

WORK AND THE CITY

FRANK DUFFY

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THE EDGE
FUTURES

80 COLOPHON

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10a Acton Street
London WC1X 9NG
T. +44 (0)20 7613 1922
F. +44 (0)20 7613 1944
E. info@blackdogonline.com
W. www.blackdogonline.com

Designed by Draught Associates

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A SOCIOLOGICAL CRITIQUE OF THE MODERN MOVEMENT

Siegfried Giedion's great theme in *Mechanisation Takes Command* is that the industrial logic of Taylorism or "Scientific Management", as it used to be called, is closely allied to the values and aspirations of the Modern Movement in architecture. Architecture, like management, is never independent of politics.¹¹

The more architecture and management are presented as rational, value free and inevitable, the more dangerous are the probable social and political consequences.

¹¹ Giedion, Siegfried, *Mechanisation Takes Command*, Oxford: Oxford University Press, 1948

Richard Sennett, the sociologist, has brought this argument up to date. He accuses Modern Movement architecture and urban design of three addictive vices:

- Addiction to the large scale. Buildings, particularly office buildings, have tended to become bigger and cruder over the twentieth century.
- Addiction to over-determined, over prescriptive building forms. Sennett uses the term 'brittle' to describe the consequent fragility and vulnerability of mono-functional buildings, including, of course, many office buildings, which are unlikely to be able to accommodate change.
- Addiction to centripetal patterns of urban development; the planners of which seem to be obsessed by concentrating on 'centres'; leading to the gross neglect of interstitial and peripheral spaces and to the erosion of the public realm.

The consequence of these tendencies is well illustrated by an exercise I conducted in 2007 with a class of Masters students from the Design School at Kingston University. Part of the intention of the exercise was to familiarise the students—most of whom were from abroad—with London since they knew little of the function, texture and meaning of the various parts of the city. From my perspective the more important part of the exercise was to compare the utility, the value and the meaning of contrasting urban forms. Consequently the students were asked to explore and report their impressions of Canary Wharf and Soho; two similarly sized chunks of London's urban fabric, each very different in physical character and in patterns of use. Canary Wharf and Soho are both economically vigorous, having attracted very different sectors in different ways. Canary Wharf accommodates large banks and closely connected financial service organisations, including some of the biggest law and accountancy practices. Soho has been successful in attracting the film industry in the form of a wide range of post-production houses, as well as fashion businesses, tourism and many forms of entertainment.



Canary Wharf



Soho

Soho's physical fabric is a low-rise but still relatively dense eighteenth century domestic pattern of narrow streets and squares overlaid by many nineteenth and twentieth century interventions and additions, including retailing and a large amount of warehouse and semi industrial space, much of which has been extensively converted to accommodate post-industrial uses. Canary Wharf, unlike Soho, has been created almost instantaneously within the last two decades on a narrow strip of land between two redundant docks. Canary Wharf is new, largely mono-functional and is dramatically cut off from the surrounding area. In urban terms the Wharf's model is the not unlike the downtown of a moderately successful, mid-sized North American city but more concentrated and without a hinterland.

Canary Wharf
Security

I asked the students to decide which of these two very different models of urban fabric would stand a better chance of remaining in beneficial use in the year 2030. Richard Sennett's criterion of not being 'brittle', i.e. having the capacity to accommodate diversity and continuing change, is particularly relevant here. The images selected by the students to illustrate their comparisons included, in the case of Soho, one astonishingly densely populated restaurant map of the area—there can be no better image of controlled permeability than a thousand highly varied and infinitely welcoming restaurant and cafe doors. On the other hand, many of the images used by the students to describe Canary Wharf emphasised techniques of exclusion—by guards and gates, by cameras and cops. From the students' perspective, the high levels of security characteristic of Canary Wharf killed permeability. Stringent security may be inevitable in post 9/11, early twenty-first century urbanism. Nevertheless Canary Wharf's manifestations of security were not easy for my students to condone—overt, controlling, spilling out into the streets, contaminating the public realm.

Combining accessibility with security is not new in urbanism. The same challenge has been tackled before, both urbanistically and architecturally, in more inventive and civilised ways. For example,



The Bank of
England

since the London of the 1820s was a chronically violent and unsafe place, Sir John Soane's new building for the Bank of England was designed to be a fortress, with pickets of armed guards and without any windows at all in its famously impregnable facade.¹² However, once within, the bank's plan opened up into a series of highly interconnected top-lit courts and banking halls, each used for a different aspect of the bank's business—courts leading onto courts, a city within a city. Within the outer curtain of external security and given protocols and rules to facilitate access for those who had the right and the need to enter, a large part of the interior of the bank was designed to be accessible not only to the financial services industry of the day but was also made available to a wider and, of course, privileged section of the public, including, as actually happened, tourists looking for amusement, interest and stimulation. Meanwhile, underneath their feet, in the vaults, under conditions of the highest security, lay the nation's reserve of gold. What the memory of Soane's extraordinary building demonstrates is that it is possible to take security into account and yet simultaneously achieve, through designing a series of attractive, accessible and even popular places, great architecture and great urbanism.

12 Abramson, Daniel M, *Building the Bank of England*, New Haven, CT: Yale University Press, 2005

To invent appropriate forms for the cities and buildings of the twenty-first century and to create open but secure environments for the enterprises that will be increasingly characteristic of the complex, fluid and interactive knowledge economy, we will need to reverse the unfortunate way, accurately diagnosed by Richard Sennett, in which cities and buildings have been shaped by the habits and presumptions of the industrial era.¹³

How can cities be designed to provide close adjacencies between different scales of workplace and many complementary functions? How can we create matrices of stimulating and attractive places where the probability of interaction of all kinds, social, intellectual, commercial, is stimulated, perhaps to the margins of inevitability? It is striking that the three world cities in which such conditions still exist to a large extent; London, New York and Paris; are cities which are densely developed, share the benefits of a mix of grandeur and ordinariness, are endowed with a high degree of physical complexity and whose long histories of growth and development antedate the Modern Movement.

