THE NEW INDUSTRIAL: ‘SERVICING THE SERVICES’

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1.0 Introduction

"*Buy land, they're not making it anymore*". As London seeks to accommodate a population that is growing from eight million to ten million over the next two decades, Mark Twain's (1835-1910) maxim seems more apposite than ever. London needs to create 48,000 new homes annually, *just to keep pace* with household formation (by contrast, delivery has ranged between 15,000 and 24,000 since 2005). To some extent, Twain's rationale can be overcome by building high, and indeed London's skyline is being transformed by a proliferation of residential towers. A recent survey found 455 towers in the pipeline, all with twenty storeys or more.[1]

However, this has not prevented London's residential and commercial land markets colliding and competing, increasingly to the detriment of the latter. Traditionally separated in spatial planning terms, the pressure to create homes, combined with a major price differential, is leading to the conversion of office space to residential use and the re-classification of much industrial land for residential development. The past five years have seen unprecedented losses of commercial land and property.

When commercial stock converts to residential use, it never returns. The land value equation ensures that this is the case. In Mark Twain's terms, *once it's sold, you can't buy it back!* The problem that we examine here is that while much of the loss of stock has been based on the notion that the commercial land and buildings being 'released' to residential and other uses are obsolete, or surplus to requirements, many are in fact performing a critical economic function.

The scale of loss In the office sector, since Permitted Development Rights (PDR) were extended in 2013, around 7.5m sq ft of office space has been converted to homes; and there is the potential for a further 5.7m sq ft of conversions, implying a total potential loss of 13.3m sq ft (or somewhere in the region of 5%) of stock.[2] Evidence suggests that upwards of half of this stock was occupied:

> *for London as a whole, 55% of PDR schemes for which the occupancy status is known were occupied (of which 40% were fully occupied and 15% partially occupied). In several boroughs, more than 75% of the offices affected were either partially or wholly occupied. It is very likely that owners will have started the process of emptying buildings before putting in a PDR application and that the amount of space recorded as occupied is understated.*[3]

So, much of the stock was not redundant. Generally speaking, it was providing secondary (less expensive) space for firms that could not afford prime rents.

Despite the significance of office-to-residential conversions, this paper focuses on the industrial sector, where an equally important denudation of stock has been occurring.

Between 2010 and 2015, London lost around 500ha of industrial land, against a monitoring target of 185ha. There are currently 7,000ha of industrial land remaining, which is being lost at the rate of around 100ha per year, compared to the benchmark release figure of 37ha per year set out in the *London Plan* and *Land for Industry and Transport SPG*. It has been recommended that a more suitable figure would be nine hectares per year.[4] The fundamental problem is that most of the land being lost is not 'industrial' in the traditional sense of the term, but is home to

service-based businesses, occupying economic, often previously industrial buildings, and providing a plethora of goods and services absolutely crucial to the efficient functioning of London's World City role.

2.0 The nature of industrial land and buildings

It is conventional for property professionals to assess the supply and demand dynamics of commercial land and buildings in terms of the major divisions of the 1987 Use Classes Order, namely: office (B1), industrial (B2) and warehouse/distribution (B8). This demarcation is a perfectly rational one when the dominant activities that take place in, respectively, offices, factories and warehouses, are mutually exclusive.

However, fundamental changes to the nature of the economy have resulted in new demands on buildings and building design, which call into question the exclusivity of these uses. While a downtown office building, a food production plant and a logistics building are clearly all quite distinct from one another, a growing amount of economic activity involves the blending of different activities, with a growing emphasis on service-based activities. The GLA noted that while London's manufacturing jobs were just 3% of all jobs, industrial land accommodates 11% of total employment.[5] In other words, there is much economic activity taking place on industrial land that does not involve people making things.

