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Profit and Place

Built environments, once constructed, exert physical and symbolic influences on the human activities which take place in an around them. This paper explores the workings of these influences, beginning with a simple example.

Most readers, no doubt, will be following these words in a room of some kind. At one level, the design of the room helps the activity of reading, and other activities besides. I am writing these words in a rainstorm: if there were no roof over my head, the paper would dissolve.

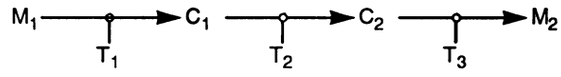
This ability to support human activities is a crucial aspect of any built place. After all, built environments are constructed partly, at least, because they facilitate activities which would be difficult, if not impossible, in a wilderness. But, at another level, the design of any room also puts constraints on the activities which take place in an around it. For example, our readers will almost certainly have entered the room through a doorway. It is extremely unlikely that they will have smashed their way in through a wall, or tunneled though the floor. And if they grow bored, and wish to glance out at a longer view, they will have to look out through a window, rather than through the solid bits of the walls, floor or ceiling. As we can see, the physical design of the room – the relative positions of its solids and voids – affects what its users can and cannot do.

All environments also have a *symbolic* dimension, in the sense that they are invested by their users with *meanings* related to the users' own cultural backgrounds. These meanings may add further constraints, or suggest further opportunities to the users concerned.

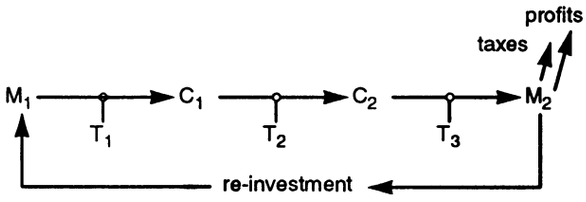
For example, imagine two rooms which have identical dimensions and lighting levels, heated to the same comfortable temperature. Imagine that one has windows onto a mountain landscape, walls painted with murals, and an inlaid marble floor. Imagine that the other walls of unpainted cinder block with a floor of concrete slabs, and that it only has artificial lighting. One is to be used as a living room, and the other as a garage. Which room, in your culture, would be used for which purpose?

Neither the physical nor the symbolic aspects of design can *determine* what users do: even a prison requires its gaolers to make people into prisoners. Together, however, these physical and symbolic aspects do set constraint on users' actions. These constraints may be of trivial importance in the case of most individual rooms; but when the rooms are combined to make whole buildings, and when the buildings are added together to make a city, the cumulative effects may exert very significant social constraints, particularly on the lives of the most disadvantaged people. By virtue of being solid and long-lasting, the built environment's dual character as a system of social support and constraint can never be avoided. Built form will always – even if only unintentionally – support certain patterns of activity and association, and make others more difficult. There is always the possibility of using this property to the relative advantage of particular social groups: typically, dominant groups try to use it to support their own aspiration's against those of their rivals and subordinates, as far as they can. This is certainly the case, for example, in capitalist situations, where the built environment is integrated into the economy at three different levels. At one level, it is the focus of a profit-orientated manufacturing industry: that of "construction" and "property development". This is conceptually no different from the manufacture of bespoke suits or plastic buckets, and operates by buying land, other raw materials and labour, putting them together to make buildings and associated open spaces, and then selling these at a profit. At a second and more general level, the built environment also acts as the setting for all sorts of other enterprises, and it has a wide range of effects on how these operate. If these enterprises are to be kept working efficiently, then the effects must be made advantageous to the enterprises concerned. Finally, at the third and highest level, the built environment has a further role to play. Acting as the built context for the entire economy, it has a role to play in the smooth running of the capitalist system as a whole.

To understand how the built environment can operate to support the system at these three levels, let us begin by examining more closely the very heart of the capitalist system: the process of production for profit, which we have already roughed out above. The process can be represented, at an abstract level, as a series of conversions or transformations, as sketched in the diagram below; where M stands for money, C stands for commodities of various kinds, and T stands for the transformations which are made from one to the other.



