SPATIAL CHAOS; ADDRESSING SPATIAL OVER-PRODUCTION IN DUBLIN, IRELAND

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ABSTRACT: This paper examines certain outlying, boundary or edge areas of Dublin City, with particular emphasis on recent development at two scales, the city and the neighbourhood, examining the context of recent change and formal aspects of the new areas, leading to the conclusion that there is spatial over-production, and that rapid unchecked change has led to a form of spatial chaos.

KEYWORDS: spatial chaos, produced space, unbuilding, predictive spatial design

BACKGROUND

When a small island economy grows to produce one of the highest levels of wealth worldwide, from a primarily agriculture base only decades before, much of the confidence and prosperity created expresses itself in a physical form. Specifically in Dublin, the capital city of Ireland, rapid unchecked change has led to a form of spatial chaos. This paper examines certain outlying, boundary or edge areas of Dublin City, with particular emphasis on recent development at two scales, the city and the neighbourhood, examining the context of recent change and formal aspects of the new areas. Four new parts of Dublin, termed 'emerging outlying density areas', are discussed at the scale of the city, and one of these is more closely described, leading to observations on current spatial trends in Dublin. In discussing Dublin, the County boundary applies, which comprises the centre City area, together with the three adjacent local authority areas, also collectively known as the Dublin Region (Fig. 1).

The reason for this emphasis is the more particular focus of the enquiry, related to locations just outside or beyond the city centre, which are growing fast but which lack legibility and identity, particularly at the new centres. These particular situations, like much of recent development in Ireland, have been under-analysed and little studied, particularly across the design scales. They were developed quickly, with favourable political and economic conditions contributing to a building boom. As they occur on the edges of (or beyond) the more historically defined urban entities like city centre or historic urban village centre, (Fig 2) they have struggled to become locations with a particular character.

For the purposes of this paper, Dublin will be considered in the context of the terms 'produced space' and 'spatial chaos', as defined and described by Henri Lefebvre in his book, The Production of Space[i], first published in 1974. The French philosopher, whose work began with sociological enquiries into rural and peasant societies, later wrote extensively on urbanisation and spatial practices, connecting local scales to global change. At a time when the island of Ireland is still struggling to evolve towards an urbanised identity, particularly in its physical form, the writings of Lefebvre have exceptional relevance.

The land area of the Dublin Region is 92,000 hectares approx, and has a population of 1.18m people[ii]. The population of the Republic of Ireland grew by a record 8.1% between 2002 and 2006, from 3.9 million to 4.2 million[iii]. The population of three counties adjacent to Dublin County, namely Wicklow, Meath, and Kildare accounted for 29% of the growth in the national population.

Figure 1 The Dublin Region in the Greater Dublin Area (GDA)