13 Talk give by Richard Sennett at the Urban Age Conference in Mumbai, 2007

HOW BUILDINGS LEARN

New thinking about the nature of office buildings and about how they should be delivered is necessary at a time such as the present, when there is great likelihood of change.

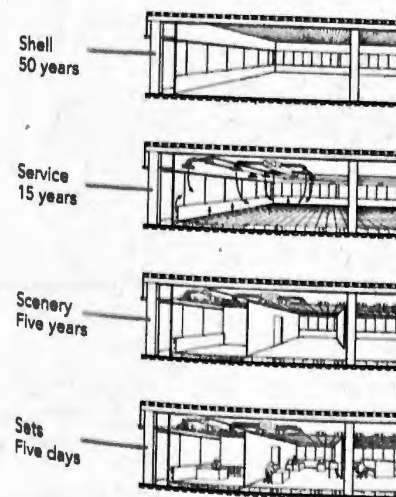
Office buildings and time are highly correlated. When I was a masters student in the School of Architecture at Berkeley in 1967–1968, one of the most admired professors was Christopher Alexander, who had recently invented what he called "the Pattern Language", a design based on assembling essential design propositions, each capturing a balance of social or environmental forces.

Some of Alexander's patterns are small-scale and domestic, others reach out to address urban issues. Once a pattern is articulated, it is in the public realm and can be replicated and related to other patterns to assemble environments cumulatively which are increasingly free of the blunders and contradictions that disfigure so many of our buildings and cities.

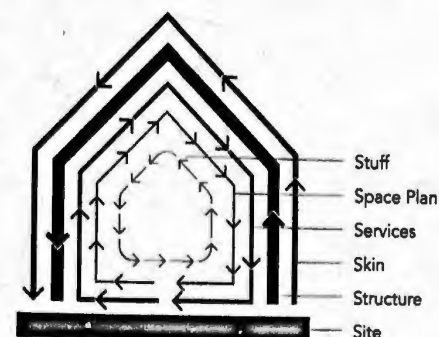
Alexander's title for the first book in his series promoting the Pattern Language is *The Timeless Way of Building*.¹⁹ I learned many things from Christopher Alexander but perhaps the most important is negative: buildings are anything but timeless. They are, in fact, very much the opposite: not so much built out of eternal bronze and marble, nor even concrete, steel and glass but out of a whole series of layers of materials with varying degrees of longevity. Some elements of buildings are long lasting, capable of persisting potentially for centuries. Others are designed to respond to corporate clients' medium-term requirements. Yet other elements are intended to satisfy individual users' sometimes very short-term needs.²⁰

19 Alexander, Christopher, *The Timeless Way of Building*, Oxford: Oxford University Press, 1979

20 Duffy, Cave, Worthington, *Planning Office Space*, London: The Architectural Press, 1976



Shell, Services, Scenery, Sets.



Site, Structure, Services, Scenery, Sets, Stuff

This point of view is well expressed by Stewart Brand in his book, *How Buildings Learn*.²¹ Brand is fascinated by what happens to buildings after they are built and is interested in what makes it possible for both buildings and cities to mature and develop. "Structures persist", "interiors are flighty", "buildings tell stories", are three key phrases from his book. The most successful buildings and cities, according to Brand, are those that have the capacity to accommodate multiple interventions by users over the years, decades and centuries in a welcoming and graceful way.

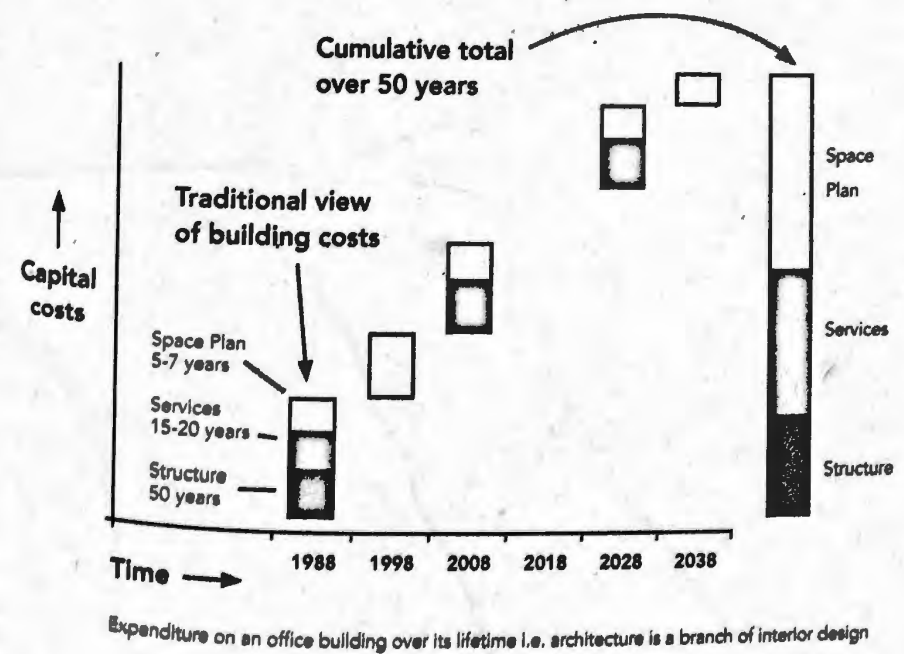
21 Brand, Stewart, *How Buildings Learn*, New York: Viking Press, 1994

I had learned the practical essentials of what became Brand's theme somewhat earlier, in New York, in the late 1960s when I first came into contact with space planning practice, an area of professional design activity that was little-known and less understood in Europe at the time. Space planning is based on a sharp and highly practical division between design responsibilities related directly to the longevity of the things designed.

