

MEGAPROJECTS: INVESTMENT STRATEGIES
FOR CATALYTIC DEVELOPMENT

Harvard Journal of Real Estate

Harvard Journal of Real Estate

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Foreword

Following the success of its inaugural publication, the Harvard Journal of Real Estate is pleased to release its second annual issue: “Megaprojects: Investment Strategies for Catalytic Development.” This year, the editorial committee wanted to address a topic that has received significant press coverage of late and has had an impact on impacted nearly every corner of the globe. Megaprojects are architectural and engineering feats that also require extraordinary financial, and often political, commitments to complete. While often depicted in glossy images of finished projects, the editorial committee invited writers to delve deeper into this topic and examine the complexities and issues related to implementation and the impacts these major developments have on their environs.

The Harvard Journal of Real Estate was founded in 2012 to provide a forum for students of real estate from various disciplines to write about real estate topics that interest them and create an ongoing conversation with classmates and faculty from institutions across Harvard. By breaking down formal institutional boundaries, the Journal aims to eliminate misconceptions between the multifaceted web of professions and disciplines that contribute to our industry. To this end, student submissions were paired with commentary from faculty who held common interests but may have been perceived to bring an “opposing” perspective to the topic. The end goal was to promote enhanced interdisciplinary understanding and problem solving.

We found the results fascinating. While some disciplinary combinations found natural common ground, faculty commentary always offered recommendations for further exploration in ways likely not considered by the original author. This year, we decided to extend this formula to its logical next step and invited representatives of industry to participate in the dialogue and bring their professional expertise to the equation. We are very grateful to the Harvard University alumni network, particularly Frederick Cooper of Toll Brothers, Philip Wharton of Brookfield Office Properties, and James von Klemperer of Kohn Pedersen Fox Associates for taking time from their busy professional schedules to review and provide commentary for the featured articles. Additionally, we thank the faculty advisors who continue to support this publication and its mission. In particular, we would like to thank Richard Peiser, John Macomber, and Eric Belsky for their contributions to this year’s Journal.

As is tradition, the theme and very definition of a megaproject this year were kept purposefully undefined to allow for multiple interpretations and grant writers the freedom to select topics relevant to their interests and studies. Architect Jasper Campshure begins by analyzing the historic roots of megaprojects and traces their progression from architects' visions of ideal cities to a complex developer-driven project delivery method. Real estate student Brian Vargo discusses how design and macro market drivers will influence a massive urban expansion of the slow-growth Scandinavian city of Copenhagen. Loeb Fellow Arana Hankin recalls her experiences working for Empire State Development to assess current public policy and the shortcomings of the oft-utilized community benefit agreement. Real estate students Carly Jane Zapernick and Jason McAlees consider the concept of stadia-centric mixed-use development and the emerging trend of sports franchises acting as large-scale developers. Finally, business student Sue Yang asks how developers can create value by better understanding the end user needs of their developments.

Still in a nascent state, The Harvard Journal of Real Estate continues to evolve as it strives to be a fruitful forum for provocative discussion on contemporary issues in real estate. The writers should all be commended for the great deal of work put into their submissions and for their willingness to be part of such a public discourse about ideas they hold so passionately. The editorial committee also extends its sincere gratitude to the Harvard Real Estate Academic Initiative and its Alumni Advisory Board, whose encouragement and financial support have enabled this publication to exist at all. Finally, I would like to thank the Student Leadership Team and Executive Editor Emeritus, Cristina Garmendia, for their constant insight and tireless dedication.

We hope you enjoy the articles and commentary that follow. More importantly, we hope that you continue these discussions with your colleagues at school and associates in the industry, and feel inspired to engage in further interdisciplinary dialogue.

Sincerely,

Dylan Saul Lazovik
Executive Editor | Harvard Journal of Real Estate
Master in Design Studies '14 | Harvard Graduate School of Design

Toward a Historical Framework of the Contemporary Megaproject



Jasper Campshure

Biography

Jasper Campshure is a Master in Architecture candidate at the Harvard University Graduate School of Design. Prior to his studies at Harvard, he developed a real estate development and zoning analysis software application at SHoP Architects in New York. Prior to that he worked as a financial analyst and later as a development manager for Cayuga Capital Management, a New York-based private equity real estate investment firm focused on urban infill and adaptive reuse projects. He holds a BA from the University of Wisconsin-Madison, where he studied Spanish and business.

Origins of the Urban Megaproject

As the megaproject increasingly becomes a preferred mode of delivering new building because of its efficiency as an investment (allocating the quantity of capital required by large real estate investors), it is important to understand the transition of its origins, namely architectural, to its contemporary function. In order to establish a historical context within which to sit the contemporary megaproject, this paper will look at those origins, which came in the form of speculative projects for cities by the architects Le Corbusier and Ludwig Hilberseimer in the early 1920s. Subsequently, through retrospective analysis of typical projects that they have influenced, the paper will attempt to extract lessons to be learned, particularly with respect to new projects undertaken at the scale of the city.

Le Corbusier: Scale and Efficiency

With his exhibition of the Ville Contemporaine (Exhibit 1) in 1922, the Swiss-French architect Charles-Édouard Jeanneret, better known by the pseudonym Le Corbusier, ushered in the era of the urban megaproject “UMP”, those large-scale built works requiring unprecedented financial and physical resources and a degree of planning and implementation heretofore unseen in the modern era. Le Corbusier’s speculative project, which was the vehicle for showcasing his theories of city planning later substantiated in *The City of To-*



Exhibit 1: Ville Contemporaine, Le Corbusier



Exhibit 2: Photograph of model of Plan Voisin, Le Corbusier

tomorrow and Its Planning (1924), called for a new city of three million inhabitants to be housed in 18 cruciform towers, each 60 stories in height spread over a vast landscape of green space and highways. His next such project, the Plan Voisin (1925), sponsored by the airplane and automobile manufacturer Gabriel Voisin, called for the demolition and redevelopment of the old center of Paris as a modern business district (Exhibit 2). The most prominent shared features of both projects are their overall densification of urban space through the tower, even as green space is greatly increased, along with the segmentation of residential, commercial, and industrial functions; in many respects, the Plan Voisin can be seen as the Ville Contemporaine applied to a real geographic site. Le Corbusier, famous for projectively describing the modern house as a “machine for living in”, saw in the fabric of old European cities disease and economic and cultural backwardness, and envisioned a modern city that was clean, heterogeneous, automobile-ready, and mechanical in its operations.

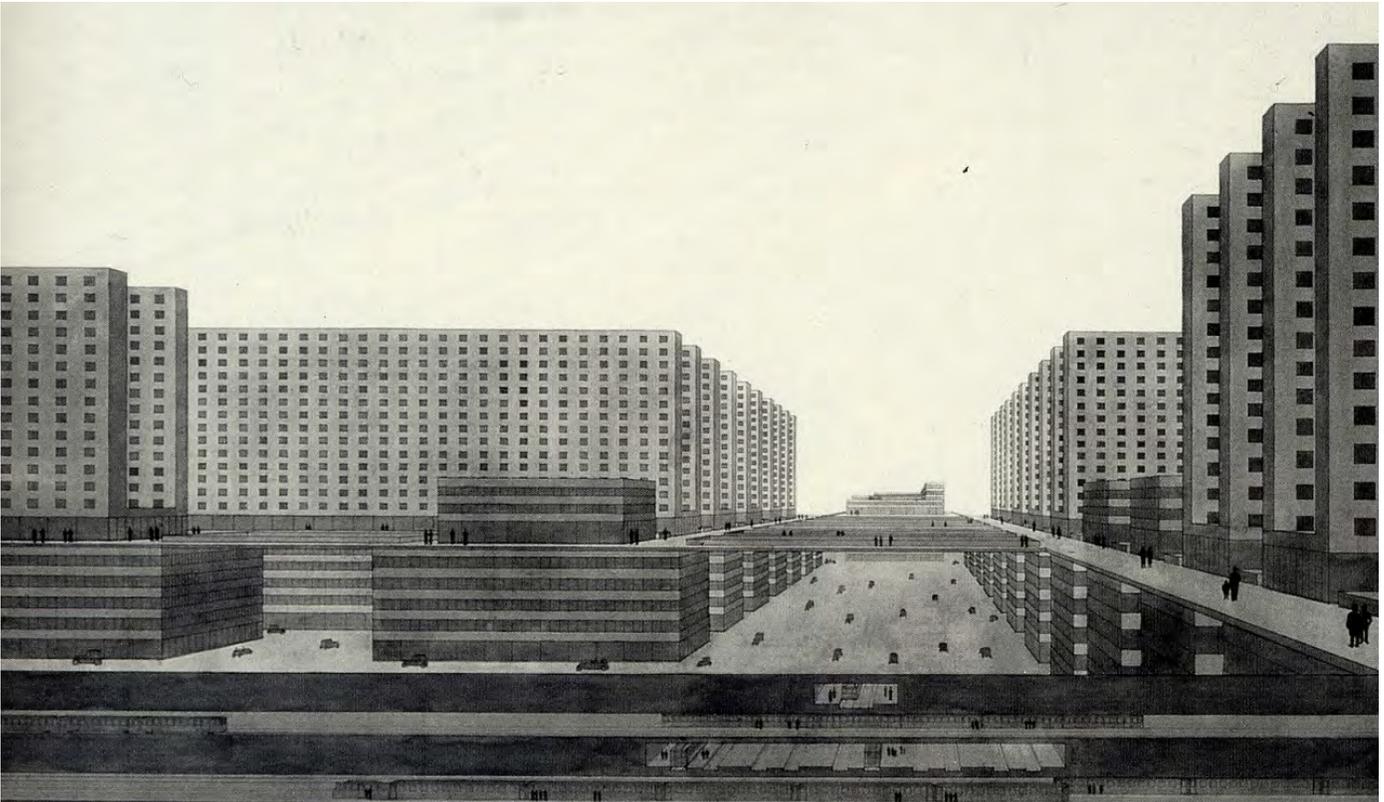


Exhibit 3: Proposal for High Rise City, Ludwig Hilberseimer

Ludwig Hilberseimer: Systemic Change in the City

Just a few years after the *Ville Contemporaine*, the German architect and urban planner, Ludwig Hilberseimer, who was associated with the Bauhaus movement before coming to America and heading the planning departments of Illinois Institute of Technology and the city of Chicago, published his proposal for a High Rise City in the form of several architectural renderings and drawings (Exhibit 3), later theorized in his 1924 treatise *Metropolisarchitektur*. Whereas the more well-known proposals of Le Corbusier offered architectural solutions to social and economic issues largely within the framework of his contemporary political state and financial systems, Hilberseimer's project was an overt critique of the social, economic, and technological factors that produced the capitalist city. Calling for an end to the speculation that the modern city is built upon, Hilberseimer proposed a city developed by the participation of its citizens. In addition to differing in framework, Hilberseimer's project called for a city

of much greater density than either of Le Corbusier's projects, and despite the ominous images rendered by the architect nearly void of human activity, he envisioned a city where living and work occurred in close proximity, with housing above workshops, stores, and offices.

