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## PAPERS FROM PRACTICE

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### **The High Rise Dilemma: Facing the Paradox of Diversification and Intensification**

**John Worthington**

Founder DEGW plc

Visiting Professor, School of Architecture, University of Sheffield  
and Chalmers University of Technology, Gothenburg

#### **Preamble**

Post modern cities are faced with the paradox that whilst development in information and communications technology allows us to work anywhere, anytime, there are in parallel increasing demands for business meetings face to face in easily accessible and stimulating environments. The demand for concentration at multi-modal transportation nodes has created high intensity points of development, often finding their iconography through building height. Drawing on North American imagery, cities around the world have aimed to reflect importance through height.<sup>1</sup>

High rise and tall buildings are a relative term. In Dublin, a city predominantly two-storied at its fringes; a three-storied neighbour could be regarded as of significant height. From the perspective of construction and urban impact, DEGW<sup>2</sup> has identified four key height limits.

High rise and super high rise have a role in intensifying and signposting the city. They can be effectively used in clusters to increase density dramatically and intensify the sense of place. Used sparingly, they can become landmarks to navigate an increasingly complex urban landscape and provide spectacular views both for those who live in and visit the city, and those who actually inhabit them. However, high buildings can equally be disruptive to build, inflexible to adapt, impossible to phase, inefficient in space utilisation, and costly to construct; a closed system that separates inhabitants from the city below, and a source of congestion. The challenge is to find design solutions that reflect the opportunities and respond to the shortcomings.

**Table 1. Key Height Limits**

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Low rise	-	up to five floors (15m)
Mid rise	-	"ground-scrapers" up to 15 floors (50m), a height which can achieve plot ratios of over 5:1 (Broadgate, City of London, and the centres of cities such as Paris and Milan)
High rise	-	tower or slab blocks of up to 40 floors (150m)
Super high rise	-	above 150m and only relevant where a number of factors of accessibility, land ownership, market demand and the need for identity coincide.

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Source: DEGW

This paper aims to place the need for urban intensification in the context of a changing social, economic and urban landscape. It draws on DEGW's work for major corporates globally and SANE (Sustainable Accommodation for the New Economy) a current multi-partner research network established with European Community funding.<sup>3</sup>

DEGW's understanding of the impact of high buildings on urban intensification and change are drawn from high-rise studies for the cities of Rotterdam and Dublin<sup>4</sup>, and currently in our role as advisers to the Greater London Authority. Reflecting on our experience as international consultants in city and workplace design, this paper proposes an approach to planning that combines a long-term comprehensive vision, with a programme for the appropriate incremental implementation.

### **Expectations are changing**

The world of work, with the impact of information and communications technology, and greater democratisation, is changing in its organisational structure and demand on property. The last thirty years have seen a shift from paper processing to knowledge brokering; Organisations have become open and non-hierarchical. Value has shifted from the manufactured product to design, innovation and customer service. To achieve flexibility of response, companies are outsourcing non-core support activities and relying on a mixture of 'core staff', 'freelance staff' and 'partnering suppliers'.

The miniaturisation and mobility of technology have provided the opportunity for some to work 'when we like, where we like, and how we like'. The impact of this flexible, project-focussed, approach to work is changing our perceptions of property. Gone are the days when real estate was perceived as a core asset. In the recession of 1989, many companies were nearly bankrupted by the burden of excess property they were unable to dispose of. Take the comparison of two computer industry giants, IBM and Microsoft. In 1999, Microsoft was capitalised on the stock exchange at nearly double the value of IBM, yet in comparison had a fraction of its value in fixed assets (buildings), a lower turnover, and a slightly higher net income.

Today, successful businesses are looking to divest themselves of buildings or long-term leases. A new model of property ownership is emerging, where perhaps as little as 30 per cent of a firm's property portfolio may be in 'core space', owned or on long leases, which represents the corporate value, and the heart of the organisation. Another 40 per cent of the space may be on short leases, providing flexible, adaptable space, within which projects can form, grow, reform or disband. Finally, much of the previously high-cost, support space (e.g. libraries, computing, training, and 'touch down' space) could be provided 'on demand' by a service company. The value of effective business buildings is now as much in their ability to change as in their iconoclastic value. The office building shell of the twenty-first Century will increasingly be required to absorb a wide range of individual and group settings. It must adapt to changing functions and technologies, accommodate a variety of layouts, support interaction and communications, be secure and sub-divisible, and, above all, have character and achieve a strong sense of place.