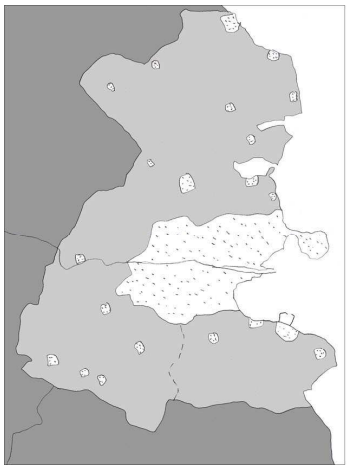

Figure 2 The Dublin Region; Dublin City and Historic Urban Village Centres

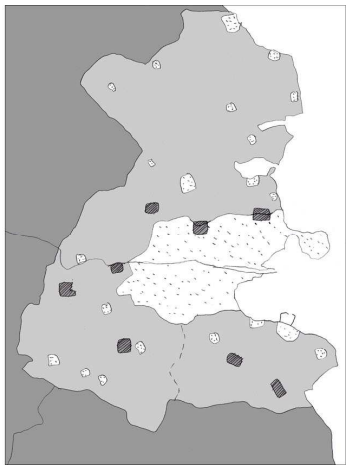

Figure 3 Emerging Outlying Density Areas

One third of the total housing stock in the Republic of Ireland was built in the 10 years up to and including 2006, and of this approximately 34% was built in the Greater Dublin Area (GDA)[iv]. The quantity of new office floor area, and service sector spaces such as hotel rooms, car parking spaces, and shopping units, have all risen equally dramatically. In 2006, at the height of the Irish building boom, almost 90,000 new dwellings were constructed; the bulk of these in semi- detached or terraced housingv. The size of the new developments also grew; the average newly constructed house floor area nationally increased by 22% between 1990 and 2006. In 2006 alone they grew by 6%vi. Average floor areas of new apartments grew by 26% in the same period, and grew by 3.7% in 2006 alone. The country has also become more urbanised; in 1990, one residential unit in every 10 constructed was an apartment, by 2006 it was approximately 1 in every 4vii.

The relative population density of Dublin in European and world terms is still low. Described as a "low to medium rise city",viii at 4,400 persons per square kilometreix, 18 persons/acre, the city has traditionally been a low density, evenly distributed conurbation, 'a city of houses'x, although the physical extent of the city catchment, including suburb and extra-urban development, has been growing dramatically in the last 20 years.

In order to discuss produced space, we must first review Henri Lefebvres' definitions of the words 'product' (can be reproduced exactly, is the result of repetitive acts and gestures), and 'works' (unique, original, primordial). Products are seen as the antithesis of works. In his writings, contemporary urban space is mainly viewed as a physical representation of economic and political forces or power, leading to a mass production of physical form, and the spaces this contains, at all scales. The differences between creation and production, nature and labour, the unique and the reproducible, difference and repetition, help us to define the term 'produced' space[xi]. In this paper, the term 'produced' space relates to recent rapid growth in the quantity of constructed areas and buildings together with an assessment that much of this is 'produced' rather than created or designed. Relating these definitions to Dublin, it is proposed that the lack of identity or coherence of these new areas is the result of an unconscious, disjointed or unconsidered process of decision-making at numerous scales or levels. In area and building terms, it could be argued that this type of space has particular manifestations; often dislocated, inefficiently used, in non-adaptable development, with inappropriate density, poor performance, low architectural quality, and a lack of specificity and character.

Henri Lefebve's description of the expression 'spatial chaos' is worth quoting in full[xii];

> *"The combined result of a very strong political hegemony, a surge in the forces of production, and an inadequate control of markets, is a spatial chaos experienced at a parochial scale just as on a worldwide scale… Might not the spatial chaos engendered by capitalism, despite the power and rationality of the state, turn out to be the systems Achilles' heel ?"*

Inherent in the writing of Lefebvre is the consideration of quality, what this constitutes, how it is

achieved, and who, or which kinds of societies cause it to come about. It is clear that the product is considered by the author to be less valuable than the 'work', which according to his logic, would be the ideal achievement of a society, and also that too much production can lead to a spatial chaos.

As regards the scope of this enquiry, a question arises as to the scale or level of detail at which to examine these emerging outlying density areas. As the primary level of interest here is related to form, including visual or physical aspects of space and place, this study does not deal in detail with the cultural, social, economic, political or other factors and processes leading to the realisation of these developments. The two particular levels of scale relevant to this study, the city or urban scale and the neighbourhood or area scale, are analysed here primarily in relation to urban and building form. While other levels of scale could include district, street, plot, or even building, the inter-relationship between these two scales of examination will allow general observations to be made, and conclusions to be drawn for the city and also for an area, while also having awareness of particular site conditions and their variations.