Architect as Developer of the Urban Megaproject

None of these three projects were ever built. However, beyond the undisputed fact of their influence on the urban built form (at both the scale of the building and of the city) for which they are most often discussed, it is important to note their significance in the real estate profession. Conceived at a time that had not yet seen the rise of extremely large private real estate developers such as Trammell Crow or William Zeckendorf, or even a singularly influential actor in the public sector such as Robert Moses, the early projects and theoretical treatises of both Le Corbusier and Hilberseimer covered a breadth of subjects that today are represented by

the disciplines of architecture, sociology, real estate, and urban planning. These days, it is most often the developer or enterprising public agency that initiates UMPs, but this was not always the case. At a time when who exactly would become the principal generator of the built environment was still up for grabs, the technocratic blend of empirical statistical data presented in graphs and dense numerical descriptions of the city resembling contemporary zoning law mixed in with the sure language of manifesto provided not only a blueprint for the conceptualization, analysis, and marketing of the urban megaproject, but also for a professional that today much more closely resembles the developer than it does the architect.

It remains an open question as to why the architect did not in time become the usual developer of UMPs, but we might say that Le Corbusier offered the discipline its best bet, and the chapter “Finance and Realization” from *The City of To-morrow and Its Planning* leaves us with a few clues as to why this did not materialize. “Finance and Realization” was left as the book’s final chapter as if to indicate the importance of the financial economic aspects of building, as well as the seriousness which Le Corbusier had for bringing the project into the world. Despite beginning the chapter by admitting that “I thought I would entrust some well-known economist with this chapter on the financial aspect, so that my architectural conclusions might be ratified indisputably by figures”, before running out of time ahead of publishing, his command of the fundamental economics of real estate is evident. At

the same time, Le Corbusier, one of the more prolific and ambitious architects that the discipline has seen, was also a capable builder, having started his career working in the office of Auguste Perret, the early innovator of steel reinforced concrete construction. And yet, despite having the skills that would be the envy of most contemporary architectural practitioners, Le Corbusier, who rewrote the rules of architecture with his theoretical output, seems to have never quite considered bringing his project into the world himself, ending the chapter by warning that “I have been careful not to depart from the technical side of [the] problem. I am an architect; no one is going to make a politician of me”. The developer is, if nothing else, an able politician. It is also fair to consider that the complex financial structures that allow for today’s UMPs, especially in the private market, did not yet exist in 1924.

Taking Stock

When we fast forward 90 years from the publishing of each treatise to 2014, we encounter an urban world radically transformed in many ways through the ideas initially brought forth by the projects of Le Corbusier and Hilberseimer. Given that the scale and speed of the production of the contemporary built environment has finally caught up with those imagined by these two architects, it is prudent to take stock of their legacy, learning what went wrong, requires updating, or simply what was never employed in built projects.



Exhibit 4: Co-op City, New York (Photo: David Roush)



Exhibit 5: Cabrini-Green, Chicago (demolished 1995-2011)



Exhibit 6: Nearly empty city of Kangbashi, China (Photo: Tim Franco)

Same Old Form

If the theoretical projects of Le Corbusier presented here look familiar, it is because we have seen them built before. These were the projects that acted as a model for much of the public housing made in the United States during the middle of the twentieth century, from Co-op City in New York City (Exhibit 4) to the now demolished Cabrini-Green projects in Chicago (Exhibit 5), and continue to be built elsewhere in the world, including China's so-called ghost cities (Exhibit 6), each of them failures to some greater or lesser degree. But it would be remiss to only show failures of state-planned social housing projects; we also find essentially the same formal and circulatory organization in high profile for-profit UMPs such as the Palm Jumeirah in Dubai (Exhibit 7)

and the planned Khazar Islands in Azerbaijan (Exhibit 8), both produced by a monolithic application of heterogeneous 'towers in the park'. Whatever the eventual financial outcome of these projects, as producers of the built environment we can already anticipate the types of unlivable urban environments that they will create, a failure perhaps of the use of architecture and planning over anything else, financial, quality, or otherwise. These projects, along with countless others, are cautionary tales of the deployment of Modernist architectural form without updating ideas that either never worked, or no longer work in the way required today; that is, they are not urban forms that encourage economic and cultural development.



Exhibit 7: Construction of Palm Jumeirah, Dubai

Designing the Social

Perhaps the continued proliferation of UMPs that display a high degree of formal and architectural similarity to the early projects of Le Corbusier and Hilberseimer prevents investigation of the less visual ideas initiated in the same projects. Despite having very different approaches (one might broadly say that while Le Corbusier was attempting to work within existing political and economic frameworks, Hilberseimer was looking to use the city to reorganize the social, political, and economic functions of the modern metropolis), social benefit was at the very core of the first modern urban megaprojects - each, despite some of the failures highlighted in this essay, was attempting to at the most fundamental level produce a better society. A great advantage of the UMP

as a vehicle for both investment in and delivery of new building product is that its scale lends it the potential to produce impactful cultural change. Today, a principal rationale still given for most UMPs is the benefit that their development will bring to local, regional, and/or national levels of society. Depending on the project these promoted benefits may include greater consumer choice, the addition of cultural activities, job creation, and cheaper or better building stock, each of which can certainly turn out to be true, but in any case almost always need to be advertised in order for the project to materialize from the political and permitting processes. However, it has been argued that often the lion's share of experienced benefit, primarily vis-à-vis economic



Exhibit 8: Khazjar Islands, Baku (Rendering: Avesta Concern)

terms, is seen by what globalization theorist Leslie Sklair calls the transnational capitalist class. Using this rubric, because their development often requires human, environmental, and spatial displacement along with accompanying noise, traffic, and pollution, UMPs only succeed where the benefit to society overcomes what to the project are often externalities. UMPs looking to stimulate further economic and cultural development, as they nearly always do, need to therefore as an existential requirement consider, design, and invest in producing social benefit at the generative stages of development. This investment in social infrastructure needs to move beyond providing green space and public space. In public,

private, and hybrid investment vehicles development teams should be open to and investigate new ways of engaging the social component of their projects, and hence the city. The economics of any project need to be such that it is an attractive investment, but projects that benefit the greatest number of stakeholders tend to also be the most successful.

It was their commitment to the social systems of the city that was the greatest - largely unmet - ambition of the early projects of Le Corbusier and Hilberseimer. They boldly offered their ideas nearly a century ago - it is time now to develop new ones.

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Board Review

Richard B. Peiser

Biography

Richard B. Peiser, Ph.D. was appointed the first Michael D. Spear Professor of Real Estate Development in the Department of Urban Planning and Design at the Harvard University Graduate School of Design. He joined Harvard in 1998 after being on the faculty at the University of Southern California since 1986, where he served as director of the Lusk Center for Real Estate Development and Academic Director of the Master of Real Estate Development Program, a program he founded in 1986. At Harvard, he is coordinating the university wide Real Estate Academic Initiative.

Jasper Campshure's provocative article on the historical framework of the urban megaproject "UMP" extracts lessons from classic works by Le Corbusier and Hilberseimer as well as from newer projects such as Palm Jumeirah in Dubai and the nearly empty city of Kangbashi, China. He does not explicitly define megaproject, but he focuses on Le Corbusier's speculative projects to accommodate three million people and Hilberseimer's much denser High Rise City.

Jasper laments the fact that none of the projects were ever built and raises the question of why the architects did not in time become the developer of the cities they envisioned. Implementation of even small scale development projects involves many skills in addition to design. While he notes that Le Corbusier wrote a chapter on "finance and realization", writing about it is a far cry from actually having the political, financial, organizational, and technical capabilities to implement a project. The skills of a developer are very different from the skills of a designer, although, in earlier times, many architects such as John Wood in Bath's Royal Crescent were also the builder/developer of their projects. However, over time, the functions of a developer have diverged from those of a designer as the field became more sophisticated and segmented. Interestingly, in many emerging markets, construction companies function as developers, but over time, developers are becoming a distinct specialization. As Jasper correctly notes, today it is the developer or enterprising public agency that initiates UMPs, because such projects usually begin either with control of the land or as public endeavors to redevelop major urban centers or new towns.

Jasper correctly points out that Le Corbusier's and Hilberseimer's visions were implemented primarily in public and middle-income housing projects such as Co-op City and Cabrini-Green. While both housing projects have been vilified in the press and by social housing advocates, Co-op City today thrives with a largely satisfied middle-class clientele. Cabrini-Green, like Pruitt-Igoe in St. Louis, were demolished as they became icons of urban renewal and public housing policy failure. Nevertheless, one finds many examples of high-rise towers in a park-like setting both in social housing in Europe and in new housing developments

in China and elsewhere. Jasper concludes that whatever their eventual financial outcomes, the “monolithic application of ‘towers in the park’ ” are “cautionary tales of the deployment of Modernist architectural form without updating ideas... they are not urban forms that encourage economic and cultural development.” While I agree with his general assessment, the Palm Jumeirah project is successful both financially and I believe socially because it offers terrific ocean views and direct access to the sea.

Jasper focuses on the repetitive urban forms found in many UMPs. He points out that the principal rationale for most UMPs is the benefit such projects bring to society by offering housing choice, jobs, culture, and amenities. While I agree with his assessment as far as it goes, he barely scratches the surface about the major problems of UMPs – in particular, why they so often end in financial failure and bankruptcy. Indeed, there is a joke in real estate that in large-scale development projects, it is the **third owner** who makes money. Reasons for the financial problems of UMPs are too lengthy to present here, but, in a nutshell, they arise from the fact that UMPs usually take 10-30 years to complete, involve very high front-end investment in land and infrastructure, and must survive through multiple economic cycles before they become permanently cash flow positive.⁽¹⁾

A more thorough history of UMPs should at least mention Ebenezer Howard’s Garden Cities of To-morrow – the progenitor of the modern new towns movement. Howard in fact was the developer of two of the early British new towns of Letchworth and Welwyn Garden City. There are also many important examples of modern megaprojects including Rockefeller Center in New York City, Canary Wharf in London, and Xin Tian Di in Shanghai, none of which were originated by architects, although the quality of design is critical to their success or failure.⁽²⁾

Jasper concludes that it was the architects’ “commitment to the social systems of the city that was the greatest – largely unmet – ambition” of the architects’ early projects. He praises their bold ideas nearly a century ago and says it is time to invent new ones. This really misses a very long history of planning and social engineering in large scale projects, best represented by new towns and large scale planned communities. Indeed, the new towns movement has long struggled not only with delivering quality housing, but also providing schools, transportation, health, safety and security, recreation, employment, and all the other core functions of urban life.⁽³⁾ How to deliver these services more effectively within the context of less repetitious and monotonous urban design is indeed a challenge where the next generation of developers in conjunction with their architects, planners, and consultants can and should do a better job.

