to curb birth rates. It is quite clear that much of the material is steeped in international political controversy, and that the book attempts to steer a political middle-of-the-road course. The result is a neuter, apolitical recipe for the solution of problems which can only be overcome through decisive political leadership. The invidious implication left to nag the reader is that any political-government model whatever will be a workable mechanism in any social or economic circumstance, anywhere in the world. There are two parallel books which should be read directly in conjunction with *Human Settlements: The Environmental Challenge*. First, *Earth Talk*,¹ the product of the anti-United Nations conference, held by a group which disagreed with many of the basic premises of the official conference. This book has its own resolutions and provides a radical other view on many themes. Second, at the Stockholm conference, 1972, Canada suggested that a United Nations conference should be held exclusively on the subject of human settlements. In May, 1973, a United Nations sponsored seminar was held in Vancouver to prepare for the conference and exposition of human settlements, to be held in the same city in 1976. The Canadian government asked Barbara Ward, the Chairman of the seminar to write her personal record of the seminar and her view of the problem of human settlements, and it published the resultant book, *Human Settlements: Crisis and Opportunity*,² by way of preparation for the 1976 conference and exposition.

Human Settlements: The Environmental Challenge is directed more to a reading audience consisting of the knowledgeable layman and the concerned politician, and is directed less to the practicing planner. Yet, it

could serve well as a primer to non-planners or to those who consider entering a planning career. It is easy to read, thought-provoking, and . . . perturbing.

Reiner Jaakson

NOTES

1. Artin, Tom, 'Earth Talk', Grossman, New York, 1973.
2. Ward, Barbara, 'Human Settlements: Crisis and Opportunity', Information Canada, Ottawa, January 1974.

R.W.G. Bryant, *Land, Private Property, Public Control*, Harvest House, Montreal, 1972.

Professor Bryant provides a panoramic view of the tension which exists between the institution of private land ownership and the need for satisfying the public interest in an increasingly complex society. The book starts out with an historical discussion of attitudes held towards land; there are chapters on primitive societies, Rome, Europe, Britain and North America, and for contrast, there is also some discussion of land policy in Israel and Australia. The main body of the text discusses recent North American and Western European practices in dealing with land-related problems.

Professor Bryant draws on a wealth of knowledge of case histories concerning land. The prescriptions and recommendations are not new, but the support marshalled for the prescriptions is voluminous and unique in providing comparisons among widely different countries. Recommendations for site value taxation, land banking for urban growth, and other practices accepted in many Western European countries are supported with numerous examples. The tenor of the discussion is primarily descriptive rather than theoretical.

Perhaps because the emphasis is on pragmatic solutions rather than on theory, the book contains many personal views and judgments in the selection of the examples and commentaries on them. For example, on page 228, the author states: 'America in the 1970's, in fact, is edging towards policies actually adopted in Europe sixty years ago. It

is a question, now, of finding political ways and means of persuading the general public to accept attitudes already common currency among informed people.' Whether America is in the process of adopting, or even should adopt, European values held towards land is a debatable question. As one urban observer commented: 'There is much to be gained from examining the experience of other nations with land use control devices. However, that experience may not be translatable across national boundaries with different political, social and economic institutions and traditions.' (Kamm, 1970). Although the scope of the book does not permit an in-depth comparison and analysis of the differing European and North American institutional frameworks within which land policies function, the view it provides makes for highly enjoyable and informative reading.

If there is a message in the case histories and in the historical outline of attitudes held towards land, it surely must be that land policies evolve out of the institutional, cultural and economic conditions of a society. Professor Bryant carefully traces out the mixed public and private land ownership system of the Incas, a system which evolved in response to their social organization. In contrast to the Incas, the Romans developed the institution of private ownership of land in an attempt to further the organization of their territorial expansion. Later in history, protection services were provided by feudal lords in return for control over land ownership. North American practices, in turn, evolved from the cultural characteristics of the immigrants, from the constitutional framework, as well as from economic objectives for developing a huge land mass, and so we had the great land grabs, the homesteading process and the railroad grants.