Activity versus sector The significance of this observation becomes apparent when spatial policy seeks, for example, to protect or release 'industrial' buildings. It is important to have a clear understanding of exactly what is being protected or released. Much activity on industrial land is no longer 'industrial' in the conventional sense of firms making goods. Thus, when it is suggested that a building is released "*because it's industrial, and we all know industry is in terminal decline*", then there is a danger that such a move could be contributing to a potentially growing shortage of exactly the kind of space that London's modern economy needs.

In other words, there is a need for a subtler understanding of what activities take place in so-called industrial buildings. Analyses using the Standard Industrial Classification for jobs and the Use Classes Order for building types are increasingly unfit for purpose.

Over the past three decades the London economy has become dominated by the service sector; amply demonstrated by the fact that between 1984 and 2014, manufacturing employment shrank by almost four-fifths, while financial and business services jobs more than doubled in number.

These dichotomous trends not only illustrate a very significant economic shift, but also hint at a critical issue for London's spatial planning and property markets: the growth of economic activity, mostly around the fringes of Central London and in Outer London that supports the expansion and smooth running of the central area.

The central area of London is a vast and complex economy that draws upon an extraordinary array of support activities. The financial and business services sectors are fundamental to London's World City role, but it also has great strengths in the creative and media industries, medicine, technology, higher

education and other sectors. In addition, there is the backdrop of the cultural and entertainment industries (including museums, galleries and theatres) as well as the tourist industry which generates many thousands of jobs in shops, restaurants and hotels.

This great weight of activity itself draws upon a vast range of support activities. To take one small example, consider the diversity of services and products consumed by the average office building each day: catering; cleaning; furniture; maintenance and fit out; office equipment and supplies; print and copy; security; waste disposal, and many others. Multiplied across the city economy, the sheer scale of demand for supporting activities becomes evident. Much is located away from the central area, often clustered around its periphery and beyond; and while mostly "low key", is vital to the efficient functioning of the city.

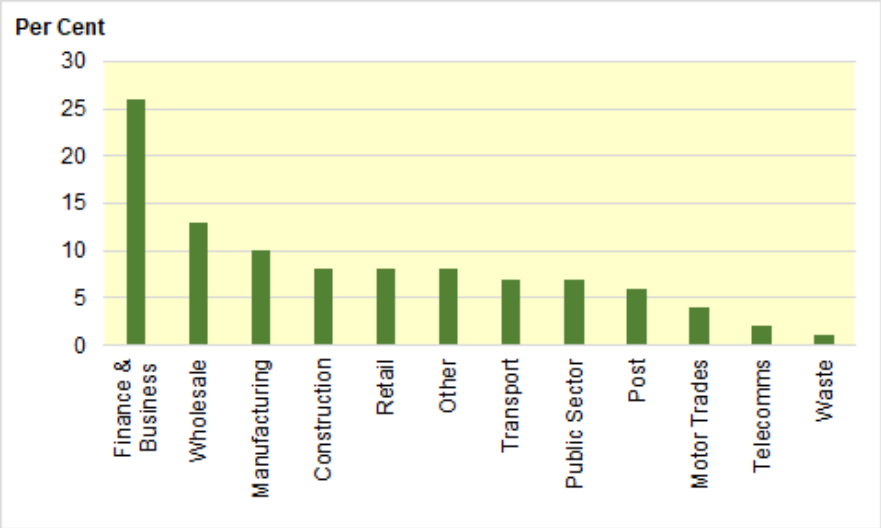
As the economy has become dominated by services, and manufacturing declined, so London's industrial estates have evolved, changing from places where manufacturing once dominated, to areas providing critical, often service-based support. In some senses, Park Royal (Europe's largest industrial estate) symbolises this transition.

In 1932 there were 73 factories, employing 13,500 workers on the estate.[6] Having sustained relatively light damage during the war, it continued to boom, and by the 1960s the area employed over 45,000 people. But by the 1970s it was facing large-scale industrial restructuring: "*Many of the multinational firms, the area's largest employers, chose to relocate, and by the early 1970s around 70 larger firms left Park Royal*". But the estate adapted: "*Many of the large factories that produced everything from beans and beer to bombers and buses have been replaced by or subdivided into smaller industrial units. These are being used by many smaller businesses today*", many of which are not conventionally considered to be 'industrial'.