### **Locations are Taking on a New Significance**

In a knowledge economy, with a shift from the primary resource being 'brawn', to an economy where value is added through 'brains', attracting and retaining bright, independent, and

innovative staff is high on most companies' agendas. Locations are increasingly chosen for their 'quality of place', combined with ease of accessibility and access to amenities. However, with ever larger and more complex, comprehensive, developments, be they high-rise tower complexes such as Canary Wharf, or retail malls, the traditional sense of place is potentially being eroded through the privatisation of the public realm.

Traditional, successful, urban places have grown organically. They overlap functions, are diverse, ambiguous, and heterogeneous, and reflect a dominant culture within which other cultures can be recognised and thrive. They are owned, controlled and moulded by the citizenry. Increasingly, so-called public spaces are 'semi public', privately owned and controlled, precisely designed and 'functionalised', with little opportunity for the unplanned. It is a manufactured, branded, themed and homogenous environment, 'fit for purpose', but lacking in spontaneity and soul.<sup>5</sup> Outstanding exceptions, and well-loved places, are the arena at Broadgate, and the Rockefeller Centre Plaza.

The advantages of agglomeration have been at the core of city success. In the emerging networked city<sup>6</sup>, intense points of development, related to multi-modal transport systems, are emerging. These new city places, focussed on rail or air termini, are truly successful when they have the attributes of hubs, node and place, integrated within the wider city fabric.

Successful **hubs** provide convenient and comfortable interchanges between different modes (rail, bus, train) and levels (high speed, regional and local) of transport. **Nodes**, which accommodate a mix of functions, overlapping over a 24-hour period, which combine to form memorable **places** accommodating a diverse and distinctive range of symbiotic functions.

### **Designing for a World of Paradox**

To manage an ever more complex world, we have increasingly formed rules of what is right and what is wrong, which in turn establish clear positions of polarity. The reality, as Charles Handy so perceptively points out, is not a world of 'either - or', but rather of 'both - and'. We live and design for a world of paradox, where differences, diversity, and conflict are to be celebrated, not planned out. Our cities now are both centralised and dispersed.

The Randstad, Holland, a world-class city of 6.5 million population (the same as Paris or London), combines four major cities and an 'inner city' airport (Schiphol), everywhere being within 50 minutes from anywhere else.

The Randstad is perceived by the planners of the Delta Metropolis as 'not high-density land use but a low-density city'. Around its new transportation hubs, such as the Zuid As, Rotterdam Central, and South Amsterdam Arena, it is intensifying use and increasing height. Places are being designed with increased precision and 'functionality', whilst at the same time representing greater ambiguity to the user. Schiphol airport represents itself as Airport City, a destination in its own right and the 'newest city in the Netherlands', whilst simultaneously it is a 'city with no citizens which could never elect a mayor. Communities are simultaneously both local and global. My local neighbourhood is a small village, where I can build personal relationships and a family 'home', whilst at the same time my intellectual stimulation and professional relationships are afforded by a global community of interest-fuelled by the Internet.

The paradox of time is that with potentially 24-hour, 7-days a week, 364 days a year access, opportunities have been expanded, but never have time frames been so constrained and time so valued. At the workplace, high-value innovative work requires settings for both individual and collaborative work, which can be shared by staff over time. DEGW's own offices, in an old Guinness bottling plant overlooking the Grand Union Canal, provide a variety of settings for individual concentration, as well as collaborative group work.

Finally, the polarity of having the grand vision, which is delivered comprehensively, is being recognised as flawed in a world of continuous flux. Communities, developers, and urbanists are recognising an implementation process that can work to a comprehensive vision, but are delivered incrementally, through layered decisions and iterative design<sup>7</sup>.

### **The Triple Bottom Line of Sustainability**

To many in the world of building design and construction, sustainable environments are synonymous with green architecture'. Ken Yeang's thorough and searching analysis of the 'green skyscraper'<sup>8</sup> is just such an approach. Amory Lovens, the co-founder of the Rocky Mountain Institute in Colorado<sup>9</sup> provides a wider vision, more holistic for a sustainable future. Lovens sets out the triple bottom line of sustainable action that encompasses economic, community and environmental sustainability. Drawing on the work of Jones and Wormack<sup>10</sup>, the Rocky Mountain Institute propose good sustainable practice to be 'lean thinking', a way of acting that conserves resources by minimising waste and maximising usage in the most elegant manner. Several years ago I took a European group of corporate facility managers to visit the new headquarters of a well-regarded North German business. The company was justly proud of the building, developed to reflect the latest principles of office design and support the company's mission for:

*'A company for whom the avoidance of waste, a regard for the natural fundamental principles of life, and the considerate use of raw materials and reserves, form important cornerstones of our corporate culture.'*

Our host, as he explained their philosophy, pointed to the parkland site with the grazing sheep as evidence of the company's 'green' credentials. It took a pragmatic Dutchman to remind us that, whilst upholding the image of environmental correctness, the car park was overflowing and the office floors were half-empty.