(1) See Peiser Richard. “Is it possible to build financially successful new towns? The Milton Keynes Experience.” *Urban Studies* 36.10:1679-1705.

(2) Rockefeller Center and Xin Tian Di were financially successful. Canary Wharf went bankrupt but today is thriving.

(3) See Galatas, Roger with James Barlow. 2004. *The Woodlands: The Inside Story of Creating a Better Hometown*. Urban Land Institute.

Nordhavnen: Building Big in a Small City



Brian Vargo

Biography

Brian Vargo is a candidate in the Master in Design Studies program at the Harvard University Graduate School of Design with a concentration in Real Estate and the Built Environment. He focuses on the link between design and real estate, studying how the development process can inform innovative design strategies and how design-thinking can add value to real estate development. Prior to enrolling at Harvard, Brian worked for several years in Copenhagen as a design architect on a variety of international projects. He is originally from the San Francisco Bay Area and holds a Bachelor of Architecture degree from Cal Poly, San Luis Obispo.

Like many modern European cities, city-making in Scandinavia is slow and stable. Urban development in the Nordic countries has evolved organically for hundreds of years, prompting a design culture that is conservative in its scale and tactics.

A new megaproject, ‘Nordhavnen’ (translated to ‘The North Harbor’), challenges that culture of city-making. Set within Copenhagen, Denmark, the project is the largest ongoing urban development in Scandinavia. The redevelopment of Nordhavnen will add 900 acres of dense urban-scale buildings to the city, a dramatic scale considering the city center, situated only two miles away, consists of roughly 1,100 acres. This context provokes a unique question: how can design and strategic planning underpin the scale of a megaproject in an otherwise slow growing European city?

Key to Nordhavnen’s redevelopment is its history. Originally planned as an industrial shipyard, Nordhavnen was once a major component of Copenhagen’s economy and crucial to the city’s growth. The area’s adjacency to the city center and the importance of maritime commerce in the local economy made Nordhavnen the target of an expanding industry in the nineteenth and twentieth centuries. Nordhavnen’s docklands were created through a series of landfills from 1885 to 1931, ultimately forming a commercial port geared towards maintaining the city’s identity as a maritime powerhouse (Copenhagen translates from Danish to ‘Buying Harbor’). Now made obsolete by the city’s transition away from shipping, the sprawling shipyards have become almost entirely dormant – the ideal topography for development given its strategic location adjacent to the city and along the waterfront. Bordered on three sides by water and on its fourth by a major rail line, the area’s historic use has preserved a large, continuous swath of land separate from the incremental growth of the city’s other districts.



Exhibit 1: Existing Conditions of Nordhavnen (2009)



Exhibit 2: Future Build Out Vision of Nordhavnen (2050)

The redevelopment of Nordhavnen began in 2007 with the formation of a publicly owned development group entitled CPH City & Port Development. With 55 percent owned by the City of Copenhagen and 45 percent by the state of Denmark, the company governs the strategic development of Nordhavnen and ultimately sells developable tracts of land through competitive bidding. CPH City & Port Development provides the infrastructure and public amenities to attract development and ultimately increase the marketability of Nordhavnen as a whole.

What makes Nordhavnen’s redevelopment unique is its commitment to a long-term vision and the scale of its investment in comprehensive design strategies. In 2008, CPH City & Port Development announced an international design competition to plan the long-term vision of Nordhavnen. A jury comprised of the CPH City & Port Development and the City of Copenhagen assessed entries and announced the winning proposal in March 2009. Entitled “Nordholmene – Urban Delta”, the strategic plan sets an ambitious agenda to create a dense city district on par with its neighboring inner-city, filled with diverse functions, public spaces, and building types. The project is led by design firms COBE, Sleth Modernism, and Polyform Architects in partnership with civil engineering firm Rambøll. The strategic plan focuses on an overall vision guided by six principles:

1. An Existing Framework: The strategic plan will use the natural structure of Nordhavnen as the framework to create canals and islands. These not only provide a natural amenity without excessive change, but also define tracts of land to be developed separately, creating

the scale and character of an urban district on par with its neighbors.

2. Historic Buildings: Iconic structures will be preserved rather than starting from a blank slate, highlighting an aspiration to create a district that is uniquely Nordhavnen. These include the remnants of factories, warehouses, and loading bays.

3. Preserved Open Space: Nordhavnen’s 14 km of direct waterfront access and large swaths of unbuilt area offer the unique potential for a prominent natural landscape. Preserving some areas from development will ensure the district has unique value to residents and within the greater context of Copenhagen.

4. Five Minute City: The scale of public transit within the district is centered on pedestrian access. All areas are designed to be within 400 meters (1,300 feet) of the nearest metro station – approximately a five minute walk.

5. Commitment to Sustainability: Buildings in Nordhavnen will require high standards of sustainability and integrate with Copenhagen’s highly efficient central heating and cooling system. The opportunity to build an entire district while planning its infrastructure from the beginning will drastically increase its overall energy efficiency. For this holistic strategy, Nordhavnen has been awarded the DGNB gold certificate – an internationally acclaimed status for environmental efficiency.

6. An Intelligent Grid: The maximum building heights are staggered and the standard city grid is subdivided and shifted in an irregular rhythm. This ameliorates the

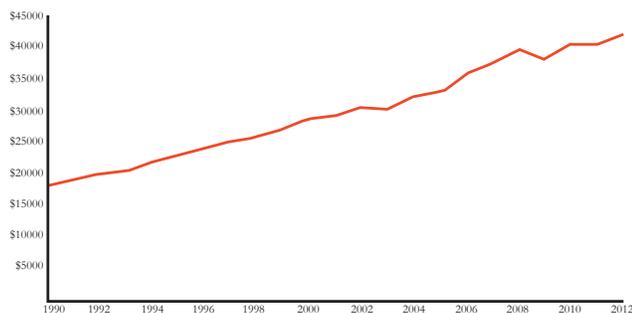


Exhibit 3: Danish GDP Per Capita, Real Terms

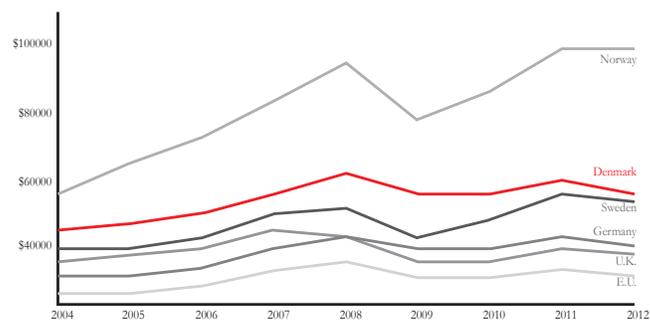


Exhibit 4: Danish GDP Per Capita vs. Region

prevalence of wind tunnels (to which the Nordic climate is particularly prone) and also allows physical flexibility in projected development in future phases.

These six principles outline a long term plan that will define up to four million square meters of floor area in dense, mixed-use neighborhood districts that match the scale and quality of historic Copenhagen. At maximum density, this provides approximately 40,000 residences and the space for 40,000 jobs. By comparison, the current population of the Copenhagen municipality is 560,000.

That scale of development assumes Copenhagen's sustained growth for the next 50 years. The area's success will require that the city absorbs a massive addition of floor space – a question that is particularly leading given the relatively slow pace of economic growth in European countries. All things considered, the scale and scope of adding a megaproject in this context is drastic when compared to the property market in Copenhagen.

However, the macroeconomic trends of the region are understated and encouraging. The financial stability of Denmark in recent history, particularly in the face of the 2008-09 recession, point to an economy that is structurally sound. In the span of 30 years, GDP per capita has doubled with a consistent rate of growth – even as Denmark's role in the global economy has shifted dramatically from the shipping/industrial sector to one that is heavily service-based. Moreover, Denmark has outperformed every comparable Northern European country except for Norway in the last decade by the same measure of GDP per capita. This structural economic stability feeds a steady population growth that will go hand in hand with the project's development.

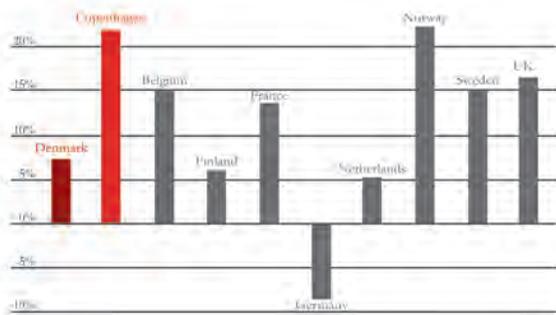


Exhibit 5: Population Growth, 2012-2040

While population growth by 2040 is projected to reach 7 percent for Denmark as a whole, the city of Copenhagen expects 22 percent in growth over that period. This exemplifies the general trend toward urbanization, and should underscore the importance of Nordhavnen's urban (rather than suburban) development. If Copenhagen adds 110,000 to its population within the next 25 years as projected, Nordhavnen's addition of 40,000 residences seems reasonable.

Nordhavnen is particularly well-poised to take advantage of these encouraging population trends given its design as an urban district. These macroeconomic trends highlight the importance of Nordhavnen's context – not within Scandinavia or Denmark, but as a project closely connected to the city of Copenhagen. Some skepticism for the ambitions of the plan are merited given its large scale and Denmark's relatively slow economic growth, but a closer look at the design principles outlined by the master plan reveals the unstated strategy of the megaproject's development.

Ultimately, I propose that Nordhavnen will succeed as an urban district on the basis of the strategic investment in urban spaces, public amenities, and open areas that define the area as an urban environment. Rather than create a readily defined 'megaproject', apart from its context, Nordhavnen is designed to integrate as seamlessly as possible into Copenhagen, ultimately dematerializing the 'megaproject' into an assembly of spaces, buildings, and neighborhoods akin to a normal urban district. The development process prioritizes the existing urban qualities that make Copenhagen one of the most livable cities in the world over the speed and efficiency of most development strategies. The six objectives outlined in the master plan are not revolutionary, but the commitment to anchoring the scale and breadth of a megaproject to design principles perfected by the city's natural evolution will to create a project that is truly part of Copenhagen.

