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**A model for restraining the supply of property  
so that it matches real demand**

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**Abstract:** *This paper, based upon research in progress, questions the ability of the private property market to achieve equilibrium of supply and demand, and to account for externalities. Massive oversupply during past property booms has left many cities, such as Adelaide, with large quantities of secondary grade or 'withdrawn' office space, which have adverse consequences on these cities, the community, and the property market itself.*

*With another boom and more overbuilding forecast, a conceptual model is presented for addressing the problem. This is based upon concepts utilised in regulating water markets, where 'sustainable' overall limits are established, a quota of property rights is issued according to these limits, along with certain obligations. These rights can then be traded freely within the market.*

*This model is intended to ensure that supply of office space does not outstrip real demand and, in times of low demand, that new additions to the stock are counterbalanced by replacement of lower grade buildings. It is expected to minimise the community costs of obsolescence resulting from oversupply, and from owners allowing properties to deteriorate.*

*The ten components of the model are explained, together with the operating principles. Likely advantages and disadvantages are then explored and debated.*

**Keywords:** Property market; office space; oversupply; obsolescence; community effects or externalities; intervention and regulation; transferable property or development rights; refurbishment, conversion and disposal.

## 1. Introduction

During past property booms, such as during the 1980s, supply dramatically overshoot real demand, resulting in severe 'busts'. Property lenders are now much more circumspect, and the property industry is certainly better informed – with the role of 'gut feel' said to have been marginalised (Parker, 2000). However, Gelber has stated that "the cyclical drivers remain" and predicted that "we'll end up overbuilding again" during another boom in the latter part of this decade, when net additions to the Adelaide CBD office stock are forecast to exceed the levels of the late 1980s peak (Gelber, 2000).

With this prospect in mind, and considering the negative community effects of new construction far exceeding demand, a hypothesis, theory and conceptual model are presented for restraining overbuilding and mitigating its adverse effects. These are discussed in the context of the Adelaide CBD, but the theory is considered to be equally applicable to other cities with a surfeit of secondary grade office space.

The theory and model form part of PhD research in progress, and comments from the conference will assist in developing the thesis.

## 2. The problem

The speculative expansion of property stock out of proportion to real levels of demand, revealed dramatically in the large quantities of excess office space characterising our cities, has been described as "senseless, outrageous prodigality" (Daly, 1982:62).

This is dramatically illustrated in the case of Adelaide, where the supply of office space at the peak of the late 1980s boom exceeded real demand, in terms of occupied space, by over 200 000 square metres (Figure 1).

Such chronic oversupply in a property boom results in an 'indigestible lump' of vacant space, which gradually sinks through the quality layers or grades of office stock and eventually results in the displacement and 'withdrawal' (wastage) of an equivalent amount of existing stock (Figures 2, 5). The 'fallout' of this process is large quantities of disused, obsolescent office space burdening our cities, including regional cities such as Adelaide, where vacancies in parts of the CBD were as high as 60 per cent in 1997 (City of Adelaide, 1999). In fact, Adelaide continues to have one of the highest vacancy levels of mainland Australia capital cities.

The increased obsolescence is seen to have a number of undesirable consequences or 'externalities' in terms of city image, council rate revenue, economic activity, safety and security. There are additional externalities related to the excessive embodied energy required to construct such buildings and the later problems of waste and land fill.

The literature has tended to focus on costs of overbuilding related to increased congestion, lengthening of the journey to work, displacement of activities unable to pay the rising rents, and loss of amenity (Sandercock, 1977; Bateman, 1985: 152; Barras, 1984: 46). Some authors have highlighted the opportunity costs of the boom, whereby billions of dollars borrowed overseas were not invested in industry or in social and physical infrastructure (Low and Moser, 1991:5; The Economist, 1991b). Others have pointed to the subsequent stagnation in the construction industry (Berry and Huxley, 1992:50). However, the consequences of overbuilding in terms of increased obsolescence and blight have received comparatively little attention.

The costs associated with these negative impacts tend to be largely borne by the community rather than by the short-term profit oriented developers of new buildings. It can therefore be argued that the property industry's decision processes require some intervention and adjustment to regulate the supply of office stock, to restrain rather than feed the excesses of the market, and to account for these externalities.

### 3. Hypothesis

The following hypothesis was developed as a means of ensuring that the supply of office stock is matched with demand, and to reduce the community costs of oversupply in terms of obsolescence.

#### **Hypothesis**

***The decision to build when vacancies are high and demand low imposes a social cost on the community by displacing existing buildings. This is revealed in increased urban blight (obsolescent, disused properties and their attendant environmental and social problems).***

***Therefore, it may be argued that untrammelled oversupply should be regulated. An upper (variable) limit of office space should be established, based upon real demand and employment and the city's ability to provide the necessary infrastructure. According to this limit, a quota of 'office space property rights' may then be allocated or auctioned to existing owners.***

***A developer wishing to add new office space to the stock would need to purchase office space rights from an existing owner of rights, who would forfeit those rights but would be required to use the proceeds to fund redevelopment or conversion of the office space to an alternative function.***

***By this means, any addition of new office space would be counterbalanced by a contribution to the disposal or conversion of existing office stock, and uncosted externalities may be captured.***

***This would have the effect of ensuring that developers and owners are responsible for the full life-cycle costs of their properties, including disposal.***

***It would also enable refurbishment to be seen in a more favourable light when compared with new construction. There may be overall community benefits in extending the economic or useful life of existing buildings – especially in a period of low economic growth.***

### 4. Theory

A key element of the theory is that the supply of building assets should be restrained to match underlying demand.

Whilst not advocating constraints on supply in the CBD, the Property Council (SA) has nevertheless acknowledged the need for 'sustainable limits' on the expansion of commercial and retail activity which are linked to demand growth, as part of the Planning Strategy for Metropolitan Adelaide (Property Council, 2000).

Matching supply to demand or service needs is a basic principle of asset management, which can help avoid excesses and wastage in property booms, as well as managing property during economic downturns - when funds should be diverted from new growth into replacement (Burns, 2000). We can't keep adding to the stock without considering implications for upkeep and replacement. The acquisition of too many new assets without a corresponding reduction of the old will entail additional maintenance resources, and the existing stock will be increasingly under-utilised (Public Accounts Committee, 1987).

In a boom, the focus changes from acquiring the *right* asset to acquiring *any* asset. The essence of asset management is that assets are not seen as wealth, but rather as a means to an end, something to provide services that the community needs (Burns, 2000).

Asset management is more than asset acquisition. In addition to the way in which assets are chosen, designed and constructed, it looks at the way they are used, maintained, rehabilitated, modified and, eventually, safely disposed of (Burns, 2000).

A key question is whether the property market is capable of matching supply to demand so that equilibrium is maintained, or whether public intervention is required. Unfortunately, there is little evidence that Australian builders and developers are moving beyond a supply-driven mentality (Kooymans, 2000:32).