Non-industrial jobs on industrial land The changing nature of London's industrial estates was highlighted in a 2011 study[7] which quantified the variety of sectors occupying industrial land (Figure 1). It found that only one-third of jobs on land designated for industrial uses were in manufacturing. Yet the broad sector headings are not very helpful in describing what activities are taking place.

A more recent study by Aecom[8] underscored the widespread evolution of industrial estates across London. The study found that almost half of all employment on designated Strategic Industrial Land (SIL) and Locally Significant Industrial Sites (LSIS) estates is in fact of a non-industrial nature (Figure 2). Thus, of 301,000 jobs on SIL and LSIS land, 129,400 (or 43%) were of a non-industrial nature.

Figure 1 Distribution of jobs by sector on industrial estates



Source: Roger Tym & Partners (2011)

Figure 2 Estimated non-industrial jobs in designated estates

Jobs	Inner London	Outer London	All London
Non-industrial jobs in SIL	9,400	63,900	73,300
Non-industrial jobs in LSIS	17,000	39,100	56,100
Non-industrial jobs in SIL/LSIS	26,400	103,000	129,400
Total jobs in designated areas	58,000	243,000	301,000
% non-industrial jobs in SIL/LSIS	45.5	42.4	43.0

Source: Aecom (2016)

The implication of these numbers is that many occupiers of industrial space today are not involved in what might traditionally be defined as industrial activities. Rather the buildings have been adapted and re-used by businesses that are not 'making things', but rather are involved in service-based activities.

3.0 Servicing the services

The property question arising from the discussion thus far is whether the property typically available to such occupiers is suitable for their needs. To begin to understand this question, we need to examine businesses and the activities they undertake in their buildings, rather than their traditional 'Standard Industrial Classification' or their position in the Use Classes Order.

Figure 3 illustrates the breadth of company types undertaking non-industrial activities in industrial buildings. The list is partial, and intended only for illustrative purposes, but it can be inferred that many of these firms are undertaking activities within their buildings that cannot be described as 'industrial' in the traditional sense of the term. We have collectively referred to this highly diverse range of activities elsewhere as '*servicing the services*'.[9]

Figure 4 then takes the analysis to the next level and describes the range of activities that might be taking place in the buildings occupied by the business types listed in Figure 3. Many do not involve 'things' at all, but are trading services: customer support, design, sales, software and training. The key point here is that the diversity of activities listed implies a range of working environments, from office space, to production space to warehousing.

Furthermore, the range of activities implies something about the nature of the workers employed within the buildings. For example, many are professional, skilled and technical staff. Such workers have higher expectations of their workplace than perhaps is the case with the generally perceived staff profile of a traditional industrial estate. Many are not involved in 'making things traditionally', but rather assembly, customisation, design, maintenance, repair, storage and value-adding.

Figure 3 Occupier types in industrial buildings

Occupier Types	
Art production and sale	Graphic design
Audio-visual equipment	Hospitality
Building materials & services	ICT support & infrastructure
Business services	Import & export
Cash and carry	Interior design
Clothing and fashion	Landscape services
Computers & peripherals	Mail management
Craftwork	Maintenance contracting
Data services	Marketing & media
E-commerce	Packaging supplies
Electrical services	Photography
Engineering	Printing
Event management	Publishing
Film & sound recording	Recording equipment repair
Food and drink production	Retail & wholesale sales
Freight forwarding	Security
Furniture & equipment	Software support
Graphic design	Training

Source: Ramidus Consulting

Figure 4 Activities in multi-use buildings

Occupier Types	
Assembly	Production & manufacture
Customer & technical support	Renting & leasing
Customisation & repair	Sales & marketing
Design	Showroom & demonstration
Distribution	Software development
Management & administration	Storage & consolidation
Packaging & printing	Wholesale & retail

Source: Ramidus Consulting

Also hinted at in Figures 3 and 4 is a mix of more traditional (e.g. assembly, maintenance and storage) and more modern businesses and activities (e.g. e-commerce and software). This is an important point, suggesting that industrial land and buildings continue to evolve and cater not only for established uses but also emerging uses.