Current North American practices in land management appear quite inadequate to the author. The local monopoly over land use controls and the widespread and deeply held belief in the protection of the individual's rights for economic development of his property have become a major source of obstruction to creating a quality urban environment. Another major source of

irritation in shaping the environment, according to Professor Bryant, is our ineffective planning system. Planning shapes the environment by a process which finally results in the distribution and redistribution of land uses. Since land uses are related to land prices, our planning system redistributes land prices, benefitting those individuals whose lands have been designated for intensive development, and vice versa. Professor Bryant argues that planning will remain ineffective unless the economic consequences of planning decisions are neutralized. To support Professor Bryant's thinking relative to the evolution of land policies from societal factors, the 'transfer of development rights' concept developed by John Costonis, should be mentioned; it is a wholly American way for dealing with economic redistributions resulting from urban development decisions, public as well as private. (See, for example, ASPO Magazine, July, 1974.) Some recent developments in North America also lend support to Professor Bryant's arguments, including the shift in land use controls to provincial and state levels and the formation of bodies such as the B.C. Land Commission (Bosselman and Callies, 1971).

Upon reading the book one gradually arrives at a perception that land related issues should be approached from behavioural and institutional perspectives rather than from quantitative and economic perspectives. The development of a land policy for Canada, for example, should really focus more on our beliefs and institutions concerning land than on land market analysis and land use inventories. Professor Bryant's contribution is important. By providing an overview of the historical development of values and practices relative to land, and through this argument that behavioural and institutional factors must be taken into account, the urban planner who reads this book will be better prepared to develop policies relevant to the problems of today.

Andrew Greiner

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L. Bourne, R. MacKinnon, J. Seigel, J. Simmons, Eds., *Urban Futures for Central Canada: perspectives on forecasting urban growth and form*, Toronto: University of Toronto Press, 1974

The editors have provided an excellent format, level of detail and useful contents in this volume.¹ The title encapsulates what the volume is really all about: it brings together all the work done at the Centre for Urban and Community Studies at the University of Toronto on the analysis and prediction of both urban growth and urban form. The techniques of analysis and forecasting are evaluated for the reader at the same time that the results of both these efforts are presented and discussed

This reviewer found another feature of the volume very useful: it brings together (in the form of appendices) the efforts of most other agencies in Canada (and in the U.S.) in analyzing and forecasting urban growth in Ontario and Quebec.

The volume is timely. Local, provincial and federal agencies dealing with economic and regional policy formulation are showing renewed interest in population analysis and forecasting, especially in any and all analytical tools that can deal with the spatial distribution of population. Urban growth management has become a major concern and as a result the economics of population change and growth in North America is beginning to interest not just researchers, but policy makers as well.

The first section of the volume deals with three broad approaches to forecasting urban population and presents the results of the efforts of researchers. In an article entitled "Forecasting Township Populations of Ontario", Les Curry and Geoffrey Bannister present a very useful approach to forecasting

populations of small urban nodes. The method most widely used, involving direct apportionment of larger area forecasts, does not use effectively a forecaster's knowledge of the local area and of past trends elsewhere. Curry and Bannister suggest the use of a statistical technique that incorporates information changes in trends elsewhere and in the past (time-space covariances) for better prediction.

In the same section, John Miron presents the results of a modified shift-share approach to forecasting employment in Metropolitan Toronto. Once again, in an effort to predict long term trends, Miron's approach isolates sources of growth by demand and spatial patterns of production. The method judiciously combines empirical and intuitive knowledge on growth and employment with powerful statistical techniques.

The second section of the book, Growth and the Urban Systems, addresses the topic of linkages and flows. Woodyard's model on migration is interesting, though inconclusive about whether it is applicable over time. Once again however, it is a useful attempt at building a migration model with explanatory parameters.

The chapters on urban linkages (7 & 8) emphasize the limited contribution that readily available data (telephone calls) can make to our understanding of the inter-relationships in the urban system.

Chapter 8 provides regional, economic and labor force projections for Central Canada using conventional techniques. Chapter 9 is a novel attempt to link employment changes in urban centers to industrial composition, by isolating the impact of national and regional 'business' cycles. It combines the principles of central place theory and of functional specialization those of economic cycles to understand better employment fluctuations in urban centers.

Blumenfeld's thoughtful futuristic piece provides the needed balance in this volume for planners who don't savour heavy empirical analyses.

The last section, section III, includes material on the internal structure of the city: land use, transportation, residential location, and suburbanization and 'communities'. The

authors of each one of these pieces has been involved in descriptive-analytical-interpretive research in the functional areas (e.g. land use, transportation); the articles on 'urban futures' reflects this depth.

Urban Futures for Central Canada is the single most important source of information on the Quebec and Ontario Urban System. Its organization ensures its usefulness for a long time to come as a reference volume. Its balanced treatment of analytical methods in

urban research makes the volume indispensable to researchers and policy analysts elsewhere as well.

Nirmala Cherukupalle

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Printed by Brown & Martin Limited
Kingston, Ontario

Imprime par Brown & Martin Limited,
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