

# THE NOLA GREEN MEMORIAL LECTURE: WEDNESDAY 25 MAY 1988 THE NEXT HUNDRED YEARS: A PLANNER'S VIEWPOINT

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The somewhat provocative title to this talk was chosen deliberately. It seems to me that planning is meaningless unless it attempts to deal with the future and therefore the minimum duty of any physical planner is to attempt to forecast future trends, and like any good navigator, advise clients – including the authorities at any level – of the way these trends can best be optimized and in what direction they should be guided.

Such attempts at long-term forecasts are nothing new. Three distinguished examples can be quoted as validating the experiment.

The first covered not one, but two centuries and was made by Vauban, the distinguished French engineer of the 17th century. At the end of a very successful career, shortly after 1700, he calculated that Canada, then a very young French colony, would after 200 years have a population of 10 million – more than half of the total population of France at that time. A courageous effort, with only a 10% error in time and space; for in 1920 Canada's population was 9 million.

The second example was also a Frenchman, De Tocqueville, who at the end of the first part of his masterpiece, "Democracy in America", published in 1835 made a prediction that covered a century and a half, namely that from the combined potential of land and people, only two nations in the future would dominate the world: Russia and the United States. A remarkable insight at that time, the truth of which we are all now too painfully aware.

My third example is much nearer home, in time and space. It was made by my old colleague Professor Denis Fair, who in 1959 using 1951 data, estimated that the population of the PWV in 1981 would be of the order of five and a half million; in 1985 it was six and a half million.

There is one final excuse for attempting to span a century. Johannesburg has just marked the completion of the last century and though this has been undertaken as the Centenary of the city, it is in another sense the Centenary of Modern South Africa, since the history of South Africa as a modern industrialized urban nation only started with the development of the Reef. In fact it really started with those three Glasgow chemists, the two Forrest brothers and MacArthur who invented the cyanide process which so increased the recovery rate of gold, that deep level mining became profitable. For it was only this that created the demand for large scale industrial infrastructure and so the foundation of our industrial system. It therefore seems an appropriate moment to look forwards over the same period as we have just looked back.

My theme this evening is the over-riding importance of urbanisation in the life of any nation, and the way industrial, and now post-industrial, urbanisation is taking all nations affected by it into a new world. Moreover, from an industrial aspect the degree of urbanisation, that is the percentage of the whole population living in cities, is a direct index of the material development of a country; it can become a sensitive barometer of changing social values and priorities; and finally it can be used as an indication of future trends.

But before plunging into the future there are four basic points I want to make about urbanization per se, which are fundamental to any understanding of its significance, present or future.

The first point is that civilisation itself is due entirely to urbanisation. Habits of civilized behaviour, "meeting without fighting" as it has been called, arose only in cities, and cities have been their stronghold ever since. It is often forgotten that three of the four great reli-

gions that have moved the world; Judaism, Christianity and Islam all were born to deal with urban, not rural problems: the problems of close encounters between one's fellow human beings, not the encounter with the natural environment which is the problem of the country dweller. To these great religions it was always the city that was the ideal world, like the new Jerusalem coming down out of heaven or St Augustine's City of God and the most sacred place to all these has always been the city, not the country, where their religion was born. In short civilization is urbanization and without urbanization civilization cannot exist.

The second point is that we are dealing today with industrial urbanization, with according to Kingsley-Davis, a high correlation factor of 0,86 world wide, between the two components. This type of urbanization which started 200 years ago with a wholly new source of power, gave a new direction to society in two ways: a vastly increased productivity per worker and secondly, in consequence, a drastic reduction in working time – the combination giving far more consumer goods available and far more time to use them. These benefits can only occur in cities where the economics of proximity, scale and location can be optimized and where these increased benefits can fuel a permanent on-going process of adaption and invention. This internal dynamic of cities, which is the life-blood of modern societies, depends of course on the degrees of skill and commitment that are devoted to it.

The third point is that cities have from their beginning, mostly grown not from their own natural increase of population, but from immigrants coming to them from elsewhere: from rural districts or other countries where conditions were inferior. The traditional tendency expanded to massive proportions with the new industrial urbanisation and

the urban expansion which has created our present standard of living would have been impossible without this immigration. The price to be paid for this increase in living standards is obvious: the creation of new skills through education to permit these re-educated immigrants to be absorbed into city life as quickly as possible to maximise the productivity and preserve the on-going increase in living standards.