At the beginning of this chain, an entrepreneur makes a decision to employ an initial sum of money (M_1) in the production process. M_1 then undergoes a transformation (T_1) when it is converted into the various commodities (C_1) – raw materials and labour – which the entrepreneur buys in order for production to take place. These commodities (C_1) then in turn undergo a transformation (T_2), during the production process itself, into *new* commodities (C_2) – labour is applied to various chemicals to make plastic buckets, for example. Finally, these manufactured commodities (C_2) go through a further transformation (T_3), through being sold on the market for a final sum of money (M_2). For the process to be profitable, and therefore worth repeating as an on-going enterprise, the final sum of money, M_2, has to be greater than the M_1, with which the entrepreneur began. The difference must be enough to yield the entrepreneur's profits, and pay taxes due. When this happens, so that the production process concerned is profitable enough to be worth setting up as an on-going enterprise, our original linear chain of transformations becomes a recurring *cycle*, as represented below.



The cyclical process also has an important time dimension. The more times the money is cycled through the system, the more it will grow. It follows that the quicker each can be completed, the *faster* the money will grow; thus giving the enterprise concerned an advantage over competitors with slower cycles.

If the production cycle is a profitable one, then there will be an obvious tendency for other enterprises to enter the same market. All things being equal, competition between enterprises will tend to reduce the final price (M_2) for which the products can be sold. If the profit is to be prevented from falling below the minimum level which is acceptable to the entrepreneur concerned, then there will have to be reductions in the various costs involved in the chain of transformations (T_1, T_2 and T_3) through which M_1 is ultimately increased to M_2. The design of the built environment is one of a series of devices which can be used to bring these cost-reductions about.

It is important to realise that it is only its potential in this regard which makes design important to entrepreneurs, considered *as* entrepreneurs. Of course, no entrepreneur is ever *only* an entrepreneur. In other roles – wife and mother, bird-watcher, patron of the arts – any entrepreneur may have a whole host of "non-commercial" interests in design. But in the capitalist context, the entrepreneurial role in a very real sense *underpins* the others. It is only *profits* which enable the entrepreneur to feed the kids, pay the rent, buy the binoculars to watch the birds, subsidise art exhibitions and so forth.

The primary requirement for maintaining the capitalist system is therefore to keep production profitable. In the capitalist context, therefore, the role of the built environment in maintaining profits overrides any other roles it might potentially play. But what possibilities are there for the built environment to play this overriding role in the most effective way?

The possibilities for increased profits through design lie at the points of the various transformations in the production chain. These transformations occur when money is transferred into materials, labour, equipment and so forth (T_1), when these are in turn transformed into the manufactured product (T_2) and when this product is turned back into money through being sold on the market (T_3). Let us consider how physical designs – and the meanings they have for their users – affect each of these transformations at each of the three levels at which design is integrated into the economy: buildings as saleable commodities in themselves, built forms to improve the profitability of other enterprises, and environments to support the viability of the capitalist system as a whole.

Let us first consider the production of buildings as saleable commodities in themselves. Because the whole capitalist system is based on the process of profitable production, it is not surprising that most of the built environment is in practice produced in this way.

In the case of buildings as commodities, the first transformation involves converting money into land, construction materials and labour in a particular location; the second transforms these, on the building site, into a saleable building with its associated open spaces; and the third involves converting this building back into money by selling it on the market. What pressure are put on the designer by the search for maximum cost-effectiveness in each of these transformations?

The first pressure arises directly from the restricted supply of land as an essential raw material for development. In order to build at all, the entrepreneur must have a site. Typically land is sold to the highest bidder in a competitive market. The entrepreneur must therefore bid higher than the competition, whilst still ensuring an adequate profit from the development overall. We shall return later to the physical design implications of this important constraint. For now, it is sufficient to realise that the first pressure on the designer is the imperative to put forward a scheme which will enable the entrepreneur to make the highest competitive offer for the site in question. If not: no scheme.

What are the design implications of the other raw materials used in the building process? The desire to maximise their cost-effectiveness – which, as we shall see later, may not necessarily be the same thing as minimising their cost – places its own pressures on the designer. Most building materials are themselves commodities produced through other processes of profitable production. Given the economies of scale in such processes, it is clear that – all things being equal – materials and components which are produced in large quantities will very likely have cost advantages over competitors in more limited production. This means that materials which are produced in the largest quantities will tend to be used to a disproportional extent on different sites, increasing the homogeneity of materials used over large geographical areas.

In addition to these manufacturing economies, there are also economies of scale in purchasing the materials, once manufactured, for use in a particular building project. Where the entrepreneur has enough money available, larger quantities can often be purchased at lower unit prices, whilst the unit administration costs of the contractor's ordering department will also be reduced if it has to handle a small number of large orders rather than a large number of small ones. This will tend to reduce the range of materials used in a given project.