Some activities that might be considered as traditional activities have themselves undergone dramatic change – often involving a switch from mass production to niche production. For example, printing no longer implies vats of ink and large mechanical printing presses: it is now digitised.

Indeed, much advanced manufacturing is based not on large scale, linear production of mass market goods, but mush shorter run production of specialist, fast-changing products. The growth of 3D printing is a case in point. As noted by Marsh, many workers in such tech-based manufacturing firms "*will not work in manual occupations … but in jobs such as research and customer support, which are more like service sector jobs*". Such firms want to "*bring together design, workshop, product development and customer service space – lab, studio, factory floor and shopfront*".[10]

Similarly, in the food and drinks sector: while very large manufacturers of very high volume foodstuffs have largely relocated away from London, much activity in this sector is now driven by SMEs making and selling specific and more customised products. The same dynamics hold in the clothing and furniture sectors, where 'artisan' and small-scale manufacturers are increasingly common.

The very wide variety of businesses and activities described here suggests that the conventional understanding of 'industrial' property needs to be expanded in order that spatial policy can be more sensitive to the dynamics of demand in industrial areas. In particular, there is a need to recognise the important role of hybrid buildings in accommodating activities that are vitally important to London's economy.

4.0 Hybrid buildings

The results of a study by Aecom in Wandsworth underline the issue about multi-use and adaptability.[11] It notes, for example, that there are a considerable number of SMEs within the study area, including businesses offering catering equipment hire, commercial cleaning services, event floristry and signage and laminating. The report observes that these businesses typically occupy space in "*industrial premises which have been adapted to suit their requirements*", where parking and loading is generally good, enabling them "*to transport goods easily to end destinations within the CAZ and wider London area*".

Aecom go on to conclude that there is likely to be a growing demand for such businesses, and that technology-led developments in customer businesses, such as online ordering and digital marketing and communications, might result in them "*requiring larger size premises, improved supporting and utilities infrastructure such as internet connections, or more parking and loading space to allow for more deliveries*". The implications for the provision of flexible space for small businesses are obvious, "*especially on land within or near to the CAZ*".

One of the defining features of servicing the services activity is its seeming inability to be neatly defined. The activities, as we have seen, are broad and widely varying. It is almost pointless referring to 'sectors' of industry in this context: there are no identifiable relationship between business sectors and design or specification requirements; which is why this paper has stressed the term activities: to reflect what happens inside the buildings, rather than how businesses are defined in government statistics. It is also why we use the term 'hybrid buildings' to refer to the building type most appropriate response to the trends described here.

While there are no hard boundaries to the definition of a hybrid building, the following series of images helps to illustrate what might be excluded and what might be included. For example, Figure 5 shows a traditional industrial building, a waste recycling plant and two large logistics sheds. None of these are considered as hybrid buildings: apart from access needs and neighbourliness issues, their occupiers are more traditional and tend towards a single use within their space.

Figure 5 Industrial, logistics and *sui generis* buildings

Similarly with office buildings (Figure 6). Whether new and located in landscaped surroundings, or old and situated in the middle of an industrial estate, such single use buildings do not fall within the hybrid building concept for servicing the services activities. The former are generally too expensive and the latter are inflexible and lack adequate servicing and access.