Certain areas are highlighted here as having characteristics in common. These are termed 'emerging outlying density areas' (Fig. 3), as they demonstrate heightened levels of current development activity, have not evolved from historic village or town centres, are being more densely developed than the surrounding densities, and are more commonly identified generally as areas rather than towns, centres or distinct parts of Dublin City. While some other locations around Dublin City display similar traits, these particular areas have been selected for the following reasons;

- Clear physical boundaries or edges to the new entity
- Active recent planning and development history in the particular location, also rapid physical change, and projections of significant additional population growth
- Evidence of an environment (patterns, densities, qualities) which differs radically from the surroundings.
- Little previous study of the area by urbanism, architecture or planning, particularly post-occupancy
- The apparent lack of overall identity, pre-established public realm and connectivity in the urban structure and form of the new area.

Another feature of these locations is the proximity to major city infrastructure, (Fig. 4) whether transport, utilities, etc. and the resulting sense of severance or 'disconnect' from the surroundings generally, but also the traditionally recognised image of the city of Dublin. Many are developed on green field, former industrial or brownfield sites, adding to the sense of isolation from established patterns of urban life in Dublin, and are without clear new identities in themselves.

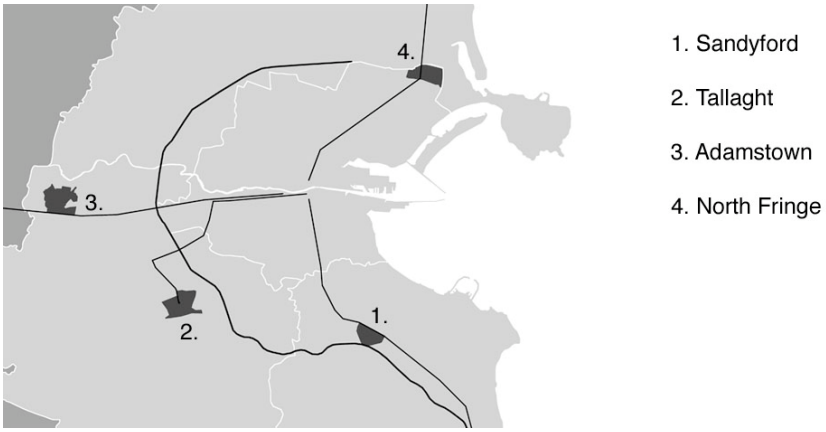

Figure 4 Dublin Transport Provision

Four areas indicated here (Fig. 5) are of broadly similar size, are similarly located outside of the city centre, have new resident populations and rapid recent growth, and display densities which depart from the surrounding patterns. They are Sandyford, Tallaght, Adamstown and North Fringe, each of which could be regarded as a new town, though this term is rarely used in connection with any of the four. Each has a distinct political history: Sandyford, an industrial estate, expanded into residential use due to public transport infrastructure provision without an overall master plan, Tallaght was the result of a political decision to incentivise an 'urban renewal area' in 1988[xiii], Adamstown is a new master-planned town, located as a result

of the accident of being a green field location on a major rail line, (located on one side only of the line), and North Fringe, another green field location, also benefits, (on one side only again) from a major rail link. In fact, as should be the case, public transport provision has been a major factor in the development of all four new towns. However, at the scale of the city, these areas can be seen as 'produced' rather than 'worked', less the result of a collective will or collective thought, more solely the results of productive and economic force.