Labour, too, has its own important implications for design. Entrepreneurs want to reduce labour costs. In the capitalist system, labour – including designers' labour – is a commodity which workers sell in a competitive market. Skills in short supply can, when they are needed, command higher prices than those more widely available, and are less easy to discipline on the building site. All things being equal, therefore, entrepreneurs favour building designs which do not require high levels of craft skills; for unskilled workers are in a relatively weak bargaining position in the labour market.

To summarise, in following through the implications of the initial transformation of money into land, materials and labour, at the start of the development process, we have gained some important insights into the reasons behind the pressures which landowners, developers and contractors place on building design: pressure towards designs which maximise site values, towards the use of a restricted range of building materials over large geographical areas and within particular building projects, and towards designs which do not require high levels of craft skills for their execution. Let us now see whether it is equally interesting to analyse the second stage transformation: from land, materials and labour into a finished building complex.

As long as money is locked up in land, materials and labour, it is not circulating though the production process, so it is not generating a profit. It is therefore crucially important to the entrepreneur that the process of converting these commodities into a saleable complex should take as short a time as possible. This requirement for a rapid construction programme has important impacts on design.

First, it supports designs which minimise the amount of construction work which has to be carried out on site. In principle,

this reduction can be achieved by designs which use prefabricated elements, themselves constructed under efficient factory conditions.

Factories producing prefabricated components have to be large in order to achieve their own economic of scale, so they are inevitably limited in number, relative to the number of building projects which might potentially incorporate their products. Because building sites are geographically fixed, it follows that prefabricated elements will often have to be transported long distances to the sites where they are eventually used. This transport process is disproportionately expensive in the case of large, heavy prefabricated assemblies; so in practice there is an economic limit to the extent to which off-site prefabrication can be used.

Given this restriction on the use of off-site prefabrication, it becomes doubly important that the on-site constructional processes should be as rationalised as possible, in the sense of being based as far as possible on simple assembly techniques: another pressure towards the creation of a de-skilled, easily-disciplined workforce. The entrepreneur's drive to benefit from economy of scale in the use of this unskilled labour force imposes on the designer a pressure towards repetitive building tasks, where the same construction procedures can be repeated many times during a single building contract.

The building contract can also be speeded up if it requires only simple site organisation. For example, the storage and on-site handling of materials is simplified if the number of different materials is minimised; whilst the organisation of labour is simplified if design makes the work of the various trades easy to separate out. The drive towards simple site organisation increases still further the pressures towards building designs which, as far as possible, employ homogenous materials and details throughout.

To summarise, this brief analysis of the process of transforming land, materials and labour into a saleable building complex has given us a further set of insights into the physical character of modern architecture: an architecture of rationalised, deskilled constructional techniques, using the minimum number of different details and materials. To finish off this examination of how buildings are produced as commodities, let us think through the design implications of the final transformation in the process: turning the completed building back into money.

In the process of commodity production for profit, the product is sold in a competitive market, to the highest bidder. What, then, determines who will pay the highest price for a given building?

The price a user (or a group of users) can pay depends on their situation in the capitalist system as a whole. Typically, a profitable company will be able to pay more for a given amount of space than, say, an employed teenager can afford. The highest price will therefore be paid by the richest potential user who *wants* space in the building's particular location: the surveyor's so-called "highest and best use". Buildings in locations which – because of good accessibility, environmental quality or whatever – are attractive to the richest users will therefore be sold for the highest prices, whilst only relatively unattractive locations will be left for those who are less well-off. Over time, this leads towards a "zoning" of land uses; so that use-classes which have different levels of buying-power become spatially segregated from one another within the city as a whole.

The speculative entrepreneur initiating the production of a building for profit will, of course, have made a preliminary assessment of the use-class which can pay the highest price in the location concerned, and will have briefed the designer accordingly. The need to compete effectively in the speculative market for a particular use-class has its own strong design implications within this brief, at the scale of the individual building. Primarily, it is important that the design should appeal to the widest possible range of users within the market concerned, so there are pressures within each market to home-in on a "market norm" of design. These market norms may vary widely between different sectors of the particular market. Some sectors, for example, may exert a demand for "individualised" designs; and it may require considerable design creativity to provide these in such a way as still to appeal widely in the sector concerned. Even here experimental designs will tend to be avoided, since they have an unpredictable market performance and may turn out to have a narrower appeal. This process gives rise, over time, to the relatively small range of standardised building types, with standardised relationships between them, which is so typical of recent urban form. Even in situations where designs are "bespoke" by specific users, similar "market norm" disciplines will often be applied. Any building represents a considerable investment, and most patrons are likely to be interested in the likely resale value if they decide eventually to move to different premises: a frequent-enough occurrence in the context of dynamic capitalist societies.