Of equal importance is the time span of Nordhavnen's development. This massive addition to the city is carefully articulated into a series of very dense, self-sufficient steps. The phasing is designed in concentric rings, spanning outwards away from the city center and culminating at the northern (i.e. furthest) edge of the project. The construction of the first phase is currently underway and its later phases will span over the next 50 years.

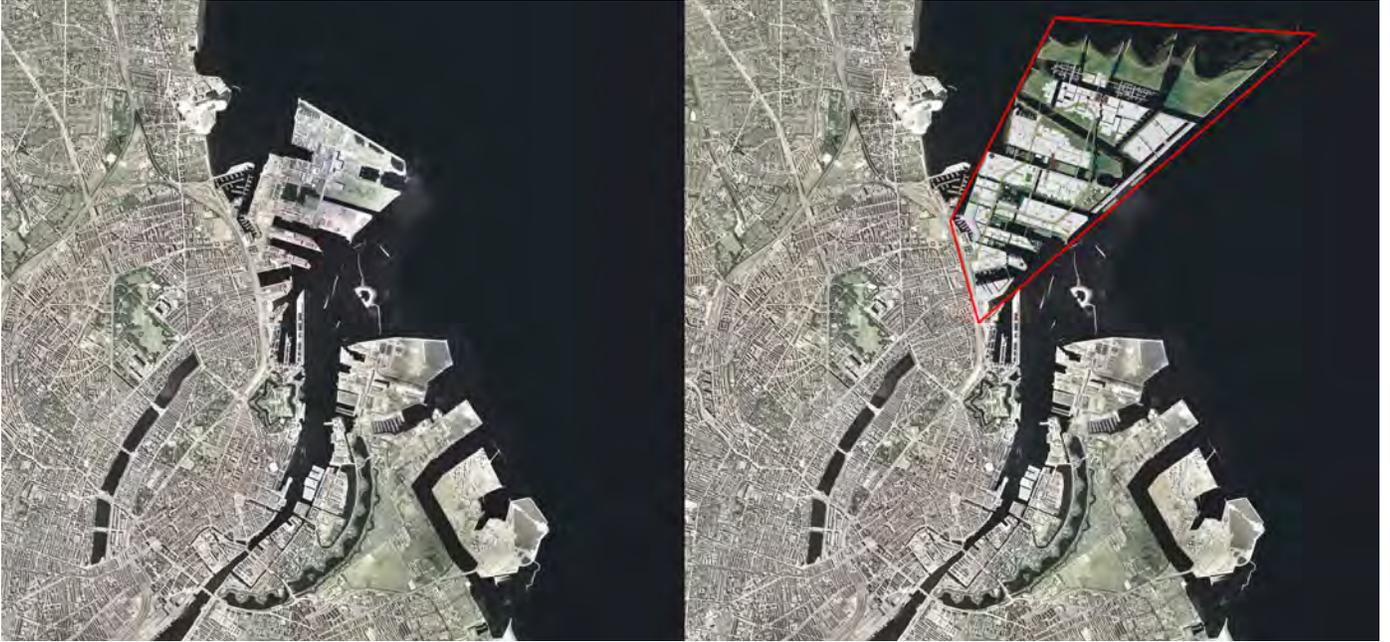


Exhibit 6: Satellite view of Nordhavn development, situated directly north of central Copenhagen. When completed, Nordhavnen will be a dramatic addition to the city of Copenhagen.



Exhibit 7: Nordhavnen's redevelopment sets forth an ambitious paradigm to create a mix of public spaces and open areas. CPH City & Port Development believes this strategy will ultimately create the maximum value to attract development. (Competition phase rendering, COBE)



Exhibit 8: Construction of the first phase is underway. One of Nordhavnen's iconic buildings wraps residences around the concrete structure of disused smokestacks.

While the initial phase constitutes approximately 700,000 square meters in buildings rights, successive phases will add approximately 400,000 square meters. Accounting for expected total absorption of 50,000 square meters per year for the city of Copenhagen (approximately 540,000 square feet), phases are projected in eight year increments. With each phase, CPH City & Port Development will govern a competition for the additional district's master plan, allowing further adaptation. Nordhavnen's long-term strategy coupled with its general adaptability in the scale, timing, and design of each phase underscore both a flexible outlook that responds to the changing market demands and a long-term commitment to Nordhavnen's full development. While Nordhavnen benefits from the efficient scale of planning a megaproject, this adaptable timeline mitigates the ongoing risk of over or under building.

In 2013, the plans for three residential quarters – Århusgadekvarteret Vest, Trælastholmen, and Levantkag Vest – have been developed and approved by the city of Copenhagen. They comprise a total of 250,000 square meters of housing, office, retail, and educational program. The first residences will be ready in summer 2014, and preliminary work on the next phase has already begun.

While it is far too early to judge the actual success of Nordhavnen's redevelopment, the project has garnered a very positive momentum on the basis of its strategic investment in the streets, promenades, parks, and urban spaces that will soon populate the new district.

Nordhavnen is bold given its context, but its strategic design, the structuring of its development, and its long-term vision are all highly mindful of the area's urban and market contexts. Ultimately, this adaptability and responsiveness to market realities will anchor the project's viability. The design principles that guide this megaproject are not revolutionary – they are extrapolated from the organic, medieval streets of Copenhagen, and organized into a master plan that maximizes their effectiveness. It should then be logical that if Copenhagen is projected to continue its historic trend of slow growth, that Nordhavnen will likewise share and contribute value to the city at the same consistent pace.



Exhibit 9: Activity level at the new Nordhavn waterfronts (Competition phase rendering, COBE)



Exhibit 10: The strategic plan redevelops existing inlets of water into urban waterways. The vision of the developing authority is that these amenities will provide the value necessary for adjacent buildings to attract residents, workers, and the general public. (Competition phase rendering, COBE)

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Board Review

Frederick Cooper

Biography

Frederick Cooper oversees Toll Brothers' Wall Street, banking, and rating agency relationships and its investor relations and financial marketing activities in the United States, Europe, Middle East, and Asia. He is overseeing Toll's exploration of international expansion opportunities in Asia, Latin America, the Middle East, and elsewhere, and of distressed opportunities from U.S. financial institutions. He has been financial point for Toll's entry into the urban high-rise condo, apartment, retail, and office sectors. Mr. Cooper joined Toll Brothers in 1993 and has been involved in raising over \$7 billion to support the firm's growth. Since 1993 Toll Brothers has expanded from a regional home builder with \$400 million in revenues to a Fortune 500 national land developer/homebuilding company with peak revenues of over \$6 billion.

He holds an A.B. from Brown University and a Master of Public Policy in Finance and International Development from Harvard University's Kennedy School of Government.

The author makes a compelling argument for the long-term potential of Nordhavnen as one of the next great places to live, work, and play in Copenhagen. The Nordhavnen planning program already includes convenient mass transportation infrastructure access linking the area to the more established parts of Copenhagen, a well thought out system of canals, historic building preservation, and harborfront amenities that tie the community to the historical and natural attractions of its waterfront heritage, and many sustainability features in the areas of energy, recycling, and water usage. All these factors suggest Nordhavnen has put in place many of the components to become a very exciting multifaceted community.

With a development life span of 50 years, the project will undoubtedly be impacted by several economic cycles. Therefore, having access to capital to fund a project of this scale and longevity is very important in translating plans into reality. Presumably, at some point, the goal is for the project to become self-funded, whereby land sales to developers provide the capital for future infrastructure development, and, as land values increase, more and more funds become available to support the project. But initially, and during times of economic slowdown, these funds may not be available in sufficient quantity.

The publicly owned development entity charged with shepherding the project forward, the CPH City & Port Development "CPH", which is owned 55 percent by the City of Copenhagen and 45 percent by the state of Denmark, will be providing, or at least managing, the infrastructure and public amenities to attract

development while operating without profit motive. It would be interesting to understand the capabilities and resources of CPH: Does CPH have capital in place to implement the infrastructure program for transportation, land development, public amenities, and sustainable infrastructure? Does CPH have capital raising authority? What approvals does it need to make changes to the master plan as demand evolves over time, especially if these require dramatic budget increases or sharp cuts in publicly popular features?

Assuming, and it is a key assumption, that the demographics are such that there is real demand for a project such as Nordhavnen, an initial challenge will be to set the appropriate tone for the community that will create the momentum to carry the project forward for future development. With significant public amenities designed into the initial phasing, the project can get a strong jump-start toward success. However, there is always a ‘chicken-and-egg’ aspect to developing a project of this scale as a work-live-play community: will the retail/lifestyle players come in if the residents are not in place and demand is yet to be proven? Will the residents come in if the retail/lifestyle features are not there yet? The plan for major office space will provide some immediate day time activity that can catalyze a certain level of service providers. Does CPH have the ability to provide financial incentives – tax reductions, low-cost land, etc...- to entice the first round of residents and retailers to locate there?

Megaprojects' Exclusionary Benefits: the Case of Local Government Policy Benefiting the Privileged Few



Arana Hankin

Biography

Arana Hankin is currently a Loeb Fellow at the Harvard University Graduate School of Design. Most recently she served as the director of the Atlantic Yards Project for New York State's economic development agency, Empire State Development. She also oversaw a 44-acre redevelopment project in Long Island City as the president of the Queens West Development Corporation and ensured delivery of community benefits as project manager for Columbia University's Manhattanville expansion in West Harlem. Prior to joining Empire State Development, Arana served as assistant secretary for cultural and economic development for the Paterson gubernatorial administration, overseeing eight state agencies, shaping budgets, and dictating policy agendas. Arana is spending her Loeb year studying creative financing structures to fund public-private development projects and strategies that guarantee the delivery of economic and social benefits to local communities.

For the last ten years I have worked at various levels of New York State government, gaining different perspectives about economic development policy and publicly supported capital projects including large-scale projects known as megaprojects. I worked for a Harlem politician who was the leader of the New York State Senate, advocating for economic growth in the Harlem community by expanding cultural institutions, developing state-owned property, and increasing zoning rights. I worked in the New York State Governor's Office drafting economic development policy and overseeing the operations and budgets of the state's economic development agencies, often dictating which projects were awarded funds. Most recently I worked for New York State's economic development agency, Empire State Development, managing megaprojects, such as the Atlantic Yards Project, and overseeing the implementation of community benefits for Columbia University's expansion in West Harlem. During this time I worked closely with the city's economic development units within the Mayor's Office as well as at the agency level. These experiences working within multiple levels of government have shaped my opinions about economic development policy, megaprojects, and the impacts felt in New York. This paper is dictated by those experiences.