The notion of regulating the overall supply of office space is not new. The UK Government previously imposed restraints on office development, coupled with the issue of Office Development Permits (UK Government, 1964). The principle also underpins the San Francisco Downtown Plan, where it is intended that growth is balanced with real demand and employment, and with the city's ability to provide the necessary infrastructure (Ghosh, 1990)<sup>1</sup>. A former leader of the NSW Opposition proposed a similar quota system for Sydney that would settle each year the upper limit of office space to be allowed (Carr, 1993).

Capping the supply of retail space was canvassed in relation to the SA Centres Policy, but there has been reluctance to introduce such a "strong and contentious form of public intervention in the market" (Planning SA, 1997)<sup>2</sup>. Nevertheless, it has been acknowledged that oversupply of retail space can have adverse consequences:

...the development of centres should have regard to the location and role of other existing and proposed centres and be of a size and type that would not lead to the physical deterioration of any existing centre or designated shopping area (Planning SA, 1998).

The principle of capping supply has also been introduced in water markets, where 'sustainable levels' of water use have been determined by public authorities under a water resource management plan. This has been accompanied by the use of property or water rights, which can be transferred in the marketplace.

Using this analogy, this paper examines the proposition that quotas of office space or property rights could be allocated within established limits, and that these rights may be transferred. Any addition of new office stock could thus be counterbalanced and

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<sup>1</sup> As Kooymans has noted, "maybe a modification of the San Francisco Downtown Plan ordinance approach is needed" (Kooymans, 2000).

<sup>2</sup> A cap has not been introduced in SA. However, an amendment to the Development Regulations requires proposals over a certain size to be referred to the Development Assessment Commission for direction (Planning SA, 1999).

restrained by a contribution to the replacement of existing stock, so that “growth should pay its own way” (Alterman, 1990).

A similar principle was espoused in *The Economist*, which recommended that local authorities should issue only enough building permits to meet the estimated demand for office space, and that those permits should be allocated by auction to ‘approved developers’ (The Economist, 1991a; Stretton, 1999:514).

The theory of counterbalancing additions to the stock by replacement or disposal of existing obsolete assets is akin to the notion we can stabilise the capital stock by requiring that the investment rate equal the depreciation rate (Meadows et al, 1972:161). This idea is demonstrated by the policy introduced by the Greater London Council in 1981, whereby office development was considered acceptable only if it involved the modernisation and redevelopment of existing office premises (Bateman, 1985:79).

## 5. Transferable property or development rights (TDRs)

The release of a quota of property rights<sup>3</sup>, according to real demand, is seen as a means of preventing oversupply and stabilising the system. A developer wishing to construct new office space would need to acquire rights transferred from existing owners, so that there would be no net additions to the office stock (Figures 3, 4 and 5). An existing owner, having sold the property rights, would forfeit the right to use the office space and would be required to use the funds to convert, demolish or otherwise dispose of the building. New additions to stock would be counterbalanced by replacement of existing buildings, and investment matched by depreciation.

TDRs have been used primarily for conserving a resource, such as water, land and heritage, in pollution control via emission trading, or for greenhouse gas reductions via ‘carbon credits’. Owners of an existing resource, be it heritage, land or water, are able to be compensated for the loss of development rights and thus conserve the resource.

Stretton has suggested that an international agreement should fix equal greenhouse emission rights per head of population, and make them saleable at market prices (Stretton, 1999:204). As Schultze claimed, setting prices on harmful side effects is the most desirable means of reducing them. There has been support for the idea of assigning property rights to side effects and creating a market for these (Schultze, 1977:35).

In theory, the idea can be applied to any development and to any property, whether old or otherwise (James, 1976). Certainly, the application proposed in this thesis is very different from the traditional use of TDRs.

The public resource to be protected is the city environment, and the TDRs constitute a licence to use the public domain, with obligations attached to this licence so that negative public externalities are minimised. In any case, as Gaffney and others have argued, rises in land values are societally-created, and this is a further argument for the granting to individuals of licences for land use, which have an exchange value in the market place (Gaffney, 1995; Day, 1995:73).

Arguably, the existing stock of ‘capital goods’ in the form of office space, which is allocated a licence in the form of property rights, may also be viewed as a resource to be conserved, or at least well managed.

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<sup>3</sup> Stretton has discussed rationing of suburban land in Canberra (Stretton, 1999:201).

In the mid-1960s Salter compared the stock of existing capital goods to land:

Capital goods in existence are equally as much a part of the economic environment as land or other natural resources. Both are gifts: natural resources are the gift of nature, capital goods are the gifts of the past (Salter, 1966).

It may also be argued that natural capital, such as land surface, should be held in common trust and leased. Thus, land in the CBD may be privately owned, but the right to use this land – such as for office space - could be subject to property use rights, which are separable from the land. This is the principle underpinning regulation of water markets, where water use rights are a privilege that may be withdrawn.

Obligations may also be attached to the use of rights so as to ensure that developers and owners are responsible for the full life-cycle costs of their properties, including disposal.

## **6. Alternatives considered**

One means of accounting for externalities, and altering market behaviour, is adjustment of prices so that they reflect full community costs; in other words, 'external' costs may be internalised (Pigou, 1920; Productivity Commission, 1999:47; Weizsacker, 1997:200). This is the principle behind the idea of a carbon tax.

Externalities associated with the property market may be captured - and supply dampened - by the use of a simple levy or tax on new projects, akin to the development levy imposed in Sydney. This would be a simpler tool than the use of limits to supply accompanied by transferable property rights.

However, such a levy would be inequitable in that it would penalise new projects, but would be unlikely to affect owners of existing properties who let their properties deteriorate. A system of property rights, with its concomitant obligations, is more likely to influence existing owners to care for their existing assets. Levies are seen to be more appropriate as a means of recouping additional community costs, such as public facilities and infrastructure, due to the impact of major projects. Hence, they are known as 'impact levies'.

The notion of an annual rental charge for land is a possible alternative strategy to property rights and the above levies. Such a scheme, similar to a land tax, may have the effect of restraining oversupply and speculation, and – like site value ratings – may encourage more efficient use of land, to its 'highest and best use' or full potential. This system, used elsewhere as a means of capturing unearned income or 'betterment', should be distinguished from 'impact levies' that have an entirely different purpose. It has the advantage of being more equitable than a single levy on new projects, as it would affect both developers and existing owners. It is necessary to target those owners who allow their existing properties to deteriorate, and benefit from the actions of others. Increases in property value due to community enhancement or betterment could be taxed at a punitive rate, but such an increase could be notionally reduced by capital spent on a property.

The advantage of the property rights scheme outlined in the model is that the supply of stock could be regulated. New rights could be released to the market when real demand was evident, and the supply could be reduced or 'shrunk' when the area of existing office space exceeded demand. The system also harnesses market forces to achieve public objectives.

Assigning rights to externalities, and trading in these rights (such as by emissions trading) may also be more economically efficient than imposing levies such as a carbon tax. Under such a levy, there is no scope for trading emissions rights from those with high abatement costs to those with lower abatement costs (Productivity Commission, 1999).