This system, also invented within the early twentieth century explosion of invention in American real estate and construction practice described above, is in itself a very Tayloristic, divide and rule, concept. Architects, working for developers, design office building shells, i.e. foundations, roof, structure and skin; anticipating a life expectancy of several decades, let us say 50 years. Service engineers, also working for developers, design air conditioning, elevators and other major items of building services to fit within the shell, anticipating a life expectancy of only 15 or so years, because of the more transitory nature and more rapid obsolescence of mechanical equipment. Space planners and interior designers work not for the developer but instead for the corporate clients who are to become the tenants of the developer, tenants whose time horizon is business related and consequently relatively short-term. Such tenants rarely expect to occupy the space that is fitted out for them for longer than a decade. Their actual duration of occupancy is often much shorter. This is the layer of longevity that I have called 'scenery', because of its resemblance to the ever changing apparatus we associate

with the stage. The elements of scenery of 'fit out' as it is usually called—partitions, floor finishes, reception areas and furniture layouts—have a life expectancy of perhaps five to seven years depending partly upon the materiality of their products but more substantially and ultimately financially upon the terms of the leases of corporate clients. Within the premises occupied by tenant businesses, there are other layers of even more rapid transition. On a day-by-day, week-by-week, month-by-month basis, facilities managers and the office workers themselves constantly shift and rearrange the scenery as their business requirements change.

"Shell, services, scenery and sets" is a way of distinguishing between these different degrees of longevity. This concept, which I helped to introduce into a sceptical Europe in the early 1970s, which is so practical and yet in many ways so elegant, has structured my professional life ever since. It is as classic an example of American, labour-saving ingenuity as the examples that so impressed Giedion, such as the balloon frame and the



production line. The idea is simple, and impersonal. It works, like the 'cube' discussed above, because the system assumes minimum communication between and maximum labour-saving among all the parties involved. It does not depend upon people knowing, understanding and liking each other: the division between the axes of architect/developer and space planner/corporate client is notorious for generating mutual suspicion and scorn. And yet the Taylorist Office has survived for over 100 years.



Centraal
Beheer, Herman
Hertzberger, 1972

22 Duffy, Francis,
*The Changing
Workplace*, London:
Phaidon, 1992,
pp. 104–113

Professional rivalry is exacerbated by economic factors. The amount of money spent once and for all on the long-term office building shell is generally far less than the sum spent cumulatively on scenery, perhaps five or six times in the normal life of an office building. "Hacks" is how I remember the architect, Philip Johnson, characterising space planners. Some interior designers argue that office architecture is simply a framework on which multiple layers of interior design can be hung, making architecture, financially speaking at any rate, a branch of interior design. Not many architects agree with this.

As I was trying to articulate the virtues of this American system for a European audience in the early 1970s I came across a rare but beautiful European example of a similar but more ideological approach to exploiting for architectural purposes the contrast between the semi-eternal nature of primary architectural forms and individual control over the short-term elements of the office interior. This was Herman Hertzberger's Centraal Beheer office building in Apeldoorn—a low-rise office building designed like an Italian village: strong and powerful, inside and out, full of voids and streets, a Platonic, pure, quasi-eternal view of architectural form.²² Within this architectural shell the client, encouraged by Hertzberger, permitted the users to make themselves literally at home, bringing into the office their own self-selected furniture, posters and decorations, plants and even pets.

The architect's idea was that the users had the right to appropriate their workplaces. The frisson between long term architecture and personal choice was the idea that Hertzberger exploited formally in a very beautiful way. The reason that his notion was never replicated was because it was quickly overtaken by the parallel emergence of the much more cellular, and hence much more popular, Social Democratic office.

Totally contrasting in terms of ideas, even if it is in some ways formally similar to Centraal Beheer, is one of the most iconic—in every sense—office buildings of the early twentieth century, Frank Lloyd Wright's long demolished Larkin Building in Buffalo, New York, the relatively small, administrative centre from which the Larkin organisation's vast, surrounding array of factories and warehouses was controlled. This interior, used by Galloway as the frontispiece to his Taylorist textbook on office management, is a perfect image of a culture of control.²³ White bloused women 'typewriters' sit between black coated male clerks on steel desks purpose designed by Lloyd Wright himself of which the chief feature was that the swivel seats were cantilevered from the desk. Everyone who worked in that office had their degrees of freedom literally and figuratively controlled. The great architect himself, who thought he was a free spirit, was, as Jack Quinan has documented, very much under the control of the Larkin brothers, his clients, also geniuses, who did not hesitate to exploit Wright's talent remorselessly to express their own version of modernity.²⁴

23 Galloway,
L, *Office
Management:
its Principles and
Practice*, Oxford:
The Ronald
Press, 1918

24 Quinan,
Jack, *Frank
Lloyd Wright's
Larkin Building*,
Cambridge, MA:
MIT Press, 1987



NEW TEMPORAL AND SPATIAL CONVENTIONS

What new temporal and spatial conventions will be appropriate for a networked society in which ubiquitous, powerful and reliable information technology is rapidly eroding the outmoded spatial and temporal conventions of the nineteenth and twentieth centuries?