Megaprojects Situated in New York

Megaprojects in New York are most commonly situated in low-income, disenfranchised communities. There is no doubt that these projects alter neighborhoods. Government supports these large-scale projects because they eliminate blight, create vibrant new communities, increase tax revenue, and create jobs. But, it is undeniable that these projects can have negative impacts as well. A variety of mitigation measures imposed by government on developers claim to reduce these negative impacts. Project approvals are granted based on the premise that there is a positive return on public funds invested, and that the majority of negative impacts can be mitigated. Yet, very little energy is exerted on projecting the long-term impacts on the citizens who live in the wider community surrounding megaprojects.

Economic Development Corporations Determining Value

In New York, both at the city and state levels, megaprojects are proposed, approved, and implemented by public economic development agencies, also referred to as corporations. These are quasi-private entities that have more autonomy than a typical government agency. The goal of these economic development corporations is to spur local growth. Growth typically refers to business growth, and only for those businesses savvy enough and large enough to lobby government for public support. Small, locally owned businesses without the resources to lobby government do not typically benefit from economic development policy.

The tools utilized by economic development corporations fly below the radar. They are obscure and difficult to understand and access. Most of their operating budgets are not funded by public dollars. Instead, the budgets that allow these agencies to function are supported by revenue raised from the private sector, even though public assets are often capitalized to raise these funds. These quasi-private entities function more like a private corporation in that they monitor the rate of return on their investments and they are not required to be as transparent as government agencies. Until recently, they also received much less scrutiny.

Projects are sold to the public by touting a positive return on investment, the expected increase in tax revenue, and the number of jobs that a proposal is projected to create. It is argued that government resources are needed to subsidize private enterprise in order to induce private investment in areas that are otherwise unable to attract it. Government defines these areas as blighted, but many New York City megaprojects that benefit from hundreds of millions of dollars of public subsidy are located in areas that are in the midst of gentrification. Private capital has already started to flow into these areas, and it has been contested that there is still a need for such a substantial public investment in these communities.

After the Approvals Have Been Won

The lifespan of megaprojects is long, often spanning 15 to 25 years. Their successes and failures are difficult to track, but no attempt is made to evaluate these projects. Neither tax revenue, nor job creation numbers are monitored. Moreover, megaprojects span multiple administrations. Sitting administrations often do not feel an appropriate sense of responsibility, especially if the project was approved by a previous administration. The task of monitoring job creation numbers is daunting, as is calculating the tax revenue states and localities collect from projects, and private sector parties are not pressured to provide the information needed for government to conduct an accurate assessment. The fact that government makes no attempt to value the success of megaprojects means that the policy that dictates the delivery of these projects is not being discussed or revised.

One of the most successful surveys conducted on the efficacy of megaprojects is Flyvbjerg, Bruzelius, and Rothengatter's survey of global megaprojects. Their research documents that governments consistently not only underestimate the cost of megaprojects, but also overestimate the benefits (Flyvbjerg et al. 2003). It is their opinion that government is unwilling to improve the methodology of designing these projects and calculating impacts because it behooves political leaders to mislead citizens to ensure public approval of their projects. In one of the most thorough analyses on megaprojects to date, *Mega-projects: The Changing Politics of Urban Public Investment*, Altshuler and Luberoff write, "members

of Congress value such projects as means to solidify their political bases rather than as efficient economic investments” (Altshuler and Luberoﬀ 2003). Arguably, there are alternative development plans that are better able to deliver the full range of economic benefits at a much more responsible cost, but time is not spent exploring alternative plans (Flyvbjerg et al. 2003).

Private Sector Taking the Lead

Many theorists of urban policy contend that government’s will is controlled by the interest of the private sector, but a mutually beneficial relationship needs to seek a more wholesome partnership. Elite-reputational theory assumes that the public sector is ‘servant’ to the private sector. This dynamic often exists because government does not have the expertise or manpower to develop its own transformative and iconic legacy projects.

Government is responsible for proving that these projects will deliver a meaningful amount of jobs and tax revenue, and that there is a return on public investment. The reason that government overinflates benefits and underestimates the risks of these projects is the same reason that government neglects to hold private developers accountable. Government leaders already have too much skin in the game; once these projects are approved, they have put their political reputations on the line in support of these projects and there is an inability to amend these plans once the deal is sealed. Holding developers accountable would elucidate the limits of megaprojects and name government as a responsible player in carelessly using public funds.

Altshuler and Luberoﬀ’s recounting of public choice theory illuminates the dynamic that exists between the coalition that real estate developers build and the public sector. “Governments greatly favor the well mobilized, who in turn diﬀer systematically from other groups... members with the largest stakes tend to be the most highly motivated” (Altshuler and Luberoﬀ 2003). Certainly, the developers of megaprojects put a lot on the line. They have the greatest amount of profit to gain or lose, and they fight tirelessly to ensure success.

Private developers are also astute organizers, building coalitions of influential supporters, all of whom

typically donate generously to political campaigns. Private developers have multiple lobbyists on retainer at all levels of government, and they are able to shape the political tide of an issue. They have access to the press and utilize press announcements to control the momentum of an issue. The Mayor and/or Governor is not just contending with the executives from one real estate firm, they are up against an entire conglomerate of powerful private and public individuals. This dynamic leaves government powerless, except at the point before projects are approved. Prior to approval, government has the leverage to demand more of developers in exchange for public subsidies and incentives. But if government refuses to analyze their mistakes they will always remain ill equipped to negotiate the delivery of projects that offer maximum public benefit.

Community Leadership Representing the Few

Public choice theory is also helpful in understanding how megaprojects create winners and losers at the community level. The efficacy of organized community opposition is most illustrative on the Atlantic Yards Project.

The Atlantic Yards Project is a \$4.9 billion development spearheaded by the state of New York. A private real estate company was designated in 2007 to develop the 22-acre site in Downtown Brooklyn. The project will include 16 residential and commercial towers, 2,250 units of affordable housing, and eight acres of public space. To date, the Barclays Center, the basketball arena of the Brooklyn Nets, is the only building to have been completed.

Currently the most well mobilized members of the local community in Brooklyn are the middle class renters and homeowners near the project site. They have an economic interest in the area and, because of their stable social class, the luxury of being able to expend a significant amount of resources on mobilizing in opposition to the project. The dynamic characterized by public choice theory is realized as the majority of issues that government and the private sector are forced to address are quality of life and environmental issues, the primary topics that are raised by this middle class population.

New York has done well mitigating the environmental impacts of megaprojects. There are a number of reputable and established firms that have the capacity and intellectual capital to monitor the environmental impacts of construction. Highly mobilized community groups that have tirelessly advocated for environmental mitigation measures have ensured that government dedicates a significant amount of time and resources resolving these issues. Middle class opposition is astutely educated about the process, and they are persistent activists. They have the political influence and media skills to be able to maintain a consistent fight to ensure that their issues remain at the forefront once project construction begins.

One would expect that local politicians, especially those representing a low-income population that could reap the most from jobs and affordable housing, would take up equity issues on megaprojects, such as ensuring that there are long-term positive economic impacts to their constituents. These elected officials raise these issues during the campaign season, but lack the manpower to comb through hundreds and thousands of pages of executed agreements to truly understand the issue or what exactly the developer committed to delivering to the local community. The limitation of time requires them to respond to the concerns of the most vocal and influential populations - those advocating for environmental mitigation.

The Complicit Role of the Community Benefit Agreement

The middle class population is not the only sector that is represented by a well mobilized consortium of activists, but, unfortunately, the advent of the Community Benefit Agreement “CBA” has quieted the community leaders whose charge is to advocate for the most needy population, both on the Atlantic Yards Project, and most every other megaproject in New York City. These community groups have been burned by government in the past, excluded from development plans, and historically have not benefited from government interventions. Their vocal opposition to megaprojects, as well as their successful efforts to organize and effectively impact government policy, has led to their involvement in

the execution of CBAs. Unfortunately, these parties were ill-prepared to negotiate with private developers, and many community leaders who participated in the process were self-serving. Private developers’ use of the CBA and government’s insistence on taking a backseat role has continually marginalized low-income communities and stoked destructive infighting for limited resources. Local leaders who have signed these CBAs no longer are able to publically oppose these projects as a condition of benefit delivery, yet, because the developer has the upper hand during negotiations, these agreements are typically not legally enforceable and many of the benefits are never realized. Furthermore, the CBA has not succeeded in protecting local businesses and residents from the impacts of gentrification brought on by these megaprojects. CBAs were devised by the private sector to avoid public opposition to their projects, not to deliver community benefits (Wolf-Powers 2010).

It is essential for government to take a proactive role overseeing implementation of benefits by mandating third party advocates for local communities and by rewriting economic development policy so that it contributes to the economic growth of a locality, not just the economic growth of big business. The CBAs executed in New York will not create any long-lasting positive impact locally. Other cities have been successful in delivering meaningful benefits to local residents while New York has failed miserably. Government’s arms length approach has contributed to the further marginalization of populations who will suffer from impending economic changes in their communities.

Equitable Policy Explored

Economic development policy needs to consider equity issues, not just the environmental impacts they have succeeded in monitoring or only ensuring that there is a return on investment. These new policies should include measures that help to balance the impacts of gentrification brought on by megaprojects. The public sector can support the growth of a holistic community coalition before projects are approved so that the needs of all residents can weigh in on development plans and their concerns can truly be considered. CBA should not be executed without government oversight.

Developers commit to creating thousands of jobs, but government requires that megaprojects be staffed by union labor. As a result, no new jobs are created for the local population, at least not on the construction side. Existing union members are recycled for each of the megaprojects constructed in New York City. Community leaders know how difficult it is for new workers to be admitted into the union, so they have negotiated for the creation of apprentice slots as a part of the CBA process. But new union positions are never created. Developers do not have the impetus to negotiate with the unions if creating apprentice slots is not a legal requirement.

A greater effort should also be made by government to make certain that small, minority, and locally owned firms are hired to assist in the construction of these projects. In New York City the same handful of construction firms owned by women and minorities are used on every single project. Government should break this cycle by requiring developers to partner with locally based firms that have not been awarded government contracts. Public programs already exist that can assist small businesses with bonding requirements, which is the major impediment for entry into the market. A large site could also be split amongst different developers, so that more than one firm is able to extract revenue from these projects. Public subsidy would go much further if policies were truly inclusive.

Currently there are no hiring goals for minorities or women at the state level for the operations side of a project. This needs to be amended immediately. Small and minority-owned businesses are not benefiting from these vibrant new communities. Private developers

should be required to subsidize commercial rents on- or off-site, and support small business services so that local businesses are not displaced. A placemaking project should also be funded, such as a new cultural facility for a local non-profit, a market for fledgling entrepreneurs, or a business incubator to help encourage the growth of new local enterprises.