## **7. Analogy with system for regulating water markets**

Water markets emerged in Australia during the 1980s<sup>4</sup>, and their use became more widespread during the 1990s, so that the water economy is now in its mature phase. Recent Water Resources Acts, such as the SA Act of 1997, formally separate the ownership of water and land, include transfer mechanisms, and establish procedures for water management plans.

The more sophisticated model for regulating water markets developed by Bjornlund and McKay of the Water Law and Policy Group, University of South Australia, provides a useful analogy (Bjornlund and McKay, 2000). This is based upon a market driven property rights approach pivoting around a concept of the 'duty toward water', within a wider framework of water management planning and establishment of sustainable limits to water extraction. It enables commercial forces to be harnessed within an overall public policy and planning framework. As Young stated, "markets are excellent servants but poor masters". If regulatory instruments set the ecologically sustainable limits, market mechanisms can be an excellent servant to move water around within such limits. Thus, we need other (regulatory) instruments to be masters of the market so that private interests are balanced against the broader interests of society, and so that issues external to the parties conducting the market transfer are considered (Young, 1999).

There are some limitations to the analogy, however. With water we are trying to control demand, or redistribute demand to more efficient uses, because the supply has reached ecological limits. Some may maintain that the supply of property should not be limited and that, in any case, cities are dynamic, organic and unconstrainable. However, such an argument fails to acknowledge the community costs of oversupply in terms of energy, waste and displaced obsolescent buildings.

There is also an analogy to the establishment of a 'cap' on total greenhouse gas emissions, and allowing firms to trade permits or rights within this limit.

### ***Regulating water markets***

***(A summary of Bjornlund and McKay proposals, 2000)***

***Water is a public good, and considerable taxpayer resources have gone into developing water resources and infrastructure.***

***Water owners have the responsibility to ensure that water fulfils its duty to the wider community, known as the 'duty toward water'. This includes the need to put water to efficient, beneficial use, and encompasses duty of care toward the environment.***

***An overall controlling framework of water management plans ranging from state to local farm level, with a water authority and local committees.***

<sup>4</sup> South Australia was the first Australian State to introduce water trading in 1983, and was again the first to comprehensively revise its water legislation with the Water Resources Act 1997.

***Each irrigator should produce a farm water management plan fulfilling the duty toward water, including best management practice for each crop under given soil and climatic conditions.***

***Within the context of this framework, water use rights are allocated and attached to particular farms, and these specify the permitted level (volume) of water use. If holders of water use rights wish to increase water use, a revised water management plan must be approved.***

***Water rights (freehold property) separated from the land, and water use rights attached to particular parcels of land.***

***A market in water rights. Any person will be able to buy as much water as they like, but no person will be able to use more water than their water use right.***

***If water right holders are not able to fulfil the duty toward water, they may be penalised by losing the right to use the water. However, they can retain the water right, and can sell or lease this if they wish to leave the industry.***

***This offers some compensation and enables ‘structural adjustment’, whereby less efficient farmers are displaced by those who can use the resource more efficiently and responsibly.***

***Authorities need to monitor water use, and compare this to the water use right.***

## **8. The model and its components**

A model consisting of ten components, A to K, has therefore been constructed. This attempts to regulate the supply of office space to meet demand, balance new office space with conversion or disposal of existing, and hence address the externalities arising from oversupply and obsolescence.

### **A. Notion of the city as a ‘public good’**

Arguably, the city represents the aspirations of the whole community, culture, liveability – it belongs to us all, not just to private property owners. The Property Council (SA) itself acknowledges that the city is the “key engine room of investment, growth and prosperity, and the crucible of creativity”. As demonstrated by the Council’s initiative in developing its own strategy for the central city of Adelaide, the health of the city is not just a matter for the community – it makes good business sense too (Property Council, 2000). The city is not just a physical representation of economic forces - the ‘dry’ view, but also reflects our cultural and community values. This is revealed by the five themes for the rejuvenation of Adelaide which have been embraced by the Property Council, City Council, and State Government: the learning city; the city of creative imagination; the gateway to South Australia; the gathering place; and the city of light and style.

Furthermore, considerable taxpayer resources have gone into developing the city’s environment and infrastructure. While private property owners have rights to the use of land, it may be argued that the use of these rights should not infringe the community’s rights to the city; developers may profit from brutal, heartless, culturally blank buildings, but society is left with the debt for generations (Sellars, 2000).



Hence the private use of land is subject to planning restrictions, but these do not normally govern the actions of property owners who abandon their buildings or allow them to deteriorate, or the profligate overbuilding of developers which exacerbates this obsolescence.

Property owners, though, at least pay for the privilege of owning their land, and pay annual rates or taxes, whereas water rights have been granted to individuals as private property *at no cost*, with unclear community obligations. It has been argued that water right holders have a duty to use the scarce resource not only in their personal best interest, but also for the good of the community, and that this duty can be controlled by means of 'water use rights' (Bjornlund and McKay, 2000).

The question is whether control over land use, and office development in particular, would be more effective if present planning restrictions were replaced or supplemented by a system of property rights, as used to regulate water markets.

## **B. Overall controlling development plan / framework – estimates of real demand**

Oversupply beyond real demand leads to 'fall-out' in terms of increased obsolescence and abandonment, with negative community effects.

Despite difficulties, it is possible to estimate overall 'real demand' within the CBD in relation to supply, and hence the overall space required. For example, BIS Shrapnel have developed a methodology for determining demand for office space based on employment figures and space per office worker, and also office supply.

As BIS Shrapnel have noted, the average workspace ratio per office worker cannot be an exact measure. The measure can be distorted by the fact that the space occupied by office workers tends to expand to fill vacant space (BIS Shrapnel, 2000). In addition, vacancy figures exclude obsolescent space and buildings with a floor area of less than 500 square metres, and 'withdrawn space' that still may have a negative impact upon the city.

A further problem is the long lead-time of up to three years for a major office building to come on stream. A demand which existed when this was conceived may have evaporated by the time the building is completed, and predicted rents may have failed to meet expectations. For example, feasibility studies for new developments in the Sydney CBD undertaken in 1993-94 had predicted net effective rents by the end of 1999 of between \$600 and \$750 per square metre. But by the end of 1999, these had fallen to an average of \$340 per square metre (Lawrence, 2000).

It is acknowledged that the supply of office space could justifiably exceed demand by approximately 10 per cent, because of the need for a 'reservoir' of supply to meet sudden unexpected demand. As noted above, new supply may take up to three years to come on stream. The 10 per cent figure is based upon the average long-term vacancy rate within office markets such as Adelaide.

Therefore, whilst there are analogies with the determination of sustainable water supply volumes, the demand for office space is certainly much less quantifiable and measurable. It would be extremely difficult, for example, to assign limits to particular precincts or individual properties.