The philosophy underpinning 'new ways of working'<sup>11</sup> is to overlap usage by managing both space and time, so reducing the amount of space required, increasing the diversity of work settings, and improving collaboration.

### **Implications for Cities**

The simple paradigm of the dense city surrounded by its green hinterland has been blurred by the impact of improved communications and greater social, cultural and economic diversity. Polarities, such as city centre retailing is good and that at the periphery is bad, are perhaps over simplified. Our world of paradox suggests that both city centres for specialist high-value retailing and the periphery for convenience may be a more realistic model.

In 1997, DEGW was appointed by the City of Utrecht to prepare the development brief for

Papendorp, a large green-field site on the periphery of the city, which was being planned to accommodate over 350,000m<sup>2</sup> of mixed-use development. In parallel, plans were in progress to redevelop the central station site for a similar amount of mixed-use development<sup>13</sup>. We showed, through research, that the two sites, which were seen to be competing, were complimentary. Each had the opportunity to provide distinctive character, with its own mix of functions and appropriate building types. The city-centre station site, with the proposed high-speed rail from Dusseldorf through Utrecht to Schiphol, would be within 25 minutes of the airport and have over 75 million passengers a year. It would become, within the Randstad, a unique location, linked to the historical core, with convenient international connections and a mixture of existing buildings and sites for redevelopment.

The site allowed for mixed use, organic growth, a range of rentals and a wide diversity of accommodation types. In contrast, the peripheral Papendorp site allowed for rapid development, convenient car access and phased growth. However, being a green-field site, with all new construction, there could be little latitude for a variation in rentals, quality and character. Experience of how business was changing suggested that large organisations such as financial services and professional firms might be attracted to locate their front office functions in the centre and their 'back office' processing functions at the perimeter.

In 1999, at local elections, the citizens of Utrecht voted against the high-density, commercial content of the city-centre station project by voting in a new part under the slogan 'liveable Utrecht'. With a new team, DEGW Twynstra was appointed to work with the central area project office to rethink the options for the station site with the final decision taken at a subsequent referendum. Working with the design consultancy Total Identity, with the use of focus groups and a web-based questionnaire, the team is establishing two distinctive development scenarios that reflect different aspirations and values, which are set within a context of requirements and ambitions that are fixed. Through a combination of events, the opportunity has arisen in Utrecht to rethink the paradigm for development. The modernist, North American, model of a comprehensively planned, big business, big building, market-driven Central Business District (CBD) is being questioned.

The urban environments we tend to admire are those that have accreted and grown organically. The modern movement at its harshest aimed to start with a 'clean sheet'. It separated movement patterns, zoned functions, and aimed to dumb down complexity within a comprehensively designed and implemented master plan. La Defense, Paris, or Canary Wharf, London, exemplifies such a model, with their segregated vehicle and pedestrian levels massive office blocks and predominantly commercial uses.

Are they appropriate development models for Europe, or merely a clone of North American development? Should Europe be searching for alternative solutions? High density, ground-scraper solutions, such as Ake Brugge in Oslo or Broadgate, London, provide diversity of use, good public spaces, and integrate with the surrounding urban fabric. Rotterdam city centre was flattened by bombing over 50 years ago. With a blank canvas to work from, the city has energetically set about comprehensive renewal and embraced a vision of high-rise living, reflecting a European culture. What in Rotterdam is high rise, by world standards is Lilliputian. The small floor plates (to maximise natural light) and elegant profiles have kept a human scale, whilst providing for some spectacular views.

In 1999, DEGW undertook a review of high-rise policy for Rotterdam where we argued that high buildings should reflect market demand and size and height should be tested against their impact on sucking vitality from the street. Impact could be gained through quality, not only height, and image through innovation. As an outcome of the study, the city has established an innovation and aesthetics panel for the high rise central city area. The panel reviews proposals, initiates research on past solutions and aims to establish Rotterdam as a learning city, building on its reputation for architectural innovation.

Following our study for Rotterdam, DEGW was appointed by Dublin City Council to advise on a policy for buildings in Dublin that might be significantly higher than their surroundings<sup>13</sup>. The outcome recognised that in Dublin much of the debate concerning 'high buildings' was less about tall buildings but more about change and context. DEGW's conclusions set a framework for managing city-wide intensification and change by defining character areas, potential for change and policy responses for different conditions.

Ireland's economic success has placed the Greater Dublin under extreme pressure to grow and change. This rapid growth is within a context of under-developed transportation systems and a low density of land use compared with many other European cities. To meet this growth, Dublin City Council is under pressure to review proposals for sites with increased densities and higher buildings and to expedite the planning process to ensure the availability of sites.