Lastly and most importantly, government should be conducting on-going economic analyses of megaprojects so that they can be better informed to handle equity issues going forward. More needs to be done to ensure that economic development policy not only benefits the economies of the affluent, but the economies of all citizens. Policies that have dictated megaprojects have contributed to the widening economic gap in New York, speeding up the impacts of gentrification, displacing residents and local businesses, and supporting the growth of big business. Development in New York has a multitude of complexities. To be truly successful, policies will require a more holistic perspective that includes all of its citizens. New Yorkers should demand more of their government.

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Board Review

John Macomber

Biography

John Macomber is a Senior Lecturer in the Finance unit at Harvard Business School. His professional background includes leadership of real estate, construction, construction services, and information technology businesses. At HBS, Mr. Macomber is engaged in the Business and Environment Initiative and Social Enterprise Initiative. He teaches Finance, Real Estate, Urbanization, and Entrepreneurship courses in the elective curriculum and in Executive Education. He is the former Chairman and CEO of the George B H Macomber Company, a large regional general contractor; and remains a principal in several real estate partnerships. John serves or has served on the boards of Young Presidents Organization International (YPO), Boston Private Bank, Mount Auburn Hospital, and Vela Systems.

Mr. Macomber is a graduate of Dartmouth College (Mathematics in the Social Sciences) and Harvard Business School.

Megaprojects create value to society by making possible very large scale changes to the built environment, very quickly, while mobilizing large amounts of cash and a wide array of skills. The changes and the means can be viewed from many angles.

My research in megaprojects around the world, notably in infrastructure development and in slum rehabilitation, indicates that it is useful to separate the analysis into four different analytical buckets:

1. What are the other choices for government and the people? Meaning, in the absence of xyz megaproject, what else will happen in the neighborhood or for the road or for the water project? Often, the answer is “nothing.” So, despite the sometimes distasteful aspects of megaprojects, something is often better than nothing.
2. What is the source of capital? Megaprojects often are able to attract both private capital and public capital (from bond issues or NGO investment or multilateral organizations like the World Bank) that would not be mobilized otherwise in either status quo or “serial mini-projects” or “local government writes a check” scenarios. Thus, it is important in my view to consider “compared to what other funding choice?” as part of an analysis.
3. The creation of value can be separated from the capture or allocation of value. This is to say that a megaproject might create a large amount of economic value from real estate, from jobs and payrolls, or from new economic activity. Value

capture and allocation can be done in numerous ways, many of which explicitly benefit displaced residents, lead to clear improvements in public services like transit, water, schools, or fire and police, or contribute to the coffers of the city or state in ways that can be spent for the public good. The creation of value is to be embraced; the mechanism for allocation of value can be improved.

4. There can always be bad actors, rogues, and crooks. It is more effective in the long run to think carefully about how to control the players and their actions with respect to megaprojects than it is to not do the project at all -- and therefore sacrifice the benefits -- out of fear of bad guys.

“Megaprojects’ Exclusionary Benefits: The Case of Local Government Policy Benefitting the Privileged Few” is a passionate start in the study of these questions. Further fruitful avenues for research could include some or all of the following:

- Catalog a large set of megaprojects in urban areas to compare basic statistics like original budget, final cost, housing units created, jobs created, risk-adjusted and time-weighted proceeds to “the privileged few”, and changes in adjacent real estate prices.
- Look at the financing more explicitly from a pro-forma point of view: what were the sources and uses of funds, how did revenues, costs, and profits/losses flow, and what were the values at exit?
- Research the literature about successful and unsuccessful megaprojects, from urban renewal to ports to mines to water systems (like the three massive water tunnels feeding New York City) and catalog what makes a success and what does not.

Any of these approaches could expand the scholarly aspect of “Megaprojects’ Exclusionary Benefits” and start developing the work into a document that could benefit future planners, leaders, and communities involved in megaprojects.

Real Estate: the New Frontier in Sports Franchise Ownership



Jason McAlees

Biography

Jason McAlees is a candidate in the Master in Design Studies program at the Harvard University Graduate School of Design with a concentration in Real Estate. He has nearly six years of experience in the commercial real estate industry, with a focus on the residential sector and corporate finance. His experience includes all aspects of real estate investment, with emphasis on analytical modeling, finance, and legal, organizational, and tax issues. Most recently, he served as Manager of Corporate Initiatives at Security Properties – an investment, development, and operations firm based in Seattle – developing, analyzing, and managing the equity and debt relationships of the company, especially private capital fund management and investor relations. Jason holds a Bachelor of Science in Economics with a concentration in Real Estate from the Wharton School, as well as a Bachelor of Arts in German from the University of Pennsylvania.



Carly Jane Zapernick

Biography

Carly Jane Zapernick is a candidate in the Master in Design Studies program at the Harvard University Graduate School of Design in Real Estate and the Built Environment and holds a Bachelors of Commerce with Distinction from the University of Alberta School of Business. During her undergraduate career, Carly co-founded a real estate investment group that invests in value-add single-family homes and low-rise multifamily properties in Edmonton, Alberta. Carly spent a year in Washington, DC as an analyst working for a boutique developer-investor focusing on public-private development opportunities in the United States, Haiti, and Brazil. An avid sports fan, Carly is interested in the value derived by franchise owners through their control and development of real estate sites surrounding sport venues.

Professional sports stadiums are as intrinsic to the history and tradition of the franchises they house as are the players, games, coaches, and fans. Stadiums also represent some of the most famous, expensive, and controversial real estate megaprojects in the United States. Built with an inherently inward-looking perspective, the relationship between the stadium and its surrounding environment has evolved over the past 20 years. Starting in the



Exhibit 1: Dodgers Stadium, Los Angeles, California

1990s, the stadium emerged as a kind of civic symbol, one that could also potentially catalyze economic and physical development. The integration of stadiums into broader urban redevelopment schemes aimed at revitalizing declining or underutilized neighborhoods followed. These initiatives often featured a partnership between the sports franchise, the local governing body, and private real estate developers. Second, following that blueprint, the trend of stadium-anchored real estate development more recently reached its next logical point – projects conceived of and executed by the franchise owners themselves. The development of Patriot Place, a 1.3 million square foot entertainment and retail complex attached to Gillette Stadium in

Foxboro, Massachusetts spearheaded by the Kraft Group, exemplifies an owner attempting to enhance the income generated by and value of the franchise through real estate development.

The Evolution of the Stadium Model

Driven by rising land costs in urban cores, sports franchises flocked to the suburbs. Patrons of sporting events typically arrived in an automobile, parked in a vast sea of asphalt lots surrounding the stadium, spent most of their money inside the venue, and left soon after the game concluded.

Beginning with the redevelopment of Camden Yards in Baltimore, Maryland in 1992, however, the perception of the role of the stadium within the larger urban context shifted. Instead of constructing stadiums in a suburban greenfield, teams and local officials alike made efforts to integrate the stadium into the existing built environment. No longer viewed as a solitary monolith devoted exclusively to infrequent sporting events, stadiums would instead anchor larger retail and entertainment-based districts designed to capitalize on game day attendance and catalyze sustainable economic activity.

In theory, large facilities bring about redevelopment by drawing visitors – particularly from outside the immediate neighborhood – to events, providing the critical mass necessary to support investments in related entertainment facilities such as restaurants, bars, and retail. The retail and entertainment developments draw corporations, leading to an expansion in office space. In turn, new offices spur residential development as high-income families move to the newly thriving, amenity-filled neighborhood. Combining commercial development with a large facility also makes practical sense, as they often have the parking, roads, and infrastructure to handle large crowds. Stadiums – and the sports franchises they house – represent the kind of highly visible, wildly popular, and widely understood institutions that cause broad economic stimulus, and (re) development in particular.

Camden Yards became the first sports facility to test the theory of stadium-anchored urban redevelopment. In the prior decade, Baltimore had revitalized its Inner Harbor area through the construction of a convention center, a cluster of museums, and entertainment retail. The plan for the new Camden Yards, which would sit directly adjacent to the Inner Harbor, included not only the stadium, but also surrounding office, restaurant, and retail space that connected to the existing neighborhood. The redevelopment of Camden Yards received positive reviews, including raves for its architectural and urban design quality, and built upon the development of the Inner Harbor.

Ironically, in contrast to the trend of franchise owners eagerly developing the land around their stadiums, the ownership of the Baltimore Orioles – the sole occupant of Camden Yards – opposed the development of

surrounding parcels. They feared the cannibalization of retail sales within the stadium and claimed that the loss of parking would adversely impact attendance and thereby hamper entertainment-oriented development opportunities.

Gillette Stadium

As urban development proponents studied the Camden Yards model, similar development schemes were proposed and executed in the mid- and late-1990s in other cities across the country, with and without the support of the owners. During that same time, the New England Patriots joined the growing list of franchises pursuing a new stadium. The Patriots played in Foxboro Stadium, an outdated relic completed in less than one year in 1970 for a paltry cost of \$4 million. Located in Foxboro – approximately halfway between Boston and Providence, Rhode Island – the stadium lacked both the capacity and then-ubiquitous amenities like luxury boxes needed to compete with other franchises.

Robert Kraft, the Founder, Chairman, and CEO of the Kraft Group, the owner of the Patriots, led the search for a new stadium. Kraft actually owed his ownership of the Patriots to Foxboro Stadium. In 1988, he outbid several competitors to acquire the stadium out of bankruptcy from then-owner and team founder William Sullivan. Kraft's stadium purchase included the lease between the Patriots and Foxboro Stadium. When a subsequent owner made an offer to buy out the lease in an assumed effort to move the Patriots to St. Louis, Missouri, Kraft countered with an offer to purchase the franchise outright for \$172 million.

The Patriots explored a number of alternative stadium sites in places like Boston, Providence, and Connecticut. At one point, Kraft even reached an agreement with the then-Governor of Connecticut to relocate the team to a new state-of-the-art stadium in Hartford, a stadium that, naturally, would have anchored a major redevelopment of its downtown. However, after obtaining \$70 million from the Massachusetts Legislature for infrastructure improvements, the Patriots elected to remain in Foxboro. The new Gillette Stadium would be completed in the shadow of its predecessor in 2002 at a cost of \$325 million.

With the benefit of hindsight, the election to keep the team in Foxboro came as little surprise. Beginning with the purchase of an option on a parcel of land adjacent to Foxboro Stadium and culminating with the acquisition of the stadium itself, by 1994 Kraft found himself in possession not only of a sports franchise and a stadium, but also roughly 700 acres of developable land.