Who should determine the demand and supply of office space? This role could be delegated to the property industry, through the Property Council, with the government establishing the principles in partnership with the industry, and overseeing and

monitoring their operation. Such a 'co-regulatory' strategy would be seen as less interventionist than direct government control, and is more in keeping with prevailing views of the role of government and industry bodies (public-private partnerships have been advocated by the Property Council, 2000). There is logic in a co-regulatory approach in that oversupply impacts on both the property industry and the wider community.

### **C. Quota of 'office space rights' allocated**

Property owners would be allocated 'office space rights' based upon the existing area of floor space, in the same manner as water use rights are allocated according to existing volumes of water use.

The important concept is that the amount or supply of office space rights in the market may be adjusted according to the estimated demand for office accommodation. More rights may be introduced (by auction) to the market when demand increases or, alternatively, the amount of rights could be 'reined in' if it were necessary to shrink the supply of office space to meet a declining demand (as discussed under 'K').

These rights may be exchanged or transferred among existing and new owners, but the overall number of rights would match demand. Thus, a basic principle of asset management would be fulfilled – the amount of office space would match business needs. The quality of space should also match these needs, and this is discussed in H below.

The proposed scheme would not preclude new development in a period of constant demand, but (in the absence of new rights) it would be necessary to acquire the rights from owners of existing buildings. The community costs associated with displacement of an existing building would thus be built into the costs of a new development.

### **D. 'Duty' attached to use of rights**

Owners could have privileges but also obligations attached to office space rights, to manage and *use* the rights efficiently, in the same way that conditions are attached to a licence. This is akin to control by 'encumbrances' attached to property titles under some present systems of development control.

Owners of new or existing office space rights could be required to properly manage and *use* these rights, according to specified performance requirements, and allow for life cycle costs, depreciation and disposal. Pressure could thus be exerted on owners of existing buildings to *use* them efficiently, rather than just allowing them to decay, and this could even extend to dereliction penalties.

The allocation of property rights would therefore not just be a windfall for existing 'slum landlords', but would have 'strings attached'. An analogy may be drawn with water right holders who, it has been argued, have the obligation or duty to use the scarce resource not only in their personal best interest but also for the benefit of the community (Bjornlund and McKay, 2000).

## E. Separate the ownership of rights and land

The ownership of office space rights, as distinct from the ownership of land, would constitute a licence to *use* land for office accommodation.

The development control system already provides rights attached to the ownership of land, whereby land is 'zoned' for office space or other uses, and plot ratio or density is used to control the amount of space per site. The important concept underlying the proposed system is that the office space rights would be separable to the ownership of the land and could be traded independently of the sale of the land. In fact, office space rights could comprise part of a 'bundle of rights', including heritage rights and the like, that are all separable from the land ownership and able to be traded.

There is an analogy with the concept of water use rights, implying the notion of a licence, as differentiated from water rights that represent ownership of water. As in the case of water markets, property owners not able to fulfil obligations attached to the use of office space rights could lose the privilege of using these rights, but not the ability to own the rights. Such owners could sell the rights to gain instant capital to restructure their properties (Bjornlund and McKay, 2000).

The development plan would continue to zone sites according to appropriate types of use. The plan would limit the number of office space rights that could be used on a particular site by specifying the maximum area of office space, as under present plot ratio and density controls. The proposal could thus be integrated with the present development control system; it would add a further dimension.

Developers in Sydney are able to achieve bonus plot ratio or floor space by purchasing transferable floor space from heritage properties. In effect, the proposal is a means of extending this system so that a market would be created for office floor space generally, not just heritage floor space.

Ultimately, control of externalities by means of property rights and the like could replace present systems of zoning and land-use controls. As Mills noted, optimum direct controls of externalities should make land-use controls redundant (Mills, 1979). For example, the concept of performance zoning is already in use; this type of zoning allows virtually any land-use on virtually any type of land, but holds landowners accountable for negative externalities that could affect other citizens. It would then be a relatively small step to introduce the notion of assigning property rights to these side effects or externalities, and creating a market for these rights (Schultze, 1977:33).

## F. Trading of office space rights

An owner of office space rights could transfer (sell) the whole or part of the rights, but the new owner could only use these rights within the floor space limits applicable to a particular site under the development plan. This is analogous to the trading of water rights, but within the confines of the maximum water allowance (defined on volumetric basis) for a particular property, reflecting efficient water use, under the irrigation plan.

Developers wishing to construct new office space, in a period of low 'demand' (that is, when no new rights are released), would be required to purchase rights from existing owners (Figure 4). Effectively, they would be required to *purchase the area rights from an existing office building*. The rights would not have to be bought from a site in the same local area as the new building, but certainly within the confines of the Adelaide

CBD. Again, this is analogous to water market mechanisms, where spatial restrictions are attached to the use of rights in terms of the irrigation area.

On the other hand, owners who sell their office space rights would forfeit the right to use the land for office accommodation, and would be required to convert the existing building to alternative use, or demolish the building and redevelop the site. Once rights were sold, it would be unacceptable for owners of 'withdrawn' space to continue to allow buildings to remain empty and deteriorate. Penalties would be imposed to prohibit this.

Similarly, it would be unacceptable to simply demolish a building without redeveloping the site for an alternative use. Vacant, unkempt sites are a major cause of blight, as is demonstrated by the Adelaide City Council's requirement that demolished buildings must be replaced. However, it may be argued that restoring a site to green open space may, in some situations, constitute a desirable community use.

### **G. Price determined by supply and demand**

The price of property rights, once introduced to the market, would be determined by supply and demand. The price would be low when a large excess of poor quality space (such as D grade) was available and, for that reason, it is preferable that the proposed scheme should be introduced in a period of low growth. The price would increase as the supply of property rights diminished.

The release of more rights by the council could be triggered by a pre-established price increase, for example, if prices increased by 15 per cent. However, as explained in B above, it is preferable if the release of rights is related to increased demand.

### **H. Relationship of rights to quality**

The office stock comprises various property grades, ranging from premium grade to so-called secondary grade space, which includes D grade space and that 'withdrawn' from the market. New stock is generally categorised as premium or A grade but, over time, this gradually deteriorates and requires periodic refurbishment to maintain quality and meet changing business needs (Figure 5).

In theory, the highest externalities will be associated with obsolescent, lower grade buildings. Therefore, this model is intended to encourage replacement of these structures, and the refurbishment of better quality stock to meet new business needs. The price of property rights for this lower grade stock should logically be less than for higher quality stock, to enable these rights to be sold and the stock converted or demolished. Owners of obsolete buildings will be keener to sell their property rights, and will tend to price these accordingly. In addition, there tends to be a greater supply of secondary grade buildings than premium or A grade stock. For example, examining the Adelaide CBD office market in 1999, 361 700 square metres was categorised as premium or A grade, whilst over 732 000 square metres was categorised as B, C or D grade – to which should be added withdrawn space. In other words, more than half of the stock was secondary grade. The larger supply of secondary stock will, of itself, result in lower prices than premium or A grade stock.