This rough sketch of the way buildings are produced as commodities for sale, which we have now completed, has yielded a range of valuable insights about the pressures on physical design in a capitalist situation. We now begin to understand some of the reasons which lie behind the typical design features of the modern capitalist city, from its zoned-out pattern of land-uses through to the repetitive details of its individual buildings.

But buildings as commodities in themselves represent only one aspect of the built environment in a capitalist economy. Let us see what further insights we can gain from analysing the built environment works in another important role: that of supporting the profitable operation of other sorts of manufacturing enterprises. Here again, the built environment has the potential to affect each of the three key transformations in the production system, though which money is converted into commodities and then back into money again.

The first of these transformations involves exchanging money for all the pre-requisites of production: principally raw material, equipment, premises and labour. To increase the profitability of the production process overall, it is clearly important to reduce the unit costs of all these elements, at the point where they are used in production, as far as we can. How can physical design help in this regard?

In terms of raw materials and equipment, the impact of design is mostly at the largest "regional planning" scale. For example, decisions about the physical location of the production process will certainly have an impact on transport costs, and therefore of unit costs at the gates of the enterprise itself. Similarly, if there is a given distance between the source of the raw materials and the enterprise which requires them, then unit costs can be reduced by increasing the economic efficiency of the transport system which links these together. That is why the historical development of capitalism has always been linked with the development of the increasingly efficient systems for the transport of materials and information –

canals, docks, railways, telephone, motorways, airports, faxes and the like – which make such dramatic impacts on modern urban form.

When we consider how physical form can affect the costs of the premises required for production – the particular factory, the office or whatever – we are at a smaller, more "architectural" scale of design. The basic design implication is not hard to understand: the production premises must be designed to be as cheap as possible, whilst still being an adequate setting for the production process concerned. In practice, however, this may raise issues which are more complex than they appear at first sight: the most cost-effective building in this context is not necessarily the one with the lowest construction cost, because its symbolic dimension also has to be considered. For example, an entrepreneur commissioning a new building might see hope that if it stands out from its neighbours, and confess an impression of "prestige" and "success" on the business concerned, then it could help to give that firm an edge over its competitors in the search for capital investment, by impressing banks and other potential investors.

The need for the entrepreneur to secure a cost-effective supply of suitable labour also has implications for the built environment, for the enterprise has to be located with this supply in mind. This often has regional or even global locational implications. A common example occurs when factories or large offices are sited in places which have labour pools with particular working skills. At the global scale, for example, this might involve a multi-national company locating particular sorts of production processes in a "third world" country with low unit labour costs. Or, in situations where it is crucial to attract certain kinds of highly skilled personnel, enterprises may be located in places with special environmental qualities – sunbelts, silicon valleys or silicon glens – which are especially attractive to people with the particular lifestyles concerned.

The imagery of buildings and their settings may also be pressed into service in this regard, in attempts either to attract or to discipline labour. On the one hand, attempts might be made to enhance the attractive qualities of the particular silicon glen through the design of the buildings set within it, and perhaps also to use building forms which are intended to convey an impression of the business as a warm and caring working environment, with plenty of scope for individual creativity. On the other hand (and not necessary in conflict) buildings which convey the idea that the firm is all-powerful, for example, might be hoped to attract workers with a sense of resignation to the work-disciplines required, and to put off those with a more rebellious cast of mind.

In summary, we can see that the built environment, considered as the setting for the process of production, can potentially contribute to the attraction of capital investment, and its conversion into the pre-requisites of production, through factors ranging from the geographical location of production facilities to the imagery of the buildings themselves. Let us now consider the potential contribution which the built environment can make to the cost-effectiveness of the second transformation within the production process: the conversion of raw materials into salable products. Labor is crucial to this transformation, for taking manufacturing industries overall, labor accounts for some % of all production costs.