Figure 6 Office buildings

In contrast to traditional industrial, logistics and office buildings, servicing the services requires flexible buildings that can accommodate different and changing proportions of activities. Figure 7 illustrates the types of buildings that are appropriate. The plots show relatively low density developments; while the structures allow a mix of one and two story accommodation, for office, production, storage and many other activities. The buildings are relatively 'lightweight' and made from largely pre-fabricated materials.

Figure 7 New hybrid buildings

The images shown in Figure 7 are of new buildings, but of course, the reality is that most businesses occupy older, more economic stock. Figure 8 shows typical stock: older; deteriorating, poorly serviced and increasingly obsolete. But relatively cheap. These premises have inherent problems, but they are widely available.

Figure 8 Older, secondary hybrid buildings

Of course, not all stock is old, deteriorating and poorly managed. Figure 9 shows two examples of old industrial buildings that have been re-purposed and subject to new management regimes.

Established in Wood Green in 1996, the Chocolate Factory provides 150,000 sq ft of workspace for over 200 businesses. Rents are tiered, from £8-£20 sq ft, depending of space type. The Chocolate Factory is an arts development charity and affordable creative workspace provider. Collage Arts' vision for the Chocolate Factory is to foster and support a vibrant centre for the creative industries and for this to be the key catalyst within the development of the 'Wood Green Cultural Quarter.' The Chocolate Factory houses a diverse mix of 'designer-makers', manufacturing glassware, ceramics, clothing, metal works, films and lighting production.

Figure 9 The Chocolate Factory and the Bootstrap Company

Social enterprise Bootstrap Company provides affordable workspace and support for local start-ups, social enterprises, charities and businesses in Dalston. Bootstrap Company was founded in 1977, as a training and enterprise organisation helping local people get out of poverty and into work: the place has evolved but this is still very much at the core of its mission.

Affordable, managed workspace is provided on sliding scale rents, which reflect the social impact, community commitment and management structure of the business. The buildings are for the most part concrete frame constructions, with open spans and robust concrete floor slabs. Floor plates can be easily divided into many different configurations, allowing the building to adapt to the needs of different tenants. Several businesses we interviewed pointed to the buildings' adaptability and flexibility as a significant attractor. Occupiers include bicycle trade, fashion design, printers, recording studios

Hybrid building features The images in Figures 7,8 and 9 suggest that occupiers who require economical buildings of simple specification in locations with good access to the central London economy. The buildings should be simple and functional in design, and available in a range of sizes. Ideally, they should be provided on integrated estates with good management. Access is paramount both in terms of getting to clients efficiently and in terms of access and turning space for delivery vehicles.

Hybrid buildings typify the demand of 'servicing the services' occupiers because they can be adapted to accommodate different uses within the same building shell. Figure 10 summarises the main features of a hybrid building.

The construction of mezzanines, sub-division of space and enhanced specification are typical of such modifications to accommodate a wide range of activities. Many companies would be adequately accommodated in different kinds of environments, however the lack of alternative supply means spaces in industrial areas often offer more cost effective and realistic premises.

Figure 10 Basic features of a hybrid building

Space that combines economy and quality
A basic, low specification that can be upgraded
A fit out that allows adaptation to specific needs
The ability to erect and dismantle partitions to suit changing needs
Better designed environmental control systems
A menu of options available over fit out
A management regime sensitive to business dynamics

Source: Ramidus Consulting

Premises size The spectrum of companies occupying hybrid buildings is very wide, and there is no typical premises size requirement. However, it is possible to narrow down options. Thus, there are very small units of, say, less than 100 sq m, suitable for micro businesses and in multi-let buildings and 'business centres'. At the other end of the scale, a large building might be described as one larger than 3,000 sq m. There will be requirements for space much larger that this; but in terms of typical market activity, anything over 3,000 sq m would be considered a large unit. Between these two extremes, two size bands, of 100-1,000 sq m and 1,000-3,000 sq m are helpful to distinguish smaller and larger requirements.