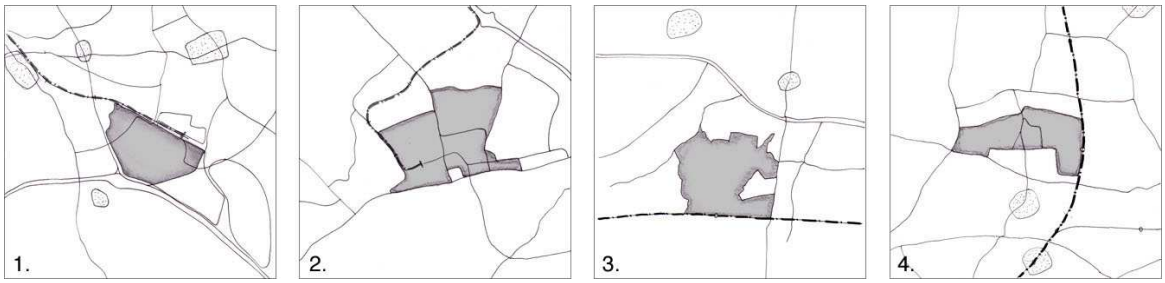

Figure 5 Sandyford, Tallaght, Adamstown, North Fringe

In order to more closely illustrate the conditions of the emerging outlying density areas of Dublin, and to assess whether there is an over-supply of produced (or non-created/designed) space, one site has been chosen, to be reviewed in more detail, considering the following aspects; location, use, density, performance and quality. This assessment method could be termed a 'Spatial Audit ' and is arrived at following considerations of other possible criteria for an assessment across many scales of the architectural, urban and broader designed environment, as a result of a separate study of recent oversupply of produced space nationally in Ireland[xiv].

The assessment criteria are intended for use at many scales related to the designed environment, from a room to a city, and are devised in order to combine qualitative and quantitative assessment processes for buildings and areas. It is expected that using these methods of analysis, spatial design across many scales could move towards being more predictive of certain aspects of development, including form, but also location, use, density, performance, and quality.

Of the five aspects, possibly two, density and quality, most easily relate to the Lefebvrian spatial theory, in that product clearly implies low quality, and large quantity of production, or density. However when examined more closely, the other three headings might also relate to Lefebvrian meanings. Location, if inappropriate, is a good indicator of the chaos, or disorganised, incoherent organization of space, led by factors other than ones which might constitute works, or a studied, "unified code"[xv]. Use also relates to social practice for Lefebvre, and gives the concept of space its full meaning[xvi]. Performance, here taken to mean energy efficiency and/or adaptability, but also related to firmness or fitness for purpose, would relate to the requirement for social space to be subjected to "formal, structural or functional analysis"[xvii].

The particular Study Area chosen is a 1km x 1km area approximately, within the wider definition of the Sandyford Industrial Estate, in the south east of Dublin, focusing on the existing or likely/proposed 'town centre', which coincides with the public transportation hub for the surroundings, and which is intended to be the core of the new area. This corresponds to a 500m walking radius from the transportation node, and a 5-7min walk.

The assessment of the selected area under the headings cited above, on a given date, indicates only completed developments or parts of the area. It records only the current reality of the place, as later phases, area development plans, economics, demolitions, etc over time could change the experience or impression of an area significantly. In these emerging areas, recent economic events have had a significant impact on the long-term deliverability of later phases, including important infrastructure in some cases. This raises the question even more urgently of whether these places work, and can be defined as works, as constructed now.

At this scale, of area, place or neighbourhood, the relationship between individual blocks of the area becomes clear, and the connection to the centre or nearest public or other transport access is visible. The term place could relate here to the definition of Parish, one of the earliest community administrative units in Ireland[xviii], and most identified until recently in Ireland as home. The area is analysed in graphical form mainly by definition of building plot outlines, which is most likely to coincide with ownerships, rather than

figure ground plans, or block outlines. In this way, the coherence or otherwise of form is demonstrated most clearly for the area.

Location

This assesses the appropriateness of the location of the buildings or developing areas in relation to linkage to established urban village locations, other communities or centres, transport or other infrastructure provision, and current facilities in the area. In Sandyford, the historical diagrams (Fig. 6) indicate a rural setting only 35 years ago, then low density housing provision, and later an industrial estate, the fundamentals of which still remain. These include a road network and block size laid out for industry, which has recently been poorly adapted on individual lots for mixed use. The public transport provision, a single light rail or tram line, inaugurated in 2004, just 20 minutes from the city centre, has a carrying capacity of 3,800 persons per hour, but has been struggling to meet passenger demand almost since it started.