Today the nine to five timetable is becoming almost as anachronistic as the Angelus bell. Increasing mobility means that the office is no longer a stable entity in terms of place—office work can be carried out anywhere. Universal connectivity means that work is no longer constrained by temporal conventions since any connection can be made anywhere by anyone at any time.

New geographies, kinds of places and timetables are being negotiated by people who move from place to place both within and outside the conventional office. Such a high degree of mobility means that few constraints remain to determine when work ends and when the rest of life, including family and social interactions as well as leisure and intellectual and physical stimuli, begins.

Within these new dimensions of potential freedom knowledge workers can change their life styles—beneficially in many cases by making possible in different degrees a more civilised and fulfilling balance between where and when they live and work. It is arguable that many women have already benefited more than men. However, there is a dark side to this picture. Many people of both sexes are still conspicuously unsuccessful in finding a satisfying balance between work and life. In fact, is “balance” really the best word to describe the consequences of the invasion of private lives by devices such as the BlackBerry which buzzes away on the desk, at the kitchen table and by the bedside, generously delivering the 24/7 accessibility which technology has made possible? Perhaps slavery would be a closer descriptor of this new condition. What is clear is that one of the biggest challenges of the twenty-first century—even more crucial than the redesign of spatial conventions, important and closely related as time and space certainly are—is the development of new conventions in the use of time that would allow people to protect themselves from exploitation and to take advantage of the theoretical benefits that technology offers.

Redesigning the use of time implies the redesign of the physical realm. To rethink the workplace we need a much better idea of what temporal freedom and increasing mobility will mean not just within office buildings but everywhere else in the increasingly fluid and all encompassing world of work.

For example, over the last decade methods of mapping mobility in the workplace have been developed. As pointed

out earlier, these demonstrate that the proportion of the working day spent by office workers within office buildings at their own individual workstations peaks at 40 per cent. This proportion is probably declining, although the task of conducting a longitudinal analysis of data collected over this decade remains to be attempted. There is another obvious weakness in this method of data collection within the context of the wider argument being developed in this book. It is relatively easy for observers, equipped with hand held devices and following predetermined routes though office floors, to record hour by hour, over the conventional period of ten working days, whether or not office workers are in the workplace and, if so, whether they are at their desks.

However, it is much more difficult to measure what office workers are doing when they are mobile and off site. Self-reporting is unlikely to provide an accurate answer: it has been found that respondents, when asked to estimate how much time they spend at their workplaces, give very consistent but highly inaccurate replies. Actual workplace occupancy is half what people report.

Another technique, which has ironic overtones for me—a convert from Taylorism still in love with measurement—is to record the growth of the proportion of internal office space that is given over not to individual workplaces but to collective activities—particularly meeting rooms, meeting spaces, social hubs and gathering points of increasing diversity. Over my working life time the proportion of collective as opposed to individual space has risen from less than ten per cent to as much as 40 per cent and in some cases even more. Again these data are tantalisingly incomplete because in their present form they cannot cover what I suspect may be an even greater rise in the use of semi-public venues (such as Starbucks) for impromptu, off site, frequently inter-organisational meetings nor for the frequent use of off site hotels and conference centres for training and other similar events.

What these data, incomplete as they are, do clearly show is that, as the knowledge economy develops, work is becoming more plural, more social and less confined within conventional organisational boundaries. Knowledge work, almost by definition, will focus more and more on communicating, sharing and developing ideas; which are inherently communal activities, impossible for solitary individuals to perform. Meanwhile, old fashioned, individual office work consisting of elementary, repetitive tasks is being remorselessly automated. Solitary, concentrated, intellectual tasks can be carried out in many other places besides the office.

The big, open-ended question is, "Why should empowered and self-reliant people, equipped with increasingly powerful information technology, ever come to work at all?" A large part of the answer is obviously to communicate with their fellow workers and, no doubt, also to enjoy their company. All of which explains the banal observation frequently made that many contemporary office interiors are beginning to look more and more like coffee bars.

A new vocabulary is emerging to describe the widening range of mobile work experiences and work styles—"anchors and residents", "drop in centres", "virtual working", "concentrated" versus "collaborative" work. Office workers, equipped with increasingly powerful technology are making their own decisions about when and where to work. A map of the spatial configuration of many businesses has become a global network of interactions. Core physical space is diminishing while interactions that transcend and spill beyond the walls of office buildings are multiplying. As communications and mobility within and between offices increase, managing such universes of interconnectivity has become a major corporate responsibility.

And yet paradoxically, despite increasing corporate dispersion, cities persist and are becoming bigger, busier and more crowded every year. One way of explaining this apparently contradictory phenomenon is that city life is also becoming increasingly networked—perhaps even more intensely but at a much more local scale. Virtuality seems to be complementary to physicality. The most successful and congenial cities are the ones that have the greatest density of overlapping social networks, some physical, others electronic.

It is the extent of leakage between such networks that creates serendipity, Horace Walpole's neologism for taking advantage of unplanned but not totally unpredicted and certainly not undesired social and business encounters. Dense, overlapping, local social networks are a phenomenon of the knowledge economy that, like a kind of interactive compost seems to generate social energy and makes cities such interesting and useful places to inhabit.

MOBILITY AND PERMEABILITY

Mobile working, although vastly enhanced by information technology, is not entirely new. If you don't believe this, read Pepys' diary.