Storeys, access and servicing The number of floors in hybrid buildings normally varies between one and three, with two being typical. Many purpose-built buildings are constructed as single-storey, double height space with the capability of accommodating a mezzanine floor.

Ideally, a mix of single and double height space would also permit different kinds of uses. Proportions will vary, but for generic guidance, perhaps two-thirds of the space at 4.5m high, and a third at 6-8m for storage, studios, production, and so on. The higher dimensions allow pallets to be racked six high.

The need for 'white van' access for goods and materials has led to a market norm whereby occupiers are not normally 'stacked' across multiple floors, although there are many examples of 'business centres' where occupiers with minimal such need occupy two and three level developments, with access to a shared goods lift.

Specification typology Despite the enormous variety of potential occupiers and activities of hybrid buildings, it is possible to prepare a typology of activities and their appropriate key specification features (Figure11). The table shows four generic demand functions, each reflecting a slightly different use profile and specification requirements, although the management regime is likely to be

common to all – more intensive than normal for sheds, with greater emphasis on customer services.

The four generic types are not exhaustive, but illustrative of a principle, and can overlap within a single occupation. The proportions of each type of space will vary according to the occupier, emphasising the need for building flexibility, and for a sympathetic ownership/management approach. All four generic types require space that is flexible and easy to adapt. A depth of 13-18m is adequate to cater for most needs, allowing reasonably deep open plan areas, while also giving sufficient depth to allow different configurations of sub-division.

Figure 11 Four categories of use and their specification priorities

Occupier priorities			
Production	**Client-facing**	**Workshop**	**Goods handling**
Power supply	Quality image	Natural light	Eaves height
Fire protection	Comfort	Comfort	Loading bays
24-hour operation	Accessibility	Security	Column free
Security	Security	Car parking	Secure yard
Retail trade	Car parking	Local amenities	Turning space
Parking & access	Local amenities	Power supply	Parking

Source: Ramidus Consulting

The accommodation need is for a higher quality than traditional sheds provide a greater functionality. The following chart illustrates four generic demand functions, each reflecting a slightly different use profile and specification requirements, although the management regime is likely to be common to all – more intensive than normal for sheds, with greater emphasis on customer services.

Building security, access and parking are, unsurprisingly, all important issues. Attention to detail in these areas would make a very significant impact on a building's attractiveness to potential occupiers.

The overriding concern of the types of companies we are referring to here is to find space that combines economy and quality. While office rents and specification are not needed, a step up from poor quality shed environments is certainly in demand. A basic (low specification) fit out that allows occupiers to adapt to their specific requirements is the basic need.

The ability to erect and dismantle partitions to suit changing needs as product lines and volumes change is an obvious solution. Better designed temperature control systems and protection from the elements would make a major improvement (and reduce the environmental impact) to most buildings. While partitions and temperature control systems are often in conflict, the key is a creative solution to the configuration of single and double height space.

Lighting is generally less of an issue, so long as natural lighting is good. Again, a basic lighting system can be inexpensively supplemented by the occupier to suit specific needs.

The key to a more appropriate fit out solution would appear to be a menu of options available over the shell and core provision, allowing occupiers to meet budgetary constraints, whilst securing a solution that suits need.

5.0 Neighbourliness and co-location with residential

Much of the foregoing concentrates on the design features of hybrid buildings without referring to the context within which they fit, i.e., their neighbourhoods. As the occupiers of industrial estates have evolved to become less 'industrial', so their compatibility with housing has improved. Noise and air pollution, for example, have fallen dramatically.

However, there remain issues. One of the most important is the issue of access for cars, vans and lorries. Throughout the average working day, vehicle movements can be numerous, introducing both congestion and safety concerns. This places limitations on how far such estates can or should be integrated with residential areas.

Additionally, many businesses on industrial estates operate long hours and at weekends. A location within a residential setting can cause problems regarding neighbourliness. Such sites should not be restricted unduly in terms of hours of working. Waste management can be a further issue as waste material can accumulate quickly. This issue is of growing importance given increasing legislation on responsibilities. Improved estate management solutions to waste management will grow as a differentiator for occupiers.