Physical design has an obvious effect on the potential productivity of labor. Building layouts or arrangements of equipment which are inconvenient for the particular production process can limit the speed with which workers' tasks can be carried out, whilst more efficient arrangements make it possible for the same tasks to be done faster. Designers are clearly under pressure to design production buildings for the efficiency of the production process, rather than from other points of view.

However, physical design can only create a *potential* for faster work. It cannot by itself guarantee that this potential will be realised in practice, for the workers might prefer to use the time which has been saved for their own purposes, such as socialising with their workmates. It is the task of management to ensure that the time saved is used "productively", and management approaches to this issue vary widely. However, physical design is often used to support one common management strategy: closer supervision of labour. Open-plan or bürolandschaft offices, or open workshops with production lines are obvious and common examples. Here again the external imagery of the buildings has a potential role to play. If seen by workers as giving an impression of the power and organisation of the firm, this imagery might effectively make propaganda for a disciplined and hard-working labour force. Differences in character as between, for example, the managing director's office and the shop floor may help to reinforce the power structure in workers' minds or, supporting a different management approach, *similarities* character between the two might be used to reinforce a sense of "pull together, chaps, we're all in the same boat".

This brief review of the process of converting labour and raw materials into saleable commodities shows, once again, the potential which buildings have for increasing economic efficiency. At all levels from spatial layout to the details of internal and external imagery, production buildings have a role to play in the profit-generation process. But once the saleable commodity has been produced, it has to be sold on the market. How can physical design affect the cost-effectiveness of the final transformation?

First, the need to move the finished product to the point of sale as quickly as possible, so as to speed up the flow of money through the system, is yet another factor reinforcing capitalism's need for an efficient transport infrastructure. Moving products rapidly from the factory to the shop, however, is pointless unless there is a corresponding efficiency in the design of the sales spaces themselves. This has design implications at several different scales.

First of all, it leads entrepreneurs to seek economic of scale. These can be achieved in two ways: the scale of the overall enterprise can be increased by increasing its number of sales outlets – the "multiple trader" replaces the independent shopkeeper – and the physical size of individual shops can be increased, as when the corner shop gives way to the supermarket.

Increased sales efficiency can also be sought through the way individual shops are related together to form an overall "shopping centre", in which (in economic terms) the whole is more than the sum of the parts. Magnets such as large stores – or non-shopping attractions such as easy parking, good weather protection, or amusements for children, or symbolic benefits such as spectacular interiors – are used to attract people to visit the centre; which is then designed in detail to make sure that these visitors are closely exposed to the goods on sale in the smaller shops.

Within the individual shop, the cost-effectiveness of the sales process can be increased by reading labour costs. This leads to design where as many as possible of the goods are on direct display, and located so that customers can serve themselves. Not only does this reduce the number of sales staff required to service a given number of customers, but also it only requires unskilled "checkout" workers, available in the labour market at the lowest unit cost.

This analysis of how the design of the built environment affects the process of profitable production, for commodities of all sorts, has given us a range of further insights into the pressures on design in a capitalist situation, and how these affect spatial structure and building imagery. Let us now consider the implications of the level at which physical design affects the capitalist economy; its role in supporting the viability of the system as a whole.

The capitalist system, for all its spectacular historical successes on its own terms, contains a number of inbuilt tensions. Three of these have particular important design implications. Let us now consider these in more detail.

The first arises because the system, if left to itself, lacks any overall planning function. Each individual enterprise reacts to market signals, and in the light of these signals entrepreneurs make decisions calculated to improve the competitive performance of their own business. But this means that the system lacks foresight, and has no "larger view". This can cause all sorts of practical difficulties, when the actions of certain enterprises begin to cause problems for the smooth operation of a whole area of the system. For example, uncontrolled development in a particular location might overload its transport system to everyone's disadvantage, or else it might destroy the very environmental qualities which help to attract certain kinds of investment skills into the region concerned.

To minimise such problems, and to try to gain overall benefits by relating enterprises together, spatially, in ways which are mutually beneficial (as, for example, in the shopping layouts to which we have already referred) there are advantages to entrepreneurs *as a whole* if the state performs some environmental planning functions.

Typically, these functions have to operate at two levels: national and local. The national state promotes the overall policies of the government of the day; but since each particular locality within the state's boundaries has its own unique problems and opportunities, it would be impossibly cumbersome and inflexible to try to control what happens everywhere from some national centre. A second "local" tier of planning is therefore required.