The Kraft Group

After graduating from Harvard Business School, Kraft established International Forest Products LLC in 1972 and subsequently entered the paper manufacturing and forest products distribution industries. Kraft maintains that presence today – his son Daniel is the current President and CEO of International Forest Products. The acquisition of the Patriots in 1994 marked the beginning of an expansionary period for Kraft and his company into sports; he would later help found Major League Soccer’s New England Revolution. Today, the Kraft Group, created in 1998, also operates in the energy, private equity, and philanthropy sectors.

Whether intentionally or not, the company’s land holdings offered Kraft yet another expansion opportunity – he could become a real estate developer. During negotiations with the Massachusetts Legislature for approval to construct what would become Gillette Stadium, Kraft also quietly and successfully sought to rezone the surrounding acreage to accommodate a future mixed-use development. Although Kraft lacked experience, he undoubtedly recognized the potential value of his land holdings, especially set against the proliferation of stadium-anchored developments across the country. “The Patriots would join a growing number of NFL teams trying to use stadiums as catalysts for commercial development” (Preer 2006). However, unlike the projects undertaken by the owners of those numerous other franchises, Kraft planned to develop the project himself. Moreover, “Kraft...plan(s) to own the development long-term and keep control of the day-to-day operations of the complex, which analysts say is rare for such a large undertaking” (Abelson 2007). If it succeeded, Kraft’s plan would constitute another significant evolution in the stadium development model.

Patriot Place

After opening Gillette Stadium in 2002 – at a significant cost to his company – Kraft began to seriously contemplate a use for the remaining land, not to mention the vast roadway and parking infrastructure needed for just a few dozen events annually. Numerous big box retailers expressed interest in building on the land across Route 1, but Kraft, after surveying real estate brokers in the region, gravitated toward an open-air lifestyle center. The lifestyle center concept originated in the Midwest in the 1990s before spreading to the Southeast and Southwest and is hallmarked by its large scale and mixture of uses, with emphasis on entertainment and retail. Kraft thought a lifestyle center would capitalize on the Patriots brand, complement Gillette Stadium, and attract up to 40,000 visitors daily. Moreover, “on game days, [Kraft] hopes to get people to come earlier, stay longer, and to lure into its stores the thousands who show up without game tickets and tailgate in the parking lot all day” (Abelson 2007).

The planning process resulted in Patriot Place, a 1.3 million square foot complex designed by Arrowstreet, an architecture, urban planning, and design firm based in Cambridge, Massachusetts. Opened in Fall 2007 at a cost of \$350 million, the initial phases include a power center anchored by Bass Pro Shops – a Missouri-based retailer that specializes in fishing and hunting gear, drawing customers from an average 300-mile radius – and a lifestyle center that includes specialty shops, restaurants, a multiplex theater, a 120-room hotel, broadcast studios,



Exhibit 2: Patriots Place under construction



Exhibit 3: Renderings of Patriots Place

a health club, medical offices, and a museum dedicated to the Patriots. Kraft, in consultation with local retail brokers, carefully selected the unique mixture of tenants to complement the in-stadium retail offerings. The Kraft Group also calls Patriot Place home.

Though Patriot Place has at times struggled to generate consistent crowds during the off-season, the development has succeeded, particularly in light of the general real estate environment at the time of its opening. In place of a parking lot, Kraft has created a productive entertainment district that draws visitors from throughout the region. By Kraft's estimate, the project has also benefitted the town of Foxboro enormously, generating \$1 to \$2 million of tax revenue annually – net of municipal service provision – compared to previous total annual revenue of \$4.3 million. The clearest sign of the project's success from Kraft's perspective, however, is his ongoing desire to expand. In the past two years, Kraft has sought allowances from the town to build another hotel, more restaurants, more retail, and more flexible commercial uses. The medical facility plans to grow. In the long term, Kraft hopes to attract a corporate headquarters and to construct housing. That a development of this nature succeeded in a suburban location like Foxboro is likely to embolden other franchise owners with land holdings, especially those with holdings in urban and other strategic infill locations.

Conclusion

Much like the Camden Yards model of the 1990s, the Patriot Place model has been duplicated in other places, including in Dallas, Texas by Cowboys owner Jerry Jones, and is the basis for proposed new stadiums in Minneapolis, Minnesota and Atlanta, Georgia. Owners not only derive municipal and political support as well as – more often than not – public subsidies with such schemes, but also potentially reap enormous financial rewards. The ability of owners to envision, create, and capitalize upon ancillary streams of income from activities like real estate development has accelerated the exponential growth in the value of their franchises.

In 2012, the Los Angeles Dodgers sold for an astronomical \$2.15 billion, eclipsing the then-records for the highest price paid for a baseball franchise – \$845 million for the Chicago Cubs in 2009 – and for the highest price paid for any sports franchise in history – \$1.47 billion for Manchester United in 2005. Among the many valuable elements of the Dodgers franchise is the ownership of 300 empty acres surrounding Dodgers Stadium, a prime and wildly underdeveloped part of Los Angeles. The price paid by the new owners almost certainly incorporates expected revenues realized from future real estate development. In fact, in a potential sign of things to come, multiple bidders for the Dodgers franchise were real estate entrepreneurs.

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Board Review

Eric Belsky

Biography

Eric Belsky is Managing Director of the Joint Center and a Lecturer in Urban Planning and Design at the Harvard Graduate School of Design. Prior to his Harvard appointments, Dr. Belsky led the Housing Finance and Credit Analysis Group at Price Waterhouse LLP. He has also held the positions of Director of Housing Finance Research at Fannie Mae, Senior Economist at the National Association of Home Builders, and Assistant Professor at the University of Massachusetts at Amherst.

Dr. Belsky currently serves on the editorial boards of the *Journal of Housing Research* and *Housing Policy Debate*, the board of the Opportunity Finance Network, the Affordable Housing Advisory Council of Fannie Mae, and the National Advisory Council of CredAbility. In 2001 and 2002, Dr. Belsky also served as Research Director for the bipartisan Millennial Housing Commission established by the Congress of the United States. Dr. Belsky has extensive experience conducting research on housing markets, housing finance, and housing policy. He has published numerous articles in trade publications and academic journals.

This paper tells the story of the evolving relationships of stadiums to the areas that surround them. It focuses on two models in particular: stadiums as anchors for urban revitalization and stadiums as anchors for private real estate development around stadiums by franchise owners. The prime example of the former is the development of Camden Yards in Baltimore and of the latter is Patriot Place adjacent to Gillette Stadium in suburban Foxboro, Massachusetts. Indeed, these are two interesting, pioneering, and iconic examples of these two modes of relating stadiums to their surroundings. They move beyond the sea of parking and nothing else that surround so many other stadiums.

The cases raise important questions and issues. The first has to do with the role that the public sector plays in enabling private capital in developing new stadiums as well as real estate development around them in instances when private capital opts to undertake such developments. Some of the public supports that were provided in each of the cases are mentioned – from funding infrastructure to providing regulatory approvals of specific forms of associated real estate development. More attention to these and how fair a shake the community and the state got in return for them would have been welcome in illuminating the appeal of using stadiums to anchor development or redevelopment, and what might be done to improve the public return.

The paper also passes over the interesting parallel between Camden Yards and Gillette Stadium. Part of Camden Yard's success is that it is adjacent to another

large mixed-use redevelopment that involved concentrates public as well as private investment – the Baltimore Waterfront. Camden Yard was in some respects an extension of this earlier redevelopment to a nearby area (to, at the time, a team ownership resistant to further retail development for fear of competition with in-stadium concessions). Situated in an urban environment, it helped further catalyze redevelopment of a broader part of the downtown area. Still, Baltimore is struggling to attract investment to redevelop its distressed communities. In the case of Gillette Stadium, the private development benefiting from large public investment is occurring second, in a suburban greenfield, and with the ownership in the same hands as the stadium and franchise. It looks like the hefty investment and risk the owner took in this case will pay off.

The paper concludes with the observation that the Los Angeles Dodgers appear headed towards real estate development of the valuable land around their stadium. It is apparent that the record price paid anticipated returns on real estate development—so the value of the franchise extended beyond the team and stadium to its 300 acres. The authors conclude that this a sign that this will repeat, but of course this depends in other places on the value of surrounding land and if it is owned by the franchise. In urban areas this is often not the case.

In addition to considering what the public gets back for its investments and its approvals when granting development rights to stadiums as anchors of urban redevelopment or greenfield development, it would have been interesting to consider how state and local governments can plan in advance for uses around the stadium. This would help produce better publicly vetted and value-added outcomes regardless of who controls the nearby properties.

Jack and Jill: How Individual User Experiences Can Matter So Much To Mega Development Returns



Sue Yang

Biography

Sue Yang is a Master in Business Administration candidate at Harvard Business School. Prior to Harvard, she was a management consultant with McKinsey & Company's Middle East office and worked on infrastructure and real estate projects across the Gulf Countries, Sub-Saharan Africa, and China. Sue is from Shanghai and Detroit and is pursuing a career in global infrastructure and real estate investments. She has traveled to over 80 cities, riding their transit systems, and exploring their mega developments along the way.

This is a story. About a man, a woman, and a mega real estate development. And about how, all together, they can magnify value. This is design principle meeting investment philosophy. First though, let us begin with more familiar and separate paths.

You may know the rhyme: Jack and Jill went up the hill to fetch a pail of water. Jack fell down and broke his crown, and Jill came tumbling after.

You may also know this common pattern: developer has grand vision. Investor, great expectations. Local government waves the banner. Subcontract or falls down and delays resound, and the whole budget comes tumbling after. Up the buildings go and many are sold, but ceilings and yields tatter thereafter.

How do these two threads come together? In thinking about mega developments, it is vital to keep sight of the individuals – the Jacks and Jills – who will one day experience their hills and all. Developments at this ‘mega’ scale are not only measured by their definitional billion-dollar price tags or their highly public impact on the collective. They are also measured by each person who moves in, walks their pavements, reads about them, or takes to any opinion about them. That population size is also a multi-million figure to keep in mind. On the margin, each individual experience has a unit cost and unit return associated with it. Aggregated, these unit margins add up to the development's precious reputation and to the stark spread between a premium above market values and a sharp discount below them.

So, if Jack and Jill need to fetch that pail of water, what do their experiences look like? What systems and features help them? Impede them? Oftentimes, the answers coincide with bigger issues that were overlooked, or are indicative of poor coordination early on. Jack fell down because the trail had cracked, which was because the trail contractor had chosen a cheaper and shoddier material, because he had to eke out a meager margin, because he had deliberately underpriced his bid to beat out five competitors. And all of this happened because the general contractor was also getting squeezed on margin, because the project owners were under pressure from investors and creditors to deliver cash quickly. Times were tough. Tracing back to the root cause, we see how this trail construction may have been ill-fated from the start. With so much squeezing back and forth amongst parties, minimum returns for each become the blinding focus. Not maximum ones for all.