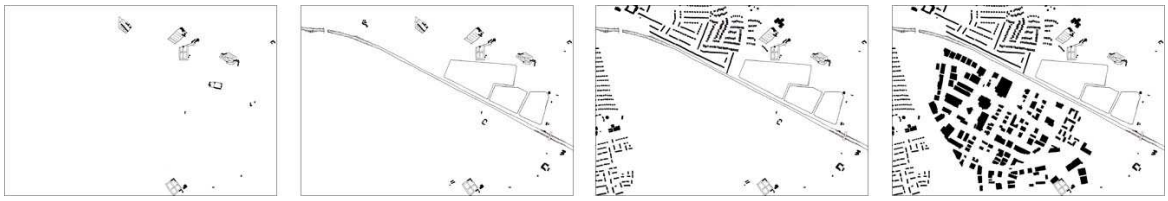

Figure 6 Historical Growth Maps of Sandyford Area; 1830, 1910, 1975, 1994.

Sandyford is an extreme case of inappropriate location; there was no "client" in planning terms for the overall development of a new town, no existing community, or planned receiving urban context (other than light industrial) no overall plan, poor infrastructure provision, and very poor links to the surroundings, with severance exacerbated by recent overprovision of single direction widened roads.

Use

This is an assessment of the area, land and/or building uses currently, with an assessment as to whether these are appropriate uses for an emerging outlying density area. The plot plan (Fig. 7) indicates the current use situation, where opposing uses literally adjoin each other, without any provision for co-existence, or even accommodation. Single storey sheds, used for warehouse functions, sit directly below balconies of new apartments, causing a spatial chaos which is extreme in nature. The lack of provision for public realm activity causes conflicting uses to contrast even more in nature.

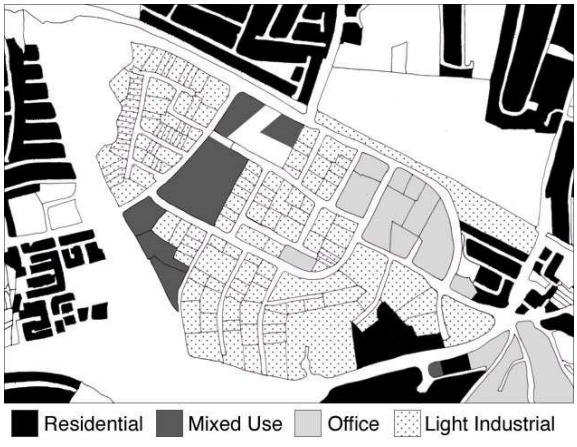

Figure 7 Use Analysis

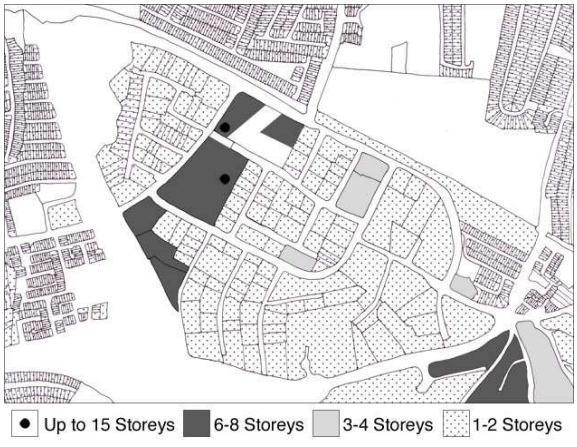

Figure 8 Density Analysis

Density

This is an assessment of current constructed densities, of land and/or buildings in the area, and

whether these correspond with accepted best practice. The sites (Fig. 8) indicated as 6-8 storeys, have a density in the order of 200 persons per acre, in stark contrast to the immediately adjacent sites (mainly 1 or 2 storey light industrial or office, no residents) and the surrounding low density semi-detached housing (18 persons/acre average). In the case of Sandyford, extreme contrasts in density provision cause shocking juxtapositions, without any overall three dimensional context for the future, in density terms. As there has been no overall plan, individual site owners have been permitted to build up to 16 storeys of development in isolated locations (Fig. 9), and there have been suggestions for buildings up to 32 storeys. The tallest building constructed in Ireland to date stands at 17 storeys, 71m high, and is located in Cork City.