Pepys as a young servant of the Crown was always on the move—leaving his house near the Tower to go to his office next door (he was nearly but not quite a home worker); visiting his uncle in the country; down the river by wherry to supervise victualling at the Naval Yards at Deptford; by carriage down the Strand to wait on his superiors and to be accessible to the Duke of York in the court of the Palace of Westminster; then to the tavern to make music on his way home; moving about the narrow London streets, singing here, drinking there, talking everywhere.²⁵

25 Trease, Geoffrey, *Samuel Pepys and his World*, London: Thames and Hudson, 1972

Pepys enjoyed a complex, highly mobile lifestyle, within the tiny London of his time. A little later, in Swift's and Addison's time, the early coffee houses signal the importance for somewhere warm and relatively neutral to be seen, to meet, to sit and to talk. Later still, in the early nineteenth century, the upper bourgeoisie invented the club—neutral ground and furnished like a palace—which was specially designed to encourage hobnobbing with professional colleagues and social acquaintances. The club offered every comfort and convenience that the aristocracy had taken for granted for centuries, except better run, all for an infinitesimal fraction of the price that lords and ladies had to pay for real palaces—a brilliant way to maximise scarce resources while encouraging intellectual and social interaction in the most enjoyable way possible.

There are alternative ways of carrying out work over space and time than sitting at the equivalent of Bob Cratchett's desk in Mr Scrooge's counting house.

There exists today, for the first time, as my DEGW colleague, Andrew Harrison, often points out, a rough equivalence in problem solving and communicative capacity between the virtual and the physical worlds.

Territoriality, stability, visibility, tangibility are the advantages of the physical realm as opposed to invisibility, networking, mobility, intangibility, which are the principal virtues of the virtual world. Many features of the virtual world are improving so rapidly that they rival and potentially outshine the characteristics of the ordinary physical world. The balance of convenience between the two worlds is shifting—probably more in the favour of the virtual than the physical. However, the degrees of permeability of both realms are comparable.

In the virtual world the accessibility of internet sites is greater than private knowledge systems. In the physical world encounters in the street are different from knowledge communities such as

← Virtual		Physical →
Knowledge systems e.g. VPN, corporate intranet	Private - Protected access - Individual or collaborative workspaces	e.g. head office, serviced offices, incubator spaces, home working
Extranet sites Knowledge communities e.g. collaborative, virtual environments, project extranet, video conferences	Semi permeable - Invited access - Collaborative project and meeting spaces	e.g. clubs, airport lounges, institutes, schools
Internet sites e.g. information sources, chat rooms	Public - Open access - Informal interaction and open workspaces	e.g. cafes, hotel lobbies, the street, the city

clubs, which can only be entered under restricted conditions. The parallels between the public, the semi-permeable and the private geographies of the physical and the virtual worlds are very close.

New protocols are being created for the use of space and time which enhance the possibilities of different levels of interaction. Freedom of discourse on the internet is the reverse of the Taylorist emphasis on divide and rule.

Increasing permeability in the physical world is certain to erode the ruthless and inhuman Taylorist separation of functions that has led, as Richard Sennett has pointed out, to the neglect of interstitial spaces and to the cumulative decay of the public realm.

A critical cause of this neglect has been an under-estimation of the importance of opening up controlled degrees of accessibility which in the physical realm are essential to creating good buildings and cities and in the virtual realm are equally important in building a vibrant knowledge economy.

However, business protocols and inspired design on their own are not enough to create the places and the cities of the knowledge economy. Our cities, particularly in the Anglo-American world have been shaped by modernist values which were strongly influenced by Taylor. We need to reverse the malign aspects of the office supply chain that we have inherited from Taylorism. To achieve a sustainable environment for the knowledge economy we need to invent a new supply chain on new user friendly principles.

In fact, so different should this new supply chain be that it might be better described, using the late Steven Groak's term, as the exact opposite, a "demand chain", which would start with the users rather than investment and would have the following characteristics:

- End Users, who would be empowered to procure the physical and virtual environments they need to accommodate their work and their social, intellectual and cultural lives from a wide variety of sources and suppliers. Demand would be measured not by long-term commitments to pay so many dollars per square foot per year or euros per square metre per month but by how much users are willing to pay by the day and even by the hour for the spaces and services that meet their requirements. We have, after all, long been accustomed to procure space and services in hotels from a wide variety of competitive sources in exactly this way;
- Corporate Real Estate and Facilities Managers and other suppliers who would be principally rewarded, like the best restaurateurs and hoteliers, for the degree to which they satisfy their customers as well as for the skill with which they deliver and maintain highly sustainable environments;
- Design and Construction professionals and firms from the Architect via the Planners to the Cost Consultants, various kinds of Engineer, Project Managers, Construction Managers, Sub-contractors and Suppliers who were principally concerned with and rewarded for making the most imaginative and efficient use—and above all—reuse

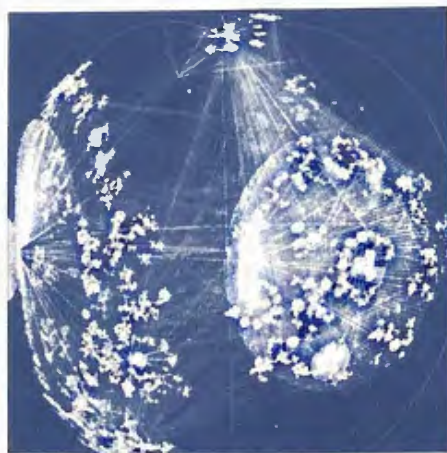
of existing accommodation at every scale from the cafe table to the city. This enlightened and responsive delivery process would take account of the utility of all office space and only occasionally would find it necessary to invest in new construction;

- Finance and Development providers: from Investors to Developers to Lawyers, Letting Agents and Real Estate Brokers—who would profit less from always moving on to new projects and new construction but more from intelligently and sustainably managing what exists already on the model of the best practice of the great London estates such as Grosvenor and Howard de Walden.²⁶