The fourth point, often forgotten by the city dweller but never by the country dweller, is that change suffered by all immigrants from rural habits and values to urban habits and values. This has always been, and will always remain, a major trauma – social, economic and psychological. I speak with feeling since I have suffered it myself. I shall never forget the kind of wild panic and terror I felt when, coming from a small village of 400 people, I found myself on my first day alone as a student in London. After a week I must admit I took to it like a duck to water and I have loved the city as a human artifact ever since. Converts to a new faith are always the most fanatic.

To the countryman on the outside looking in, the city can only be a terrifying object of suspicion, a dangerous solvent of an accepted culture and a threat to a stable and habitual way of life. This fear is fully justified since city life demands two major revolutions in our habits: the dissolution of existing social relationships and the creation of substitutes and re-training for new urban skills to take the place of the now useless rural skills. The interval required to gain those new skills for the countryman – often a generation or even more – means that city growth by immigration always includes large masses of poor people slowly being absorbed into the city system, and the space created by upward mobility is at once taken by more immigrants so that the problem can remain for many generations. For Britain, for instance, which pioneered the new industrial urbanisation over a century and a half ago the problem of the recent influx of poor immigrants from other parts of the world ensured the survival of this problem till the present. The riots of the poor and the disenfranchised are the expression, fundamentally, of the trials and tribulation of this traumatic process. Once made productive and settled into urban life the pain of

the poor begins to dissolve: so the sooner this happens the better for everyone, both the rich and the poor.

To get back to modern urbanisation after those background remarks. From the preindustrial average of 10% or less the urbanisation ratio rose to 25% and then to its first important threshold of 50%; and it has continued to rise in the older developed countries to an apparent ceiling – Germany 85%, Australia 86%, Sweden and Belgium 87%, Netherlands 89% and Britain, the most urbanized country, 91% with only 2% of its workers engaged in farming or rural occupations. The only place which is statistically 100% urbanized is, significantly not a country but a city, the City State of Singapore.

In this race to urbanisation one factor has become very apparent, world wide: the bigger the city, the bigger the attraction. The leading primate cities have always grown faster than all the others and the reason is plain: the bigger the city, the greater, wider and deeper the demand for labour of all kinds. This pull of the big city has created further urban thresholds – for instance, 50% of the population living in cities of 100,000 or more, which Britain passed in 1920, or still further thresholds of 50% in cities of over one million, or 50% in cities of even ten million – will almost certainly be passed somewhere in the next century as the whole world approaches 90% urbanisation dominated by giant cities of many millions.

At that point, with the experience of the developed nations as a guide, world population is likely to level off to zero, and later, negative growth.

Of all these thresholds, the most critical is clearly the 50% for here; for the first time, the balance between country and city begins to shift towards the city. One British writer called it “a date of unforgettable significance” the point of no return when rural values and habits give way to urban equivalents for a growing majority, so that the whole economy and philosophy of a country begins to take a new direction. It is therefore the moment of the greatest trauma when conflict is most violent, decisions most devious and uncertainty and doubt universal.

South Africa stands now in this Great Divide of 50% urbanisation, and this is the fundamental reason for all our ten-

sions, conflicts and violent cross-currents that divide us. We stand at this watershed of the two worlds: the country pulling one way, the city the other with either side little prepared for their future roles in a mature urbanized society.

It is a Great Divide in another sense: It separates us from the rest of Africa, South of the Sahara. The nearest any African state in that area has got to this point of urbanisation is Zambia at 36%, Zaire at 30% and our neighbour Zimbabwe 20%. The rest vary from Nigeria's 18% down to Malawi's 6%. It is clear Africa can be no guide; any parallels to indicate our likely future can only be found in the older industrialized nations in Europe or North America. Here we are on much firmer ground. Britain was the first in this field, passing the 50% point in 1860; Germany next, shortly before 1900; United States and Canada in 1920; France in 1927 and the Soviet Union only in the late 1960's a century after Britain.

For a number of reasons, Britain in 1860 happens to offer a series of interesting parallels to ourselves at this very significant moment of our country's history. Britain was, in the first place, the same size as ourselves and had therefore the same problems of scale – thirty million total population – and it was like ourselves drastically divided socially.

Secondly, the primate city-region, the Greater London Region was about the same size as the Central Witwatersrand – including Soweto and Johannesburg – namely three million.