Figure 9 Sandyford

Performance

For assessment of performance of an area, a simple character visual assessment could be carried out. For assessment of performance of a plot, two particular aspects are suggested. The first is the Building Energy Rating (BER) of the structure on the plot, the recently introduced statutory requirement for all new Irish development. The BER includes many detail aspects, such as building specification, construction details, etc which are all taken into consideration. The second aspect is a simple review of the ease of adaptability of the structure considered. In this case, assessment is on a plot by plot basis, in order to consider an overview for the local area of Sandyford. As is indicated in the diagram (Fig. 10), much of the building stock in the area is below an acceptable standard in performance terms, leading to the conclusion that much of the area will suffer in the medium term to fulfil environmental performance requirements for built form.

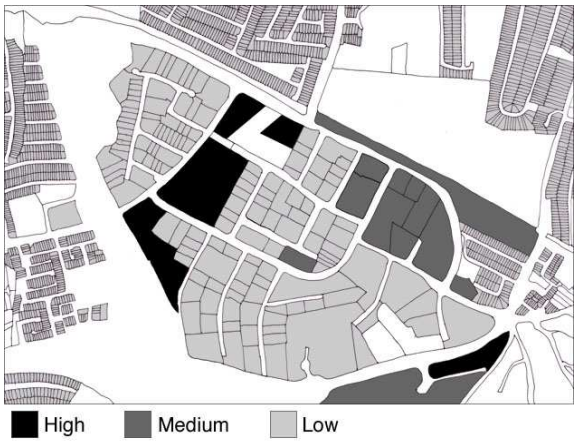

Figure 10 Performance Analysis

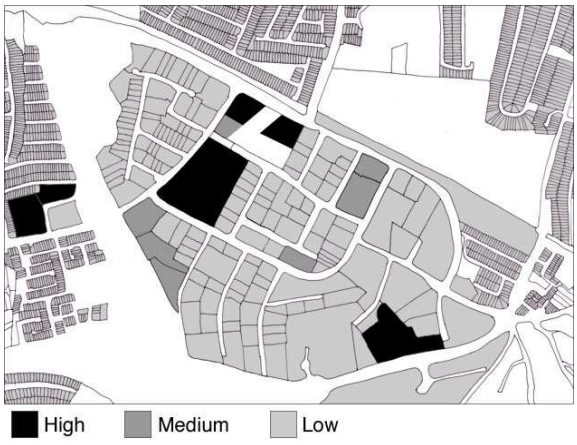

Figure 11 Quality Analysis

Quality

For an area, quality is closely associated with a character visual assessment. For a plot, as in this case, the judgement is based on the quality of the individual buildings, but also how the collection of buildings on the plot inter-relate, or cohere into an assembly. For a block, architectural quality is assessed here as low, medium or high. Two particular aspects, specificity and character, are considered, as well as the more conventional criteria for architectural quality assessment. In a developing or evolving area, it is argued that

specificity and character in buildings are even more important than usual, in order to establish a distinct and legible sense of place. In Sandyford (Fig. 11), little of quality is evident; though some recent development on individual sites has been of above average quality, the general impression is of low quality light industrial or office park characteristics, with no lasting impression of a public realm.

From an assessment of the location, use, density, performance and quality aspects of blocks in the Sandyford area, it can be concluded that the area is a 'produced' environment, rather than a created or designed one. In the more particular examination of the street level of the area, this type of space has particular manifestations; often dislocated (inaccessible), inefficiently used, in non-adaptable development, with inappropriate density, poor performance, low architectural quality, and a lack of specificity and character. The visual impression of a visit to this type of area is a form of spatial chaos, whereby the overall development lacks coherence, unity, and a legible centre, has unclear edges, and displays overall identity dysfunction. Sandyford, like many parts of Dublin containing recently developed new areas and buildings, has an over-supply of produced space.