The transfer of these rights within the property market, with prices determined by supply and demand, may be expected to result – over time - in improved quality of office accommodation, and renewal of the stock. Although prices would be low when lots of excess office space is available, developers would be encouraged to renew existing office stock as supply diminished and prices increased, rather than purchasing rights for new office accommodation.

A higher grade of buildings would be left, thereby achieving the objective of removing the worse layers of building stock, and encouraging the re-use or conversion of better quality layers (Atkinson, 1988).

Similarly, owners could renew the quality of their office accommodation by selling or reducing quantity. For example, the amount of office space per floor could be reduced, and the quality improved, by providing greenery, shading and the like, or cutting out sections of the building fabric to provide more natural light, or removing alternate floors to increase ceiling heights.

### **J. Measuring externalities**

The notion that over-supply results in externalities, some of which are not presently addressed by the property market and development control system, is an essential component of the model. Overbuilding results in uncosted externalities in terms of energy use and waste. In addition, the displacement and obsolescence of existing buildings adversely impacts on rate revenue, economic activity, city image, security and safety. It is anticipated that these factors may be measured and costed, and that this cost may be attributed in the property market by appropriate pricing of property rights.

Desirably, the price of the property rights whenever transferred should reflect externalities, such as the community costs of obsolescence. However, as Burns has noted, externalities will affect the price of rights only when the council releases more rights onto the market by auction. However, a baseline price reflecting urban blight impacts could be established at that time (Burns, personal communication, 2000).

In order to prove the theory, therefore, it is only necessary to broadly indicate the nature and extent of these costs, not to measure them accurately. In any case, the city environment is difficult to measure, but nevertheless a real concept.

### **K. The role of the authority**

Although the council or authority (analogous to a water authority) would retain a record of rights traded, and monitor the use of office space rights, very little evaluation of actual transfers would be required, and "the market would be left to buyers and sellers to sort out." (Bjornlund and McKay, 2000)

The onus would be on the authority to ensure that a property owner who has sold office space rights uses the revenue to avoid urban blight, by either demolishing the building and redeveloping the site, or converting the building to an alternative use. The alternative use should not be other commercial (such as retail), but residential, recreational, educational or the like.

In theory, the authority would be able to ensure equilibrium between supply and demand. In addition to dispensing more rights when demand increased, it could reduce or 'shrink' an oversupply of office space by imposing a requirement that the number of rights should be reduced each time they were sold, by (say) 10 per cent. As an analogy, in relation to water markets, it was found that excessive and unsustainable volumes of water were used for irrigation in the Angas-Bremer Region. As a result, the aquifer could not be replenished, the water table was lowered, and salinity increased, which adversely effected crops. A strategy of reducing rights, when sold, by 10 per cent was implemented, to assist in attaining equilibrium (Bjornlund, 1995).

The operation of the scheme in a flat market, such as Adelaide, would be facilitated by the use of a 'bank' of property rights, controlled by the authority. For example, an owner wishing to convert office space to an alternative use could sell the rights to the 'bank', despite no present demand existing for the rights. The rights would still have value even though not sold until later in a buoyant market.

## **9. Discussion of model**

### **9.1 Scheme would help bridge viability gap**

At present, a number of conversion projects in the City of Adelaide are 'stalled' because of a viability gap - for example, the rentals gained from student accommodation are insufficient to make conversion financially viable.

The proposed scheme would help bridge this gap. The sale of office space property rights by the owners of existing obsolescent buildings would generate funds to assist conversion of these buildings to satisfy demand for alternative uses, such as student accommodation, educational or community uses, with a consequent positive community impact (Tregoning, 1994).

### **9.2 Cross-subsidisation**

Funding of upgrading, conversion or redevelopment would be assisted by cross-subsidisation within the property industry. This could be a major advantage, given diminished scope for funding any incentives from the shrinking public purse.

Whilst a developer of a new building would (when no new rights are released) incur additional costs due to the purchase of rights from owners of existing buildings, those owners would – through the sale of rights – acquire funds to assist in conversion or redevelopment of those properties.

The costs of future imposition on the community (disposal costs) would be factored into the cost of new buildings. The property industry would be made responsible for the fallout and waste resulting from its overbuilding excesses.

### **9.3 Structural adjustment**

The scheme could achieve 'structural adjustment' by enabling 'inefficient' owners, unable to finance redevelopment or upgrading, to sell the office space use rights and to either convert their property to alternative use, or leave the property industry.

Again, an analogy may be drawn to water and irrigation. Some existing water right holders will not be able to fulfil the 'duty toward water' and will lose the right to use the water. However, the fact that they can retain the water right will offer some compensation. Property rights and market mechanisms are therefore seen as among the major instruments to facilitate structural change (Bjornlund and McKay, 2000).

### **9.4 Disincentive to development?**

It is recognised that, whilst such a proposition might dampen demand and reduce over-supply, and hence alleviate urban blight, this may be at an unacceptable cost to economic development. It could be viewed as an additional tax or levy, discouraging investment and development, with costs being passed on to tenants and business<sup>5</sup>.

<sup>5</sup> Restricting supply may also create an artificial shortage, and push rents upwards (Bateman, 1985:39, 150)

Unless the scheme was introduced universally, investment may bypass any city that applied such forms of control over the market. For example, if the scheme was implemented in the Adelaide CBD alone, there is a real possibility that new development may gravitate to inner-suburban areas or other capital cities without such imposts, exacerbating the problem. Whilst there is no evidence that developers have decided to build elsewhere as a result of the severe controls imposed by the San Francisco Downtown Plan, that city has a high demand and attraction for office space – unlike regional cities such as Adelaide (Ghosh, 1990:25). In the case of Adelaide, there is a much higher probability that developers and investors would gravitate elsewhere.

In the present depressed economic climate, the state government and the Property Council see new investment and business as the key to revitalising the City of Adelaide and the State. Incentives and encouragement are provided to new businesses and developers, rather than imposition of penalties or exactions.

Therefore, it will need to be demonstrated that such a scheme, whilst it will impose additional costs on the individual developer, will have net overall benefits for business and the property sector. In addition to community costs, blighted sites have a negative impact on business. Conversely, there is likely to be a *benefit to business of an improved urban environment* – assuming that the standard of the environment will impact on rental returns for a particular building. This approach was adopted by San Francisco, as explained by Ghosh (1990:24):

Much like the modern familiar notion of industry having to clean up after itself, the Plan argues that it is the attractiveness of San Francisco that makes growth possible in the first place. Therefore, the direct beneficiaries in interest ought to have the responsibility to pay for the maintenance of the support infrastructure and mitigation of adverse effects.

### **9.5 Requiring the property industry to ‘clean up after itself’**

The scheme of balancing investment with depreciation, of matching new projects with the replacement or disposal of existing, may be justified because even new buildings will eventually fall into decay. It should be the responsibility of property owners and developers to consider ‘cradle to grave’ life cycle costs, including cost of salvage or disposal of their buildings.