Thirdly, the poverty component of this three million, was two-thirds of the whole: two million in London's East End compared to the two million in Soweto plus the Central Reef black townships. Here is a description of London's East End made in 1870 by Walter Besant, which carries many echoes of Soweto:

“It is a city full of churches and places of worship, but there are no Cathedrals. It has elementary schools but no private or high schools, no colleges of higher education and no university. There are no fashionable quarters. People, shops, houses, conveyances are all stamped with the unmistakable seal of the working class. Perhaps the strangest thing of all this in a city of two million people, there are no hotels. This means of course there are no visitors.”

Britain was, as Disraeli described in his novel "Sybil", a world of two distinct nations, almost totally unknown to each other.

Fourthly, Britain in 1860 had just completed her new railway network, together with mainline terminals in all the larger cities, which immediately made her previous transportation network of turnpike roads completely out-of-date. We in South Africa are now completing our new network of motorways which together with the air network are making our railways out-of-date. Now transportation methods always mark the start of a new age.

Fifthly, there was in Britain shortly after 1860, a slow and cautious extension of the franchise. The Reform Act of 1867 gave the vote to urban adult males occupying property of not less than ten Pounds in annual value. Shortly afterward the Conservatives, not to be outdone, extended a similar privilege to rural adult males. It is to be noted that adult females, rural or urban, never got the vote until 60 years later – 1927.

Sixthly, education for the first time in Britain was made compulsory, universal and free – but only up to the age of 12. Thirty years later in 1900 it was estimated only one in 70 children ever reached high school. But however limited it acknowledged the basic fact that urbanisation once past the 50% mark must have education to enable it to operate, or even survive. We ourselves are now busy in a huge education drive.

Lastly, and most significantly of all, Trade Unions were legalized by the Trade Union Act of 1871 which gave the right to workers, in most fields, to organise themselves for their own advancement and betterment. We have just done the same in South Africa – another necessary concomitant to urbanisation, new urban relationships based on work taking the place of the older, now useless, rural labour relationships. The Trade Union movement in Britain was historically the source of the Radical Party, which later became the Labour Party: but it took that Party no less than seventy five years to achieve political power in 1945 and then only after the national trauma of two world wars and the vast loss of overseas capital investment those wars entailed.

Britain is not the only useful model.

The United States, long before it passed its 50% mark, showed all the growing pains of urbanisation, stretching back well into the 19th Century: The U.S. had to engineer its education to include all its poorest citizens; to accept the need for Trade Unions and for the extension of the franchise to all its citizens.

In this way the track record of both the United States and Britain can be used as useful guides to the kind of road, social, economic and political, we will have to travel during the next century. Someone recently said history does repeat itself because no one ever listens. Perhaps sometimes it is worth listening, for I believe similar conditions produce similar results, just like a chemical reaction.

With that piece of history in mind, our position in South Africa is not unique at all, but absolutely normal: we are simply going through the most critical stage of urbanisation that every developed country has gone through on its way to urban maturity.

But I should have added "almost" for there are at least four significant differences between ourselves and either Britain or the U.S. which will affect any estimate of our future century.

The first is we had no industrial grass roots. In an Africa that had never known the wheel, the plough, or writing of any kind there could never be a distinct class of blacksmiths, wheelwrights or clockmakers, as in Europe, to help make the first industrial machines; nor any village spinners and weavers to help man the clothing factories. We had to start from scratch, or import, training as we worked. We had to jump over a technological gap of several thousand years;

The second difference turned out a help as well as a hindrance: we never lost our agricultural base and were always able more or less to feed ourselves. Britain on the contrary destroyed her agricultural base and was in danger of starving to death in two world wars. But on the other hand the retention of that base had made our urbanisation much slower.

The third difference is that we have advanced technical know-how available from the outside world even if sanctions bite us: Britain and the U.S. being the first in the field had to make all the advances from scratch, on their own, without aid from anyone. We are there-

fore being given a lapstart and although this increased the gap and therefore the tension between top skills and much of the labour force, it also acts as a forced draught in the urban furnace, making all involved keener to bridge the gap at top speed so as not to be left behind.

The fourth difference is the most obvious one: we are subject to continuous chanting from spectators on all the sidelines of the world. Whether we like it or not, this constant barrage of criticism cannot but remind us of the urgent need to close the gap between our own and more mature societies.

## PROSPECT OF THE FUTURE

These comparisons with their differences, fix our position firmly in the race for the urbanisation stakes. That being so what is our population likely to be, what will be their lifestyle and therefore what extent and shape will the future urbanisation be likely to take?