The question arises as to whether the over-production of space in Dublin is purely to do with development density, an aspect of development, like height of buildings, which can dominate debate. It is argued that other issues, including location, use, performance and quality should also be discussed, although obviously, the issue of over-production of space is closely connected with allowable densities. For example, it is arguable that if development is of a high quality, the density may be less inappropriate, or easier to withstand. Similarly, density in the correct location could be argued to be more sustainable than not, and an appropriate use in development relevant to location could be argued to be a positive density. Finally, if the development envelope performs appropriately, whether in energy use, adaptability, etc, then it could possibly be considered less inappropriate in density terms.

It is worth noting at this point that the predominant method of development control in the UK and Ireland includes performing planning systems (in which development rights are conferred after evaluation of individual projects) as opposed to the more widespread and traditional conforming planning systems of Europe, in which development rights are assigned in advance, and generally in conformity with a collective strategy[xix]. In this Irish situation, owners of sites can be granted permissions for development in the absence of an overall plan for an area, leading to much incoherent development of new areas.

It is also useful to remember that in the Dublin context, spatial over-production could be theoretical as well as physical. Many planning permissions (or permits to build) have been granted for development which may not be completed or even started immediately, due to phasing or economic conditions, which have changed radically in the last 12 months. So these proposals are part of an area, because they have been granted permission, but are not contributing to an area at present.

This method of assessment would ideally deal simultaneously with substantially different scales of operation. It is arguable that each scale of representation from a room to a city is relevant to the assessment of the built environment, but certain scales are particularly important for urban and architectural matters. These include the scale of the city and the scale of the area.

RECOMMENDATIONS

New definitions have been proposed here, as well as new methods of analysis, and appropriate scales for incisive simultaneous examination of defined areas. Subsequent proposals could involve re-design, altering, infilling, rebuilding, adapting, removing, taking away or "unbuilding" of some recent development, as well as evolving more predictive spatial design methods related to the location, use, density, performance, and quality of the new urban form.

Other recommendations include;

- Legible centres, with appropriate facilities for now as well as the future, should be the immediate priorities for these emerging outlying density areas.

- The Dublin Regional Authority should be actively researching the impacts of recent development decisions by the four separate local authorities, to coordinate the future patterns of existing and new towns in the Region.

- Individual design proposals for emerging outlying density areas should be subject to a moratorium in the absence of a consensually agreed, costed, phased and binding three dimensional framework plan, with a centre as its first objective for any emerging outlying density area.

- The current revision of the controlling development plan for any emerging outlying density area should coincide with a spatial audit, or spatial over-production assessment for an area.

CONCLUSIONS

It is possible that an argument could be made that the physical environment created in Sandyford in the last 40 years should never have happened, and that, but for a series of 'developmental accidents' it would have remained a low density light industrial suburb of the city, rather than an inadvertent 'new town'.

The authors of spatial over-production are often anonymous, or mundane in their identities; international capital, globalised brands, representing the fluid economic power of banking, international services, and easy credit. The perceived market needs are in the abstract, and unconnected to a local or wider context; headquarters buildings, private hospitals and corporate accommodation with little connection to place.

Following a Spatial Audit, a clearer connection between individual design intentions, integrated form, use and fabric, can be proposed including the planned or designed contraction of the physical "shell" of some produced space. In the case of Sandyford, there are clearly absences of public provision, whether in infrastructure, including public space, utilities, or in forward planning. The logical next step is to redress the imbalances of over-production of space by public provision of an appropriate environment, and this could lead to compulsory acquisition of sites for public space for example, or the part demolition of over-dense buildings, in order to provide an appropriate balance overall.

In reviewing the analysis of these new and fast changing spatial conditions at various scales, it is possible to move to considering proposals for a more consolidated approach to jurisdictions, their places, and their urban form. Using results of this type of analysis, predictive spatial design could be directed and focused across many scales. In this respect, the assessment criteria outlined above, moving across design scales, can offer a useful and practical tool for authoritative conclusions.

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