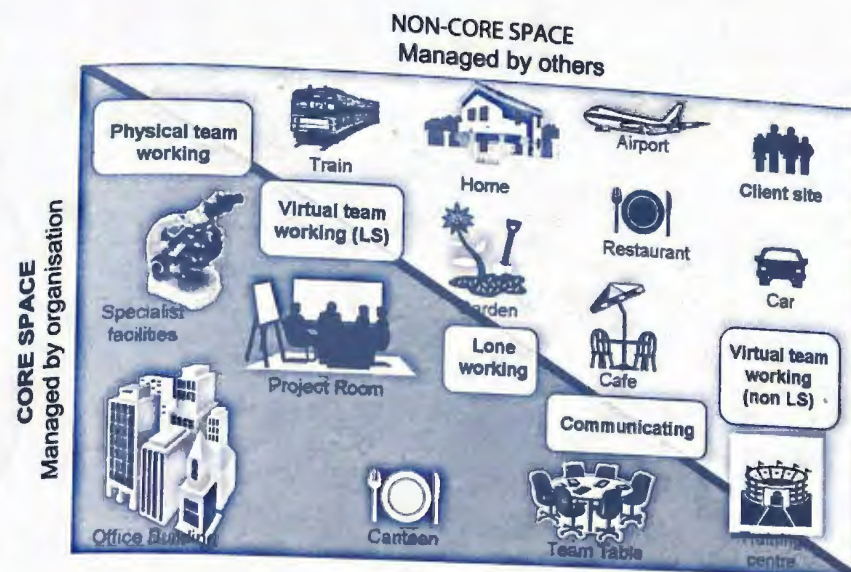
Just to add an ironic, early twenty-first century twist, these words were written in a brand new hotel room in Burj Dubai looking out at mile after mile of perhaps the most mindless construction the world has ever seen—the product of the wrong supply chain operating in the wrong way for the wrong reasons.

The reversal of the wasteful and destructive Taylorist supply chain in order to create a demand-led system of delivery is the first necessary

The Networked Office



26 Groak, Steven, *Is Construction an Industry?*, Construction Management and Economics, 1994, p. 12



Allocating space on the basis of work pattern

condition for creating the environment of the knowledge economy, which I shall call "The Networked Office". Networked Offices are the appropriate response to the demands of our increasingly mobile knowledge economy because they will combine the potential of virtuality and the power of physicality. Networked Offices will transcend conventional architectural boundaries to take advantage of entirely different kinds of relationship between technology and people and between time and place. The three major advantages of Networked Offices are that they would provide the potential; firstly, of making knowledge based work more enjoyable and compatible with other activities, secondly, of facilitating more efficient and effective use of existing buildings and cities and, thirdly, and most importantly is the context of this argument of making a huge contribution to creating sustainable cities. The challenge of designing Networked Offices to satisfy intelligent and demanding knowledge workers will also have the effect of weaning architects from our obsession with new building towards making the most imaginative and creative use of what already exists.

JUSTIFYING PLACE IN AN INCREASINGLY VIRTUAL WORLD

I have taken part recently in two telepresence conferences. The first was at Cisco's offices near Heathrow. Only two of those taking part were in London, the other participants were in San Francisco. The second was a workshop at Hewlett Packard's offices in the City of London, linking attendees from Boston, Palo Alto and London.

My experience in both conferences of sharing a meeting table, half of which is real and half virtual, was not unlike being on the other side of the table in Leonardo da Vinci's *Last Supper*. But so perfect are the life size images of the virtual participants, so clear is every feature, nuance of expression, flicker of the eye lids, and so precisely synchronised are vision and sound, that within two or three minutes all disbelief is suspended.

A Cisco
Telepresence
Room



At the end of my second tele-presence experience, I had become so absorbed in what had been a very successful workshop discussion that I forgot where I was. When the session was over and the participants were dispersing, we had been unplugged for sound but the vision remained on the screens. I could see Bill Porter, my old friend and colleague from MIT leaving the Boston part of the meeting. I had a personal question to ask him and I found myself going up to his image on the screen to attract his attention. He saw me, turned with a surprised glance towards me but, of course, couldn't hear me. Like Hamlet's father's ghost, he turned away: I was talking and gesticulating to a shade. Such was the physical impact on me of a powerful virtual experience.

How best to explore the potential impact of information technology on work, workplaces and the wider environment? Let me suggest a mental experiment. Imagine an entirely virtual world populated by virtual beings who enjoy all the power and convenience of virtuality. One day a virtual genius within this virtual paradise lights upon the notion of physical place. What arguments would this virtual being, a new Lucifer, have to muster to transcend the limiting conventions of virtuality? What evidence would this being have to assemble to persuade his or her fellows

that real places, physical spaces, with all their lumpiness, stiffness, messiness and cost are capable of complementing and enhancing the benefits of virtuality?

A null hypothesis, at least as vivid and sweeping as the one sketched above, is needed to challenge inherited assumptions about the nature of time and place. Temporal and spatial conventions do not invent themselves. Like the supply chains discussed above, they are also cultural constructs for which we must take responsibility. Architects in particular in this rapidly changing world need to be challenged out of our complacency. We must justify our contribution to society, indeed our very existence. Safer to start again from nothing, to go back to first principles, to invent workplaces and ways of using cities that are appropriate to the emerging technology and economy of the twenty-first century. To rethink the workplace and ultimately the city it is necessary is to take all existing design prescriptions, typologies and formulae with a very large pinch of salt.