Both levels of government have to be given teeth, in the forms of tax income, legal powers and the ultimate sanction of force. Without these, they would be unable to carry out their planning functions, in the interests of the system as a whole, in the face of potential opposition from powerful interests in particular instances.

Once taken by government, these powers can prove to be a two-edged sword so far as entrepreneurs are concerned. If a political party were elected on a platform which was against the continuation of the entire system, it could in principle turn its powers against the interests of all entrepreneurs. In practice, however, this is extremely unlikely to be successful in any major sense, for the increasing integration of the global economy has great potential for the telling "OK, we'll invest in South Korea instead" riposte.

Nevertheless, particularly at the local level, there are bound to be frequent tensions between government policy and the interests of *particular* entrepreneurs: local government would not be performing its planning function if it merely acquiesced in every short-term, expedient proposal for development. These tensions have a considerable impact on the designer, because they reduce the area of overlap which is acceptable both to the entrepreneur and to the planning authority, and thereby shrink the window of opportunity for design.

The second tension at the heart of the capitalist economy stems from the system's very ability to generate profits: profits larger than could ever be spent by entrepreneurs on personal consumption, no matter how lavish their lifestyles. These super-profits can only be invested back into the system, to buy yet more raw materials and labour; so the system as a whole, if it is successful at all, has an inbuilt propensity to grow. However, these investments are themselves intended to generate yet more profits; and they can only do this if the commodities produced can ultimately be converted back into money through being sold at a profit themselves. Unless the whole system is to break down, therefore, it is necessary for consumption to grow, at least in line with production.

To make this possible, more and more people have to buy more and more things. Partly these increased levels of consumption can be stimulated through advertising and through the development of a consumerist culture, in which more and more commodities come to seem as though they are necessary for a proper life. But the stimulation of consumption also has implications for the design of the built environment. If advertising can make commodities *seem* necessary, the spatial structures of cities can make them *practically* necessary, in a very real sense, by physically separating land uses which need to be functionally related; so that new commodities are required to overcome the spatial separation, to allow the necessary relationships to operate. The clearest example of this process is shown in the growth of suburbs.

Firstly, the development of suburbs entails a disproportionate increase in the consumption of building materials. With the low suburban densities, a given number of dwellings requires more materials for the construction of the associated roads and other infrastructure. More construction materials are also required for the small free-standing buildings themselves, since these lack shared walls and floors. And, once in place, suburbs also increase the consumption of all sorts of other commodities, which people find they need in order to lead a tolerable suburban life.

The increased demand for commodities in suburbia is partly generated by the physical design of the homes themselves. The large number of free-standing buildings have a very large area of external surfaces; so they consume disproportionately large quantities of coal, coke, oil, gas, electricity and so forth for heating. The gardens also require commodities for their maintenance: there is a demand for garden tools, seeds, fertilizers, weedkillers and other garden requisites, and for sheds to keep them all in.

The low densities which are typical in suburban development restrict the numbers of people who live in a given area; so shops and social facilities, which rely for their viability on a cer-

tain population of users, have to be spaced far apart. This makes it inconvenient and time-consuming to make frequent visits to the shops, for example; so everyday requirements are likely to be bought less frequently, and in larger quantities at a time. In turn, this generates a demand for storage cupboards, refrigerators, canned foods, tin-openers and all sorts of other kitchen items.

Because people are spaced well-apart in the suburbs, there is also a demand for commodities which enable them to communicate across space: first telephones, later computers, modems and fax machines. And since low-density suburbs cannot contain high levels of social or entertainment facilities, there is also a demand for commodities which enable suburb-dwellers to have entertainment on tap in the home, as well as to visit denser, city-centre areas, and to make face-to-face contacts beyond their immediate circle of neighbours. Record players, televisions, video recorders, buses, trams, suburban trains, bicycles, motorcycles, cars are all needed; as are many associated items, from railway stations and bus stops to petrol and sparking plugs.

As this suburban example shows, the design of the built environment has great potential for helping to generate increased consumption. Can it also help to address the third tension which is endemic to the capitalist system?

This third tension arises from the special character of labour, which distinguishes it from the other commodities, such as raw materials, which are used in the production process. Labour differs fundamentally from these other commodities in having expectations, opinions and feelings. From mechanics to managing directors, labour is human after all.

Clearly, the cost-effectiveness of labour can be improved either by reducing its costs at a given level of productivity, or by increasing its productivity at a given level of cost. Let us examine the design implications of each of these in turn.