Most new 'industrial' developments are aimed at a host of occupier types, and the developer/owner must be able to maximise letting opportunities. This generally means that, within the context of the overriding use of any given site, there should be no user restrictions in order to improve neighbourliness.

In terms of compatibility, there is also a question of critical mass. Most businesses prefer to be in 'business environments', i.e. surrounded by other commercial activity. This brings non-tangible benefits in areas such as staff attraction and retention. More isolated businesses might find it more problematic to recruit staff. There are also tangible benefits. For example, greater concentrations of business activity are more able to attract support services such as retail and food offerings.

It is for these reasons that employment space on the ground floors of residential developments are unpopular. Being ancillary to another land use, i.e. residential, does not work for many businesses.

Overall, while many modern occupiers of 'industrial' space are far more compatible with residential uses than their forebears, there remain significant issues. The opportunities for co-location with residential are therefore more restricted than might be superficially apparent.

There is then the question of intensification and high rise. As the pressure to provide more housing increases, there is a growing need to make the best use of land. There is no doubt that modern buildings on industrial estates are more efficient than most of the older stock. It is also clear that modern buildings are

occupied more densely. So intensification is already occurring as older stock is gradually replaced.

6.0 Conclusion

An underlying theme of this paper is that our traditional approaches to studying, developing and planning industrial land are becoming out-dated. The economy has changed dramatically, and accepted methods for understanding jobs (Standard Industrial Classification) and buildings (the Use Classes Order) are increasingly obsolete in being able to convey accurately how industrial land and buildings are being used. Not least, traditional approaches fail to recognise the significance and scale of non-industrial work and jobs taking place in 'industrial' land and buildings.

A major implication of this is that we are failing to understand and support a part of the London economy that is hugely important to the city's future efficient functioning and its Global City role.

The greatest threat to servicing the services by far is the loss of industrial land, primarily to residential uses. There is an urgent need to reverse this trend and to provide the development and investment community with a degree of certainty over the future of industrial land. As long as there is the prospect of change of use, then owners and developers will not invest in commercial space.

Spatial planning has a particularly important role to play. For example, if increasing land shortages are to be stemmed, then planning must become more protective of industrial land. It must prevent the wholesale loss of sites, as well as the fragmentation of sites. The latter reduces the strength and sustainability of business ecosystems. Greater protection will introduce certainty and enhance the potential for new investment.

The new *Draft London Plan* has gone some way towards stemming the rapid loss of industrial land.[12] Among other things, it is now pursuing a *no net loss* of capacity on designated SIL and LSIS land. But almost 40% of 'industrial' land is not designated, and so this large proportion of our remaining capacity remains at the mercy of market forces. The *London Plan* does not go far enough in recognising that 'industrial' land performs a far more important function than supporting 'heavy', 'dirty' and unneighbourly activities.

But the *London Plan* has also missed an opportunity to provide a creative response; it could go much further than protecting land use. It could become an advocate of change and innovation. Spatial planning must demonstrate how land can be used more intensively; how multi-storey buildings can meet demand; how sites can be master planned, and how public realm can be improved. Planners have an opportunity to work with developers and providers to create innovative designs for both cleared sites and old, existing industrial stock.

Over the past couple of decades there has been little innovation in 'shed' design, beyond the specific case of the logistics market. Elsewhere, little has changed in terms of the nature of the product. One reason for this lack of innovation in building economics – in that there is perceived to be limited scope to create a higher cost product. Another possible reason is the standard model of the UK institutional lease, which can be slow to respond to shifts in market demand. As a

result, there are significant gaps between the nature and demands of businesses and the property that is generally available to them.

Perhaps now is the time to be bold and creative in our understanding of and approach to buildings to accommodate *servicing the services* activity.

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