The value of place—what long ago was called *genius loci*—continues to be enormous but we architects must realise that the monopoly of place on how we construct reality is being strongly challenged by the burgeoning power and convenience of virtuality. Several arguments justifying the value of place come to mind.

Firstly; places are impregnated with memory, association, recall and resonance.

Secondly; places are excellent at opening up unanticipated opportunities—they engender, as I mentioned earlier, “serendipity”—the happy coincidences that cities make more probable, that occur at parties and social events, the kind of opportunity from which I was prematurely unplugged at my tele-presence séance described above.

Chance is embedded in streets, in non-linear events, in surprise, in open-endedness, in the coincidences that belong to a non-programmed world. As Pasteur said about research, “chance favours the prepared mind”.

Thirdly; place promotes sociability and networking. Conversely place always offers the potential to withdraw, to remove oneself discreetly when necessary.

Fourthly; place is good at expressing meaning: subtlety, beauty, pleasure—the qualities that Lewis Mumford described as “the culture of cities”.²⁷

Finally; place, at its best, both registers and controls degrees of intimacy in human interaction. Nolli’s famous map of eighteenth century Rome needs to be redrawn in terms of a newly relevant’s typology of permeable, semi-permeable and private spaces. Even within the binary convention of Nolli’s figure-ground drawing, you see just at a glance that the Piazza Navona, the Pantheon, the churches, the monasteries, markets, courtyards, streets aggregate to about 30 per cent of the ground area. The drawing reveals a highly permeable urban structure that is very far from the genius for exclusion that is one of the sadder characteristics of the twentieth century city.

Richard Sennett criticises brittle buildings that can only accommodate one function. Stewart Brand advocates buildings that can learn, that have the capacity to accommodate growth and change, that get better rather than deteriorate over time. Both cities and buildings should also offer, not just two or even three, but many degrees of permeability which can be managed to foster cultural and intellectual discourse. In the knowledge economy we will measure places, both buildings and cities, by the amount of knowledge that is accumulated and quantity of ideas that are generated within their fabric.

27 Mumford, Lewis, *The Culture of Cities*, New York: Secker & Warburg, 1938

THE CRISIS

In the knowledge economy more and more businesses, both large and small, will operate as networks, depending at least as much on virtual communications as on face to face interactions. Networked organisations do not need to operate, manage or define themselves within conventional categories of workplaces or conventional working hours.

- Office buildings in their present state are neither a stable nor a sustainable building type;
- Much office space today is already under-occupied and under-used. Unless patterns of occupancy are radically changed, offices are certain to become even less densely occupied as confidence in distributed working increases;
- Much conventional office space, especially top quality, Grade A space, is likely to be unsuitable for emerging ways of working and will be difficult to convert to emerging business uses and even more difficult to convert to alternative uses;
- Conventional office developments exclude or marginalise workspace at lower rental levels and thus diminish the possibility of mutually beneficial interactions between large, mature businesses and smaller, growing enterprises;
- Conventional office developments sterilise opportunities for the growth of embryonic businesses;
- Conventional office developments do not provide enough interstitial space to accommodate inter-company transactions, mobile workers or the overlapping activities that are characteristic of networked working.

Putting these arguments into the context of the wider debate about sustainability and climate change leads to the conclusion that the issue is not simply the technical specification of energy use and carbon emissions of new office buildings (already only a fraction of the problem) but wider issues of general over supply, large-scale under use and poor facilities management. Office buildings occupied by conventional businesses are already contributing massively to the degradation of the planet. In relation to the emerging needs of networked twenty-first century businesses the total environmental performance of offices is likely to deteriorate further and faster.

Let us put the argument even more strongly: the Taylorist office building has been a perfect machine for delivering environmental degradation because it is so completely the product of supply side thinking which overrides user interests, ignores the public good and takes no account of collateral damage. The corollary of this statement is that to save the planet it will not be enough for architects—accepting for the sake of argument an entirely illogical and contradictory proposition—to design an improved, more environmentally sustainable version of the Taylorist office. I made an analogous mistake two decades ago when I thought that the emerging profession of what I hope would be user-facing Facilities Managers would lead to more responsible office design. What happened was simply that Facilities Management itself became almost instantly part of the supply chain, largely preferring pain free delivery to the hard work of helping users decide what needs to be delivered.

A more radical approach is necessary to arrest the waste; abandoning the Taylorist supply chain completely. Replacing the Taylorist supply chain with the Social Democratic model would be better but almost certainly not enough given the contradictions inherent in that generous but somewhat self indulgent and introspective process. However, the Networked Office, because it embraces the entirely different use of space and time made possible by Information Technology, currently has the potential for effecting real and substantial change for the better. The reconfiguration of the workplace combined with radical rethinking of the pattern of use of working and living spaces over time supported by the introduction of a user based and responsible, demand-led system of procurement and delivery are the three necessary components of the complete answer.

We are lucky to be living in a time when these possibilities exist. We are unlucky to live in a time when they are so urgently necessary.



THE SUSTAINABLE CITY

Some have argued that powerful, reliable and above all ubiquitous Information Technology will encourage universal suburbanisation on the Californian model—endless tracts of comfortable, electronically enhanced, individual McMansions interrupted only by the occasional freeway.

My vision of the future city is almost exactly the opposite. It is essentially urban. The vision depends upon the social logic of the knowledge economy which will thrive on open ended discourse much of which will be aided by technology but that will also continue to be social, plural and face to face.

The vision is equally dependant upon the economic logic of sustainability which will discourage excessive reliance on the car and air travel and, equally important, will encourage much more intensive use of existing spatial resources.

The development of the knowledge economy and achievement of sustainability will both be made possible by the power of Information Technology. All three factors operating together will create the conditions for a renaissance of the city.