This concept is known as ‘reclamation’ funding’, whereby funds are reserved to cover restoration, disposal or salvage costs when a facility (such as a mine) reaches the end of its economic life<sup>6</sup>, and is akin to the ‘duty toward water’.

If owners did account for and internalise life cycle costs - including disposal costs - in decision making, then a TDR scheme would become unnecessary. The ultimate outcome could be that owners would factor in disposal costs to their projects.

### **9.6 Equity considerations**

The introduction of TDRs may be viewed as an inequitable penalty, an unfair imposition, by developers of new buildings, while owners of poor quality and unsuitable existing stock - the slum landlords - would receive a windfall, especially if the property/area rights were initially awarded gratis. Such subsidising of development of blighted properties may inadvertently encourage owners to run their properties down, with poor maintenance and

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<sup>6</sup> Button and Pearce have advocated taxes on new developments that aim to generate surpluses for use in any subsequent decline and depression phase (1989).

management. As Kooymans has warned: “Beware of subsidising people who do the wrong thing at the community’s expense” (personal communication, 1998).

Far from providing benefits to owners of deteriorating property, Gallion and Eisner recommended that they should be *penalised* in the form of higher property taxes (1980).

Nevertheless, there are overseas precedents of public incentives to address deteriorating private properties, such as the ‘Distressed Properties Investment Program’, Hartford, US. In addition, Button and Pearce advocated the use of taxation incentives as one tool for encouraging the refurbishment of derelict properties in private ownership. This taxation would reflect both the opportunity cost of disuse in a traditional economic sense but also embrace the *external costs* associated with dereliction (Button and Pearce, 1989). The justification for public incentives is that they offset these externalities or community costs.

To address the above concerns, obligations may be attached to owners of property rights, under which existing owners can be required to manage their properties effectively. Otherwise the privilege of owning rights may be withdrawn (as in water markets). Alternatively, the introduction of TDRs could be accompanied by changes to tax and rating systems to dissuade owners from letting their properties deteriorate.

### **9.7 Effectiveness of TDRs in flat market**

Insufficient demand for new construction may defeat a TDR plan as, in the absence of new construction, no demand for development rights exists (James, 1976). This is certainly an important consideration when contemplating the introduction of a TDR scheme in a depressed market such as Adelaide at present.

A heritage conservation related scheme of Transferable Floor Area (TFA) was introduced in Adelaide in the late 1980s, but has been seen by some as ineffective because of the small number of transfers in the ‘flat’ Adelaide market. On the other hand, Heritage Floor Space (HFS) transfers in Sydney – where demand is stronger - has been viewed as successful, as “demand for HFS will exist...at most times, *other than the very flattest periods of the cycle*” (Collins, 1998: 97).

Similarly, the scheme outlined in this paper, where demand for TDRs originates from new development, could involve few transfers in a stagnant property market and might be seen by some as ineffective. From another standpoint, though, it could be judged as successful because – like the TFA scheme - it only operated when there was development pressure, and declined when there was a lack of pressure (Brown, personal communication, 1998). It helps to put a valve on overdevelopment. The TDR scheme is really aimed at blight caused (albeit indirectly) by speculative over-supply of space. If there is reduced over-supply, then it would be serving its purpose.

Nevertheless, in response to concerns about the operation of the scheme in a flat market, TDRs could be purchased earlier by a TDR bank for refurbishment projects that reduced office floor space, and sold later by the bank when demand increased (buoyant market). They would still have value if not sold until later.



### **9.8 Type of TDR system and appropriateness**

There are various types and variations of TDR systems, appropriate to different circumstances.

For example, a TDR 'bank' or fund concept may be more appropriate for Adelaide. This would enable TDRs to be more directed and controlled, as compared to a scheme where developers of new buildings would buy TDRs, at the cheapest price, from the owner of any existing building.

In addition, under the bank concept, transactions could be approved and registered by the city council. This would then provide a source of funds for owners of existing buildings to use, at the discretion of the council, for conversion or demolition of excess office space. The funds could be targeted to where they would have most effect, rather than a scheme left totally to the free market.

### **10. Closing comments**

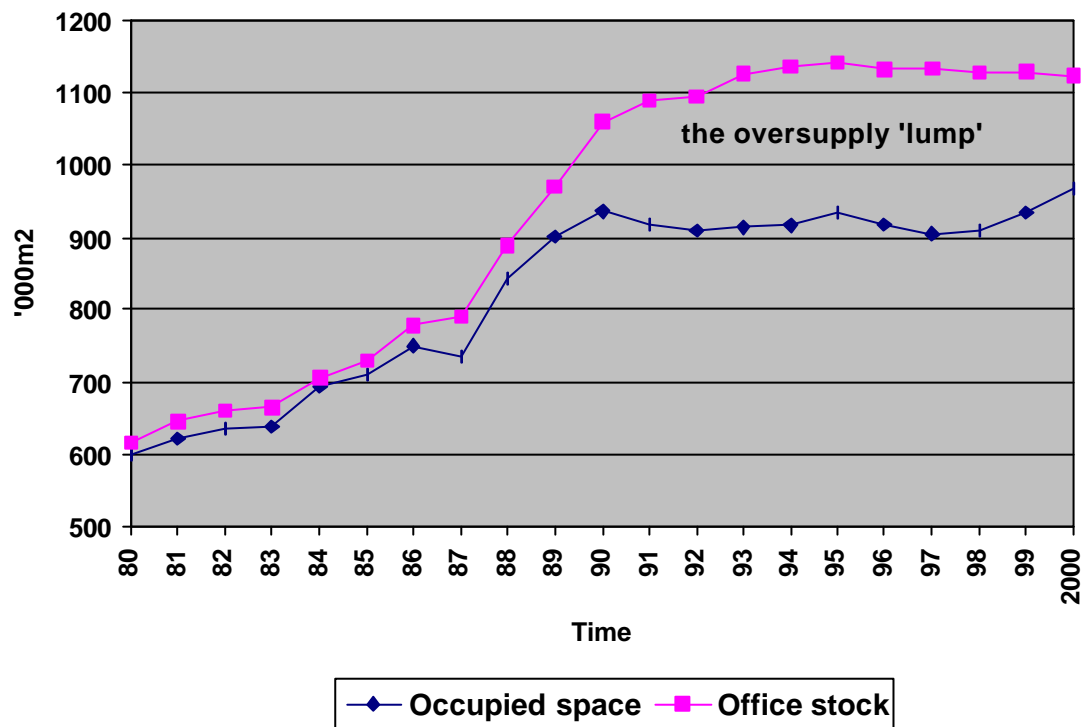
A model has been proposed for addressing the problem of oversupply, and its consequential community effects. This is based largely upon concepts utilised in regulating water markets, where 'sustainable' overall limits are established and a quota of property rights are issued according to these limits, and experience of regulating office markets in other cities.