The cost of labour to the entrepreneur – the amounts which have to be paid to the mechanic or to the managing director – is affected by a number of different factors. First, the levels of wages and salaries are affected by the relationship between supply and demand; but even when supply outstrips demand, so that wages and salaries are reduced, there is a rock-bottom level below which they cannot fall if the system as a whole is to remain viable.

This bottom level is set by the need for the labour force to be able to reproduce itself in a way which is suitable for the continuation of profitable production over time. This means that workers have to be paid enough to maintain the level of consumption which the system requires in order to productively absorb its continually expanding profits, as well as being able to afford adequate amounts of food, warmth, clothing, shelter, health care and so on, in order to be able to work at all. In terms of the built environment, this has obvious implications for housing: it is important that there be an adequate supply of healthy homes available at prices which are sufficiently low for workers to afford them at the minimum wage-levels which allow adequate levels of consumption to be maintained. If a situation arises where the price of minimally healthy housing puts it out of the reach of a significant proportion of the labour force, at prevailing wage-levels and levels of consumption, then entrepreneurs find themselves in a dilemma. All things being equal, if they increase wages their profits fall. But if they do *not* increase wages to such an extent that workers can afford minimally healthy housing, then the quality of available labour will fall, and the system as a whole will be unable to reproduce itself over time. What is required is good housing whose cost to *most* entrepreneurs is somehow kept relatively low.

There are various strategies by which this can be attempted. An obvious one in the field of physical design is the development of ingenious design ideas to reduce the capital cost of workers' dwellings: for example by making them ever-smaller, or by attempting to rationalise their construction. A second strategy is to reduce the cost of a given dwelling, to its occupier, by some sort of public subsidy. Since this subsidy would normally be paid out of taxes, its cost would be spread relatively widely, and would therefore not fall entirely on entrepreneurs themselves. A third approach is to limit the cost of dwellings to their occupiers by operating a system of direct rent control. This, of course, is highly damaging to the profits of the entrepreneur who provide the housing concerned, and can only be carried out in special situation where these particular entrepreneurs have relatively little political power. Later, we shall see examples of all three strategies in operation.

The availability of good housing, at a relatively low impact on the wage-packet, improves the supply of cheap, healthy labour. But low wages and good health are not the only aspects of labour which are important to entrepreneurs. In order to be able to work in ways which are cost-effective from the entrepreneur's point of view, workers also need adequate skills and – of vital importance – adequate *attitudes* to work. In the context of the capitalist enterprise, it is helpful to profits if any majority of the workforce – who are not required to exercise high levels of initiative on the production line – have the relatively contented and disciplined attitudes which are likely to assist productivity. However, there are endemic tensions between workers' aspirations and the realities of capitalist work, as experienced by most people, which make it relatively unlikely that the majority of workers will be happy with their lot at the workplace. Raymond Aron's account of this tension puts it very well: "Industrial civilisation subjects individuals to a strict discipline in their work . . . and yet it claims to have a philosophy of freedom, a philosophy of personality". (Aron, 1968)

The "philosophy of freedom", linked as it is to ideals of personal choice and thence to consumerist values, is central to the expansion of consumption which the system so desperately needs for its continued viability. The "discipline of their work" is also central to the system's effective operation. The contradiction is a serious one.

Physical design has a role to play in relation to this tension, for viewed from this perspective, the built environment can be seen as a system of political constraint. There is a long history of attempts which powerful interests have made to use this potential for their own ends. Sometimes these attempts have been quite overt, as when rulers ensured that it was as easy as possible for their armies to put down rebellions; for example by designing straight wide streets, cut through the complex spatial structures of old working class areas, as in the Haussmanisation of Paris.

However, it is wasteful to the system even to *imagine* a situation where large numbers of people become disaffected to the point of physical rebellion; for merely contemplating this would imply the need for profit-eroding taxation, to cover large government expenditure on troops, security hardware and the like.

Clearly, it is far better if the potential for disaffection is diffused, rather than being allowed to concentrate to the point where it triggers physical action.

The concentration of disaffection is difficult unless individual disaffected people can come together, face to face, in mutual reinforcement: it is difficult to raise any real lather over the telephone. Concentrated disaffection is therefore easier to avoid if the population is physically dispersed, at least for most of the time. The suburbs, whose rationale we have already discussed in terms of consumption, are very effective environment for creating this diffusion; particularly as they gradually come to contain larger and larger proportions of smaller and smaller households. The one-person household (one of the fastest-growing sizes) in the suburbs is clearly the *most* diffused dwelling arrangement, short of the prison cell, which anyone has yet managed to conceive.