The sustainable city will have to be very different from most existing cities and certainly from those cities that have been most violently shaped by the Modern Movement in architecture and by the Taylorist ideas of division and exclusion that underpinned that movement. To reverse Richard Sennett's critique of the twentieth century city the sustainable city must be designed to make possible:

- closer adjacencies between buildings of different scales, e.g. making sure that appropriate scale buildings and spaces for smaller tenants can be accommodated very close to or even above, under or within larger structures suitable for larger and medium size tenants;
- multi functionality through the planned juxtaposition of complementary and mutually supportive uses within a varied regime of rental levels and forms of tenure. An example of this is the growing need for short term, relatively cheap accommodation suitable for smaller creative businesses within fashion, media and design, e.g. rough and ready, short-term loft spaces, in which concepts can be conceived, developed and produced which are closely adjacent to the larger, more stable businesses that can deliver but which need instant and ongoing access to the most fickle and transient environment of creativity;

- the provision and maintenance of a very large amount and a wide range of attractive interstitial places and spaces, permeable in various degrees, designed to make possible the maximum number of serendipitous encounters between businesses and enterprises of many different kinds, sizes, highly networked individuals as well as between cultures and levels of resource.

The requirements of the sustainable city will contradict a great deal of obsolete twentieth century planning legislation—mixing uses, overlapping sectors, bringing together activities and social groups that have long been artificially kept apart. Densities of occupation in conventional terms will have to be as high as are the densest parts of Manhattan and Hong Kong today. More importantly patterns of use over time, 24 hours a day, seven days a week, will have to be far more intense than any experienced today, even in the most lively quarters of the most vital existing cities.

Expect the intermeshing of building uses and types, especially the obsolescent office building, and a vast improvement of the capacity of all buildings and all spaces between buildings to accommodate change and improvement over time. Anticipate the organisational protocols and the physical accommodation that will provide the many degrees of permeability (and security) that will be required in a highly interactive knowledge-based economy. Look forward to cities where calm, quiet and rest are generously provided in residences, gardens and parks; contrasting with and complementing the social realm. It will be impossible to tell where universities, libraries and other academic and intellectual institutions begin and where they end, since a high proportion of the building stock will be given over to collective spaces designed to accommodate intellectual and social discourse. Vertical circulation will be designed to be generous and visible. Expect a higher proportion of the city's space to be given over to horizontal public access and circulation—streets, squares and plazas

enlivened by busy frontages and, like Bryant Square in New York, enhanced by universal access to the ever-present internet. Despite their shifting boundaries, the virtual and the physical realms will support and complement each other.

The renaissance of the city is, of course, highly desirable. The three conditions under which it is likely to happen already exist—the growing importance of the knowledge economy, the urgent threat of climate change, the ready availability and increasing power of Information Technology. The one other factor that will be necessary to achieve this vision is to reverse the dismal, dominant, suboptimal, feedback free, development driven supply chain that has caused so much trouble, generated so much waste and grievously distorted much urban development throughout the very unsatisfactory twentieth century.

Trust the users, abandon supply-side thinking, prioritise sustainability, take advantage of technology and we will have a fighting chance of getting cities we can enjoy, of building the knowledge-based culture our economy needs and, let's hope, of saving the planet at the same time.

SUGGESTED READING

General

"Barker Review of Land Use Planning", Department of Communities and Local Government, 2006.

Florida, Richard, *The Rise of the Creative Class*, London: Basic Books, 2002.

Foxell Simon, ed., *The professionals' choice: The future of the built environment professions*, London: Building Futures, 2003.

Kunstler, James Howard, *The Long Emergency*, Atlantic Monthly Press, 2005.

Leadbeater, Charles, *Personalisation through participation: A new script for public services*, London: Demos, 2004.

Schumacher, EF, *Small is Beautiful*, Vancouver: Hartley & Marks, 1999.

Economic Survey of the United Kingdom, OECD, 2007.
World Population Prospects: The 2006

Revision, Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, United Nations, 2007.

Planet Earth and Climate Change

Flannery, Tim, *The Weather Makers: The History and Future Impact of Climate Change*, Melbourne: Text Publishing, 2005.

Gore, Al, *Earth in the Balance: Ecology and the Human Spirit*, Boston: Houghton Mifflin, 1992.

Gore, Al, *The Assault on Reason*, Harmondsworth: Penguin, 2007.

Hartmann, Thom, *Last Hours of Ancient Sunlight*, New York: Three Rivers Press, 1997 (rev. 2004).

Hawken, Lovins & Lovins, *Natural Capitalism*, London: Little Brown, 1999.

Hillman, Mayer, *How We Can Save the Planet*, Harmondsworth: Penguin, 2004.

Homer-Dixon, Thomas, *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilisation*, New York: Alfred A Knopf, 2006.

Kolbert, Elizabeth, *Field Notes from a Catastrophe: A Frontline Report on Climate Change*, London: Bloomsbury, 2006.

Lovelock, James, *Gaia: A New Look at Life on Earth*, Oxford: Oxford University Press, 1979.

Lovelock, James, *The Revenge of Gaia*, London: Allen Lane, 2006.

Lynas, Mark, *High Tide: The Truth About Our Climate Crisis*, London: Picador, 2004.

Lynas, Mark, *Six Degrees: Our Future on a Hotter Planet*, London: Fourth Estate, 2007.

Marshall, George, *Carbon Detox*, London: Gaia Thinking, 2007.

McDonough, W, and Braungert M, *Cradle to Cradle, Remaking the Way We Make Things*, New York: North Point Press, 2002.