The application of property rights for regulating overdevelopment is a new concept, and some of the ambiguities, concerns and limitations associated with such a proposal have been examined.

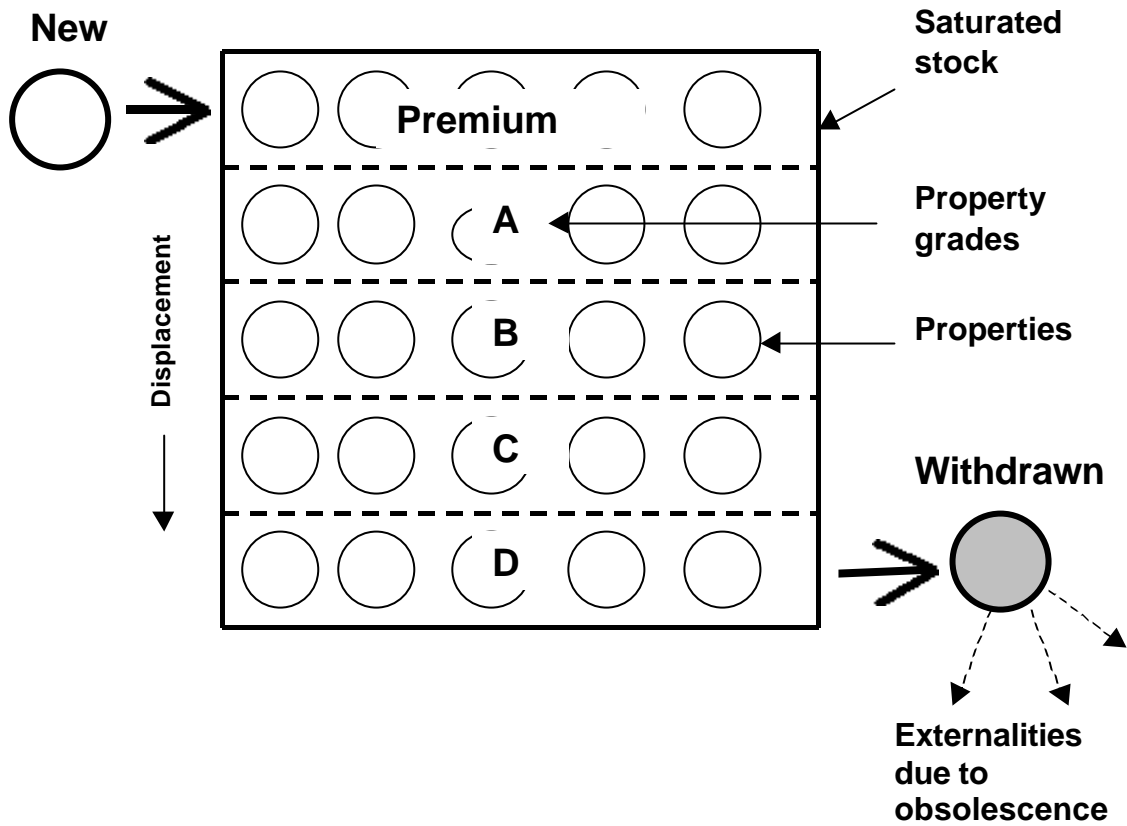
The proposal forms the core of the author's current PhD research, and comments are welcomed.

**Figure 1: Supply of office space (the office stock) versus real demand (occupied space), Adelaide**

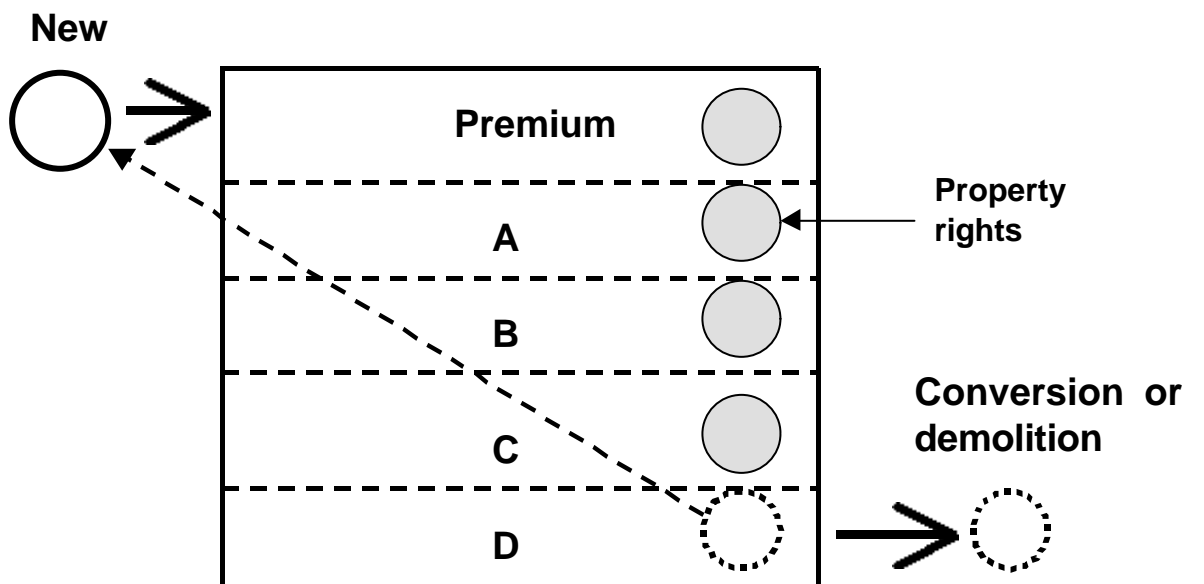
(based upon data supplied by BIS Shrapnel)