## POPULATION

The present population of the Republic, in rounded figures, is thirty-six million, and the present annual officially accepted growth rate 2,3%. Experience elsewhere shows that growth rates decline with urbanisation and further, that a century after the 50% urbanisation date, growth becomes very close to zero, Britain between 1970 and 1980 had less than 0,03% annual growth; France today about 80% urbanized, is approaching zero growth and in the Netherlands, over 88% urbanized, actual negative growth after the last war was only turned into zero growth by immigration of foreign workers.

These examples suggest zero growth goes with 90% urbanisation and if we will be at that state a century hence, then the critical ceiling for population will be the probable total capacity of the country to accommodate its population. France, with one dominant concentration at Paris, and large empty areas in the centre, carries an overall density of 100 persons per km sq; Britain 200, the Netherlands 350, Japan 375, while the United States is only 25.

France seems a reasonable parallel to guide us, with our own major concentration in the PWV and large empty areas in the Karoo. France's density of 100 km sq would give us 100 – 130 million or more by the year 2090.

France's Paris region, like London carries one fifth of the total: that would give us twenty million in the PWV by 2090, with perhaps an overrun to 25 due to the close proximity of Pretoria and Johannesburg. The next concentration will without doubt be the Durban regions, the port of the PWV, and fed by Kwa Zulu, with probably ten million: another ten million in Cape Town and the Eastern Province towns and the remaining forty-five million distributed among the rest of towns on the coasts or in the interior, leaving only ten million in the rural areas.

## LIFE-STYLE

What will be the life-style of these future citizens? We start with two great advantages: firstly we have a tremendous diversity of culture and skills from Africa, Europe and the East, giving an invaluable dynamic for the future, and secondly we have a well developed power base of 3 000 kwh per caput, slightly higher than Singapore's 2 500 far above Mexico's 600, Egypt's 320 or India's 200; but still below Britain or France's 5 000, Sweden's 12 000 or Norway's 20 000, the highest in the world.

With this base, training and education will be our main preoccupation for many years: both basic and mid-career to keep continuous up-dating of all ranges of skills. For the first 25 years we will be forced to industrialize large sectors on a labour-intensive basis, but the greater our effort in education, the sooner will capital-intensive leading sectors take over, with the informal sector taking up the slack of resulting unemployment. This will grow steadily throughout that whole period: with 90% urbanisation in Britain, the informal sector is officially estimated at 15%, but unofficially 30%, of the GDP – the sure sign of a growing do-it-yourself society. We may be sure we will be travelling the same road – and should encourage it.

This is the new world of Alvin Toffler with power based on control of information and the "Electronic Cottage" the channel for its use. Far more work at home, with far greater instant communication to and from the cottage, world-wide; instant data retrieval, quicker and more reliable decisions with occasional visits to big centres for personal contact to coordinate longer term policy. Far more commuting world wide, far less locally, as we almost drift with-

out knowing it into an international system.

This world will be hitting us within the next 50 years with automation taking over more and more of the manufacturing world. People as workers will become more and more superfluous and replacement activities will become a major industry – a huge proliferation of professional and amateur sport combined with the widest expansion of all kinds of personal hobbies elevated to professions: a world in which the difficulty will be which hobby to choose. Producers, as Toffler says, will become their own consumers and the excess of leisure a major problem. This will distance us more and more from the rest of Africa, resulting in increased immigration, and increased population and urbanisation.

## THE NEW URBANISATION

What form will the new urbanisation take to accommodate this increase of people? Urbanisation is essentially a lumpy process, the opposite of oil spreading evenly on the surface of water. It is like the product of electrostatic precipitation: it collects hard nodules of intense activity, but with extremely strong links of all kinds between the nodules – in short a system of nodes and networks. In the future world the networks will be as, if not more important than the nodes, for they will be the nerve system of the new urbanisation – carrying every possible form of movement – data, ideas, goods, people – as fast and as instant as possible – for time is productivity. The importance of this network system is that it will give the one element vital to a mature society – the element of choice.

Some people will prefer to live in the close centres of the larger nodes with higher densities, other further out with lower but still compact densities and others seeking much greater isolation on the edge of the open spaces; difference with many variations in between. This will be the form of Toffler's new demassifying world – not a world of complete disintegration, but a world of the widest possible choice, to optimize the widest diversity of human skills and preferences. In such a world the home could become again the nerve centre of existence, the generator and support of a new continuous and more pervasive humanism. The values and habits in

this new world will still be largely urban – with all the virtues and benefits of close human association as and when required – the varying mixtures of privacy and company all dependant on the efficiency of the network. In this system of nodes and networks, however, much greater densities – triple or quadruple the present – will become tolerated as urbanisation deepens and extends its range.