This diffusion can, in principle, be overcome by people meeting in public space, even in the suburbs; though low densities make it relatively difficult to achieve large gathering in any spontaneous way. This difficulty is increased if the public space itself is fragmented and diffused: recent suburban morphologies, structured around "courts" and "culs de sac", are far more diffused, in this sense, than were either street-oriented versions. In this context, public space becomes merely a quantitative concept – so many acres per thousand people, say – rather than being conceived for ready and spontaneous public use. This effect is in most cases reinforced, at a symbolic level, by the space's lack of visual definition: a characteristic which makes it difficult to perceive public space as anything positive, rather than merely as the negative "residue" of the buildings.

The late capitalist city, typically with an ever-growing proportion of suburban environment, is therefore quite effective as a people-diffusing structure. But, of course, individuals can still come face to face in work situations, and in downtown shopping and entertainment environments. However, none of these is very effective as an environment for public assembly. In the workplace, as we have seen, individual workers are most often involved in a rigorous division of labour, and are subject to a highly-structured system of supervision. Even in intensively-used city centres, there is an increasing tendency for major "public" spaces – such as shopping mails – to be privately-owned, and subject to continuous security patrols. Opportunities for spontaneous public assembly can never be eliminated altogether, but certainly they are made more difficult by the morphological changes which have occurred in the late-capitalist city.

To work well, in this regard, it is important that users should not become too-easily aware of this aspect of urban design. The imagery of the building surfaces may have the potential to obscure the "social control" aspect of these morphological changes. With this in mind it is no surprise, for example, to see that so many suburban housing developments are styled-up to give the impression of matey village communities. At all levels from its spatial structure to the details of style, the built environment has gradually been restructured as a non-violent system for diffusing the potential for rebellion.

These rather broad-ranging thoughts – reassuring or disturbing, depending on one's political perspective – bring to a conclusion our rough sketch of how the built environment can support the operation of the capitalist system at a number of levels. To explore the complexities of the capitalist development process, it has been helpful to consider three of these levels as conceptually separate; but in practice most elements of the built environment operate across more than one of these three. For example, at one level, a factory or an office block is clearly a commodity for sale. At another, however, both are important supports for different kinds of production processes. Or, again, a suburban house is itself produced as a saleable commodity; but it is also a component in an overall system for increasing the consumption of all sorts of other commodities, and for diffusing social tensions.

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Structuring of Spatial Policies

Most debates on spatial policies tend to overlook the fact that it is an extremely complex, even eclectic concept, which is:

a) horizontally structured; on the national level there is a definite "spatial" department, however other "non-spatial" departments have a definite and strong influence on "real" spatial policy – especially infrastructure departments can (un)willingly prejudice spatial development.
b) vertically structured, despite the reform of local self-government, which took many formal competences in the execution of spatial policies from the new municipalities, the local unit, at least informally, managed to maintain influence on spatial policy. For these two reasons it is difficult to discuss spatial policy without defining which segments we have in mind.

The ensuing debate is an attempt at presenting different factors which influence the dynamic structuring of spatial policies. The result is an often unpleasant eclecticism, which can, with much difficulty, be harmonised with impressions of vertically and horizontally logically structured spatial policies. Nevertheless, it is almost impossible to act otherwise, than to understand and respect these "un-systematic" effects.

Tensions which exist between the national (central government) and lower tiers (regional, local) are probably a normal phenomenon, which doesn't necessarily lead to conflict. When it leads to a rise in sensitivity of the national apparatus, it can even be beneficial because it produces a greater sensitivity of national institutions to the complexities and variations at the regional or local levels. Although *centralist* doesn't immediately equate to *undemocratic*, it is not surprising that authoritative undemocratic systems are more centralist and therefore do not permit translations of power from the central to the lower tiers. Vice-versa, decentralisation and democracy also don't coincide, although most democratic arrangements permit distribution of power and regulative competences to lower territorial units.

An inevitable complementary effect of spatial de-centralisation are occasional, as well as constant tensions between different tiers. For this reason itself, changes in competences are a delicate process, which can in the long run destabilise political and administrative procedures.