In anticipation of further pressure to increase densities by building higher, the City Council Planning Department are committed to the formulation of a strategic framework policy document which would anticipate such applications and proactively direct such projects to particular sites or locations within the city.

In December 1999 DEGW was appointed to undertake a study to complement the existing Development Plan Policies and evolve a comprehensive, dynamic policy to capitalise on the potential benefits and effects of high buildings.

The study aimed to address the following questions:

- What is the intrinsic character of Dublin and what aspects of this character are valuable?
- What are the potential pressures for change, and how best these can be accommodated?
- With the inevitable pressure for growth, how can Dublin most effectively meet the need for intensification?
- What role might high buildings play in increasing density and enhancing Dublin's competitiveness?
- How should building heights be defined in the context of Dublin?
- What are the appropriate criteria for the location and design of buildings higher than their immediate context?
- Where will pressure for intensification occur?
- Learning from European experience, what are the lessons for the Dublin City Council?

The goal of the study has not simply been to define acceptable building heights but to:

- Identify development approaches to the growth and renewal of areas, where building heights are specified in the context of retaining area character, as well as meeting objectives for change;
- Recognise the success of Dublin in an international context and ensure that the city centre can grow, intensify and change to reflect the demands of being the focus of a major European city-region.

### **Choosing the Appropriate Development Model**

High-rise, merely as a symbol of power and technological dexterity, though globally all too often the *raison d'être* of high rise development, has limited appeal in the European context. In the majority of conditions, high densities can be achieved within mid-rise up to 50m and imagery by thoughtful and innovative design. However, in large conurbations (e.g. London, Tokyo, Manhattan), with a significant market catchment area and excellent transport networks, very high intensity nodes may occur with high-rise clusters. Also, at significant points in the city, a tall building can play a landmark role. Landmarks are, however, only landmarks if they stand out as unique (Centre Point or Euston Tower, London). Before the decision to build high, the test of whether the high-density mid-rise solution could meet the criteria should be applied. The choice to build high will finally reflect market demand, accessibility, site availability, and urban character.

### **Endnotes:**

1. This paper draws on a paper prepared for **Building for the 21<sup>st</sup> Century Conference** – jointly organised by The Council for Tall Buildings and Urban Habitat (Lehigh University) and Invensys plc.
2. These are described in **DEGW High Rise Rotterdam – A Strategy for Intensification and Innovation**. City of Rotterdam Planning Department, October 1998.
3. Harrison, A. (2001) **Accommodating the New Economy; The SANE Space Environment Model**, published in 'E-Work and E-Commerce; Novel Solutions and Practices for a Global Networked Economy', IOS Press.
4. **DEGW High Rise Rotterdam - A Strategy for Intensification and Innovation**. City of Rotterdam Planning Department, October 1998.
5. Hajer and Reijndorp, **In Search of New Public Domain**, Nai Publishers Rotterdam 2001.
6. John Worthington, **Urban Planning in a Networked Economy**. The fifth Van Esteren/Van Lohuizen lecture. Association of Dutch Urban Designers and Planners (BnSP) Colophon August 2000.
7. John Worthington, **Briefing for Development**, DEGW presentation. See also Blyth & Worthington, **Managing the Brief for Better Design**, Spon Press, London 2001.

8. Ken Yeang's lecture in the same session of the **Building for the 21<sup>st</sup> Century** Conference provided detailed case studies from Kuala Lumpur and London for an 'Eco-friendly' skyscraper.
9. Hawken, Lovins & Lovins, **Natural Capitalism: The Next Industrial Revolution**, Earthscan London, 2000.
10. Womack and Jones, **Lean Thinking: Banish Waste and Create Wealth in your Corporation**, Touchstone London 1997.
11. 'New Ways of Working' encompasses approaches such as 'hot-desking', shared space and multiple work settings. See Worthington **Reinventing the Workplace**, Butterworth Heinemann, Oxford, 1997.
12. The urban design master plan for the Utrecht Central Project (UCP) was co-ordinated by Reek Bakker with overall co-ordination of the development process by Twynstra. OMA were the urban designers for Papendorp, with co-ordination by the Leidsche Rijn area team. DEGW provided user research and development briefing for both projects. See DEGW **Utrecht One City: Two Sites** July 1997 London.
13. In 2000 DEGW carried out a study into the possibility of developing high-rise buildings in Dublin. This study was carried out for Dublin City Council and will inform planning policy in Dublin City. For further information, see the **Dublin City Council** website: [www.dublincity.ie](http://www.dublincity.ie).