## PRIORITIES

In such an urban pattern, to ensure quality as well as quantity, four planning components can be singled out as priorities: the expansion and improvement of the whole open space system; new forms of transport to service far higher densities; a policy that will turn new housing areas – including shacks – into coherent balanced communities and finally habits of active public participation in the planning process.

Of these, the open space network is by far the most important, because it is often the forgotten child, the Cinderella of planning. The increase in all forms of sport and recreation, passive and active, at all income levels, means that the safeguarding of a comprehensive open space system, interlacing all densities, is absolutely vital to future health; and it must be done in advance of, not after development.

One example near home merits mention: the ideal of keeping as open space the four quadrants formed by the E-W and N-S axes of the PWV is no longer possible. Of these the S-W and N-E have virtually been lost, to urbanisation and the Bapsfontein railway yards; the S-E has been saved by the Suikerbosrand Reserve which leaves the N-W the only remaining large reserve area. The urgency of preserving and expanding this sector is obvious. But if there is the danger of the city invading the country – as it will – then the country must counter attack and invade the city. Wild-life in metropolitan areas is now a subject for conferences in Europe and city hiking trails have become an accepted component of an urban space system.

Here I would like to pause for a moment to pay a tribute, most appropriate tonight, of the enthusiasm and dedication Nola Green gave to the establishment of the Johannesburg and Sandton na-

ture trails, which can be the pointer to the future of a great extended system enabling one to hike from one's home all the way to a regional reserve,

After the open space system the next priority for future plans will be new forms of transport: rapid transit to service the higher densities within the cities and fast bullet trains, like the French TGV, linking, say, Durban and Johannesburg's CBD's within 3 hours; competitive with air transport when city to airport time is added.

The third essential needs no emphasis to this audience: the importance of planning all emergency housing and squatter camps in such a way that their street systems will permit their growth into coherent self-governing communities, new towns in time, with full social equipment.

The last priority is public participation in planning issues: Responsible, representative and continuous, the grass-roots of what Toffler sees as the "participatory democracy" of the future, where citizen commitment to current public affairs is no longer limited to an occasional ballot box.

## CONCLUSION

A leader in the private sector recently called for a vision of the future with which all South Africans could agree. Now just as housing should be affordable, I think visions should be attainable

and so I would like to suggest this evening that one such vision could be *The City of Equal Opportunity*: A place where the challenge of living is free and open to all who are prepared to accept its risks as well as its possible rewards. For only such an open city can give to each and every one of us sufficient freedom to realise both our individual and our social potentials. Because that's what city life is all about. It is only the City, and the Big City within a system of cities that can provide the base for maximization of the full human potential of our country.

What is holding us back from realising such a vision? I have a feeling it is only Fear – a fear of the City, fear of the Big City and we know too well that fear makes cowards of us all. Throw out fear and the City of Equal Opportunity can become the lifeline to the new society of the future.

Fourastie, the French analyst of futures, said he hoped the 20th century would be remembered not as the age of the invention of the atom bomb or the putting of men on the moon, but as the age of the birth and childhood of the human sciences – the sciences that explore the patterns of human behaviour and the roots of violence. Our technology has far outstripped our knowledge, still more our control, of human nature and the widening gap is becoming critical for human survival. Possible solutions to that problem such as human genetic

engineering are, I think, beyond even the next century, and in any case certainly beyond my present terms of reference this evening.

Let us hope, Fourastie said, that the 21st century will see the maturity of these human sciences, so that all societies will have the necessary knowledge and skills of how better to order and develop themselves, for their greater happiness and well-being. In such a future the art of living in cities may have unlocked again the old secret of civilisation, that of "meeting without fighting".

I can only end by reminding you, as a guide to this next century now upon us, of an old Roman saying made in that brutal yet fertile mix-up of races and cultures that later was to fall together to form the Roman Empire: "I am a human being and I reckon nothing human can ever be alien to me."

In the present mix-up of our own society such a message is more vital and relevant today than ever before. It is only with such a faith in the common humanity of all our peoples that we can ever hope to achieve our full potential, and to give to the future the possibility of making any claim to excellence or greatness. It is up to us now, as planners, to do everything in our power both as professionals and as citizens, to help make such a future possible.

Thank you Mr Chairman.