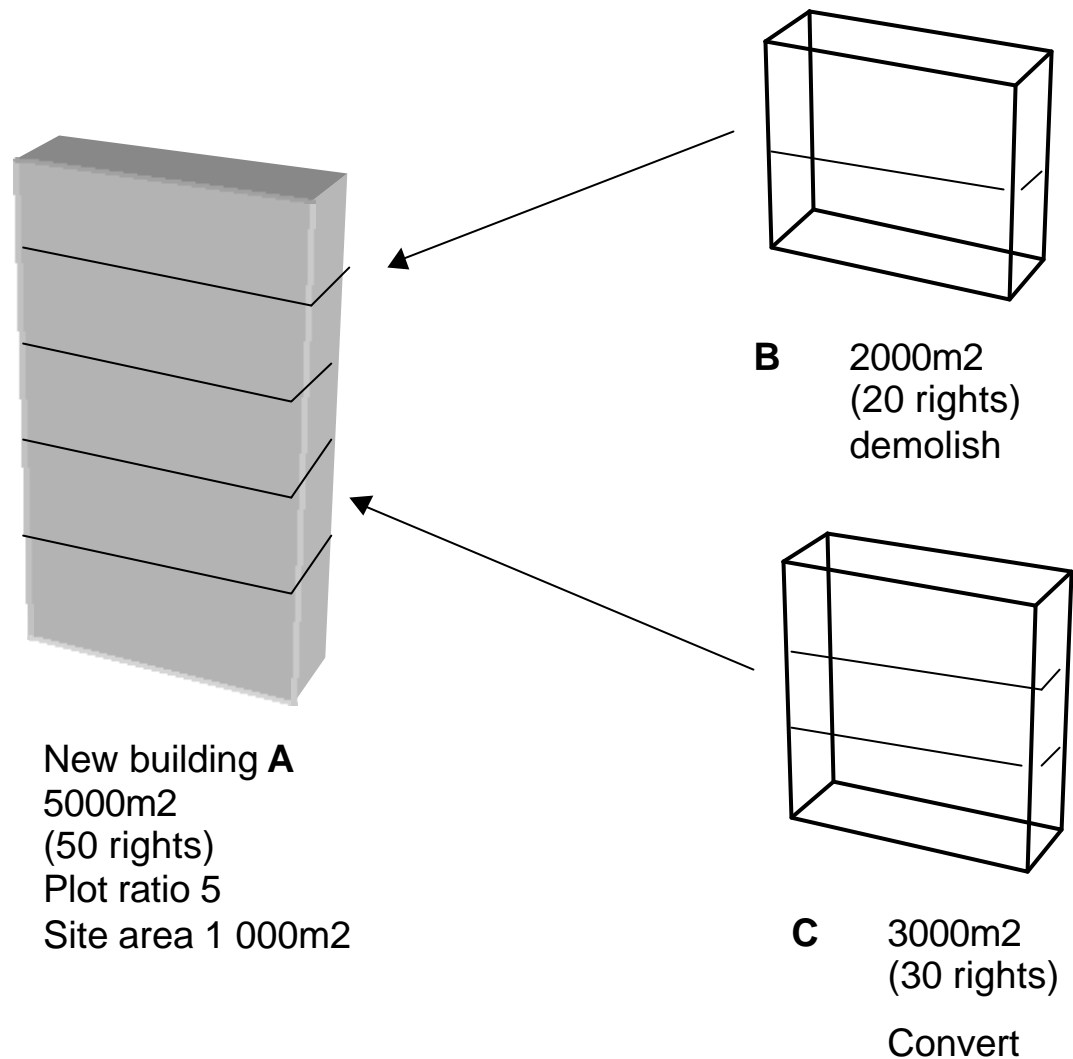
**Fig 2: New addition displaces existing building**



**Fig 3: New addition purchases property rights from existing, which is converted to alternative use or demolished – no net additions to stock**

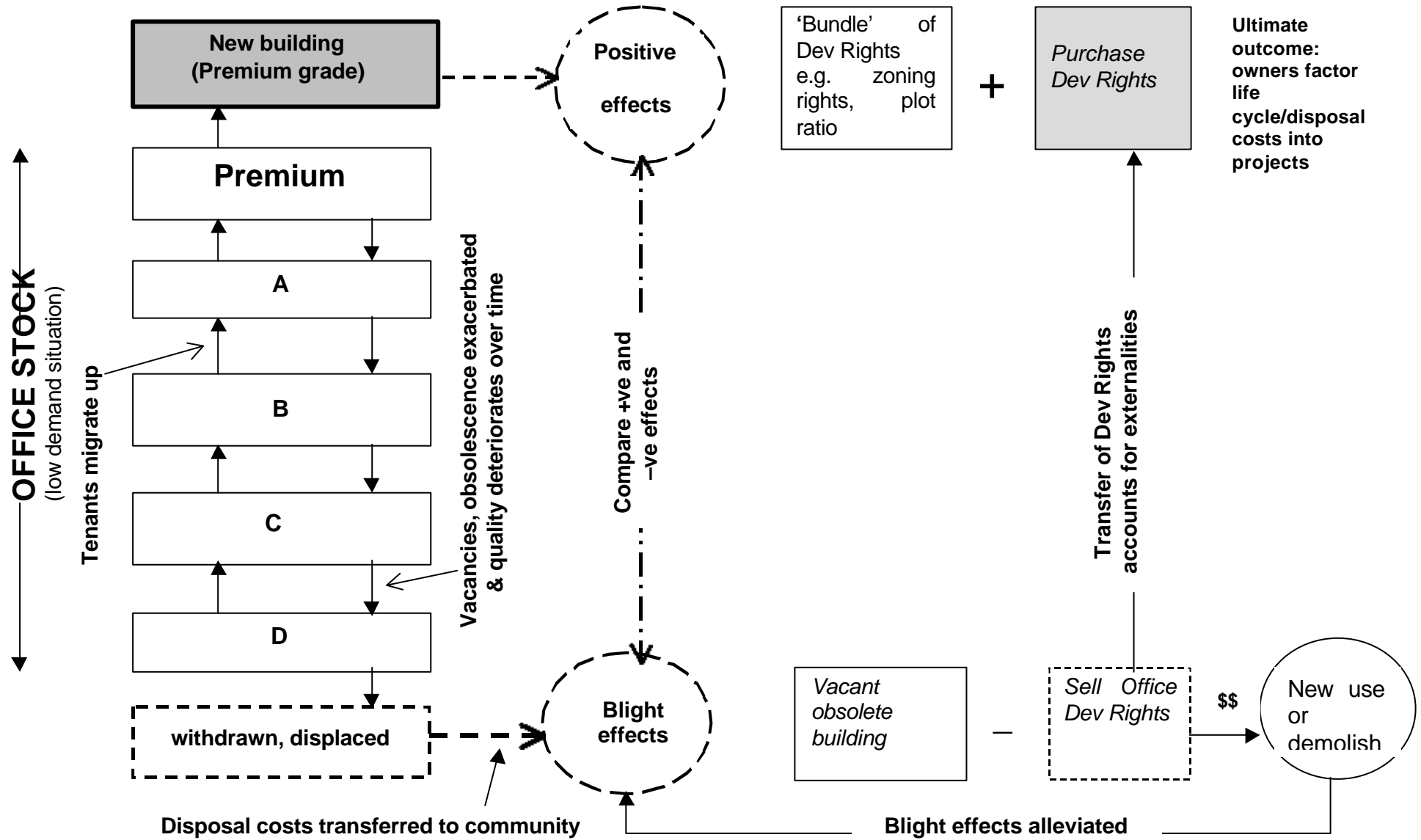


**Fig 4: Example: New addition purchases property rights from existing properties, which are converted to alternative use or demolished**



Assume developer A wishes to construct new building of 5 000 m<sup>2</sup>, the maximum allowable under plot ratio requirements, when demand is constant (ie no new rights released). Assuming rights are 100 m<sup>2</sup> each, then 50 rights are required. 20 rights can be acquired from owner B, who uses proceeds to demolish and rebuild for retail use. Another 30 rights may be acquired from owner C, who uses proceeds to assist with funding of conversion from office to residential use.

Figure 5: Use of transferable property rights to offset community costs of oversupply



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