Alternatively, if we as planners, developers, and financiers can together think through the individual's experience and marginal return in the first place, we might not

only avoid frequent pitfalls, but also uncover sources of bonus value. Design charrettes have already proven the effectiveness of using single user perspectives to bring schematics to life and to highlight key features. Illustrating developments through the eyes of individual users can be much more than a presentation tool though. To take this thought further, let us consider how this approach helps address a few of the most common reasons property development projects fail. Additionally, let us also consider how a version of this kind of user-centric thinking helped make real estate development a central and highly profitable part of Hong Kong's Mass Transit Railway "MTR" Corporation and how failing to thoroughly and consistently apply this user-centric design in all parts of a development resulted in the initial struggles of The Dubai Mall's Gold Souq. Finally, let us end with how this approach might be applied to new projects going forward.

Common Pitfalls Averted Through User-Centric Approaches

The concept of user-centric design is not new, but its application still has many frontiers to conquer. User-centric design reaches back at least into the 1980s with Donald Norman's book *The Design of Everyday Things*, which articulated the importance of designing firstly for user needs and only secondarily for aesthetics. Firms like IDEO have spread the popularity of this philosophy (termed 'human-centered design'), helping product and service development overcome challenges very similar to the ones below. As noted by IDEO President and CEO Tim Brown, this approach "integrates the needs of people, the possibilities of technology, and the requirements for business success." That is a sweet spot that megaproject teams should aspire to reach, lest they become one more victim of the frequent snares outlined below.

1. Failure to Understand the Customer

When planning teams operate on untested assumptions about their end users or incorporate them only as an afterthought, a development exposes itself to even greater uncertainty. Expensive elements are incorporated that may not add value to the end user. On the flipside, things that are of great value and are relatively easy and



Exhibit 1: Visitors peering into the two and a half story Dubai Mall Aquarium (top). MTR Hong Kong Station intergrated with IFC Mall (bottom).

affordable to incorporate early on might be overlooked or deferred at great cost. Different teams working on the project might make different assumptions on who they are building for and what preferences they need to mind, leading to inconsistent decisions. Lack of sharp clarity on the end user leaves significant room for error.

The financial model is also most sensitive to revenue-side assumptions, which are shaped fundamentally by what end users want. And yet, these assumptions are often high level and received detachedly. They are likely pulled from market reports and third parties, and taken at numerical face value: catchment area population of 300,000, 3 percent annual growth rate, 30 percent minority, median age of 35, median household income of \$130,000, the statistics go on. What is absent is a nuanced understanding of preferences that can only be gained from following up and asking users directly. For example, why is only 10 percent of that 300,000 catchment population actually shopping in a similar retail center nearby? The mix of retailers may appear to match the overall demographics, but there may not be a strong enough anchor store to pull people in regularly.

As another example, if the data and discussions conclude that young families are a key target segment, what must the development include and phase in first in order to convince them to move in? Where might the young parents work and how easy is it for them to get back and forth? Are there easy connections to public transportation and enough parking? Are there childcare facilities, good schools, playgrounds, and healthy fresh foods in easy reach? Or do they have to run all over town? Inside the home, what is the ideal number of rooms and layout for them? What kind of details do they value more and less? How much of a discount would we have to offer if any of these features are missing?

2. Unclear Project Parameters and Contingencies

Without a sharp view of the development's financial and non-financial tolerance, costly changes later on around design elements and contract terms can inhibit project success. It is critical that all parties play a role in weighing in on assumptions from ground-up, as all have a lot to lose should things go wrong. The worst of outcomes occurs when the cost-bearing parties are caught entirely off guard, without contingencies and

without ready buffer reserves. Reacting with alarm, the team may slash costs hastily and forego elements that are critical to attracting revenue. A negative loop begins.

Thinking about end users at the initial stage forces refinement of early ideas and reveals trade offs that the full team has to be ready to make. A major development might first be conceived for a broad purpose, but it also has to make sense at the most basic level. The user experience puts that practicality to the test. If we start with a question like "what are the features people need to see in our development to be compelled to live there or use it?", we can get to "as a result, this is what we need to build in phase one, this is how much it will cost, and this is how much financing we need." In the likely event that we cannot fund and build everything desired in one go, we then need to find more affordable alternatives or be prepared for slower absorption rates.

3. Misaligned Incentives

A frequent challenge facing developments of any size is in aligning the numerous parties involved and their sometimes competing interests. Each party has its own measurements of success and operates in a different dialect of the development language whether that be in cash flows or traffic flows. The user's perspective is a unifying one, giving all parties a common lens for framing assessments and a common set of success measures. It is a language that opens up a discussion everyone can be fluent in regardless of discipline. Conveniently, the synergetic relationship between decisions on where to place public amenities, how to redirect traffic, trade offs between building material cost and quality, and how to set retail rents can all be rolled up and dealt with simultaneously in simply answering how a user can have the most memorable experience in that space. To draw in a user, Jack, who normally passes by the area on his way to work without stopping, the development may want to invest in leafy parklets with comfortable street furniture, reduce rents at first to attract boutique retailers and barbershops, get the local transit authority to shift a bus stop location, and rally the support of the local merchants association in new branding. Optimizing around Jack makes the project priorities quite clear.

The overarching measure of success for all parties then is on repeat usage and voluntary ambassadorship: after

his visit, how likely is Jack to recommend the area to friends and to colleagues on a scale of zero to ten? That acid test is what management thought leader and author Fred Reichheld of Bain & Company has trademarked as the “Net Promoter Score (NPS).” It has been applied across industries to measure customer loyalty and focus organizations on cultivating the greatest value from these relationships. Considering the NPS potential in advance creates a story that can help get all parties onto the same page and thinking about how to maximize overall value so that everyone gains – instead of fighting over marginal shares of a shrinking pie. This value-maximizing mindset then opens the way for more productive discussions around how performance measures will cascade across parties and how incentives should be structured. It is a virtuous cycle. If Jack has a winning time, then the development wins more business and residents. As a result, we all win greater returns and intangible goodwill.

4. Lack of Consideration for Operational Issues

Planning and execution entail more than enough decisions, constraints, and unforeseen issues requiring immediate attention. As a result, it can be difficult to find the time to consider how steady-state systems will operate and interface with one another once the development is complete. Cheaper decisions upfront frequently entail significantly greater lifetime costs and non-quantifiable consequences later. Taking the view of Jack or Jill is a way to force foresight.

Imagine making choices on which facilities management company to choose and what degree of green infrastructure to install for a medium three-story office building under a tight budget and in an undersupplied market. It may be tempting to accept the lowest priced offer from a pool of facilities management companies or select concrete and simple shrubs over permeable pavement and large trees. After all, the office will lease up quickly and command great rents anyway.

However, reimagine the situation again in situ as the Regional Manager, Jill, of a company thinking about relocating its regional headquarters. Jill seeks a good value for the long run, an appealing space that accentuates her company’s brand, and an environment that improves the health and satisfaction of her employees. A quality facilities manager and greenscaping that reduces her

energy bill while enhancing the office atmosphere can not only convince her to sign, but also commit to a five-year lease. On the back end, it also saves the developer significant ongoing costs from having to intervene where poor facilities management fails, fix potholes in the concrete, deal with damages from excess storm water, amongst other costly aggravations.

5. Poor Sales and Marketing Plan

As outstanding an internal rate of return as a development’s proforma might suggest, it is nothing more than fantasy without a robust sales and marketing plan to realize the real dollars. Hiring the best real estate brokers in town is a partial effort. Thinking about what design and operational choices target users would value the most in experiencing the development, as previously suggested, is a good improvement. But, to truly capture the greatest value at this stage, the development team also needs to prolong the time it spends in the user’s shoes.

Understanding the situation and factors triggering a need to relocate or influencing a decision on exactly where to settle into can win the sales and marketing team a measurable advantage. Jack would be willing to move from out of state in order to join a growing company and a burgeoning social scene. Jill has been thinking about moving out of her overpriced and cramped apartment downtown, but hesitates to lose her easy commute. Value propositions that are able to strike upon hopes and uncertainties like these are far more likely to stand out.

Stepping back to the big picture, this depth of understanding of each target segment can also translate into better timing overall. The right commercial tenants have to be there to offer jobs and entertainment to Jack. Individuals like Jill need to feel comfortable being the first to move in before the development can reach its critical mass and offer full services. Providing incentives to and over-investing in first movers can help spark a loyalty and market buzz that pay back worthwhile dividends, spurring faster absorption and property value appreciation as anchor tenants attract greater masses. Going back to the principle behind the NPS, sales and marketing plans that take the time to make the end-to-end experience ideal for a handful of early users can also reap significantly greater returns.

Finding Hidden Value Through User-Centric Thinking: The Case of Hong Kong's MTR Corporation and MTR Properties

Welcome to Hong Kong. You glide through the expansive terminal filled with colorful shops and open dining areas, through the orderly immigration line, and through the translucent double doors opening out into the arrivals hall. On your left, the Starbucks green lady waves hello. On your right, famed local restaurant Crystal Jade beckons similarly with its savory soup dumplings. Just ahead is the entrance to the Airport Express, an inexpensive and quick ride into the city. You beeline past all but the last option, hungry as you are. Luggage tossed onto the rack, you sink into a window seat of the express train and power up your phone. Wi-Fi immediately kicks in as the doors slide shut. Soon you are whisked into broad daylight, across glittering waters, and under sky-high towers, emerging just 20 minutes later in the heart of the city at gleaming Central Station. Riding up the escalators into IFC Mall, you are greeted by a line of taxis at your service and by the inviting glow of atriums full of retail shops and restaurants above. This time, you choose to dine. Luggage secured with the Airport Express station's Left Baggage Service, you are left only with your plate of steaming soup dumplings. Welcome to Hong Kong efficiency.

Hong Kong's Airport Express and metro system operator, the MTR Corporation, is one of the most profitable in the world, with revenues of roughly US\$5 billion in 2012 and profits of US\$2 billion. Divided over its daily ridership of nearly five million passengers, or 1.83 billion a year, that is an average profit of US\$1.00 per ride. That is a particularly impressive profit margin given the fact that each adult, single-journey ticket only costs US\$1.00-\$2.00 to begin with. In stark contrast, New York's Metropolitan Transportation Authority "MTA" saw a loss that same year of US\$4.00 per ride or a mitigated loss of US\$1.00 after subsidies.⁽¹⁾ Top that difference off with Hong Kong's 99.9% on-time rate and the gap is all the more lucid.

How does Hong Kong do it? Established in 1975, the MTR Corporation is an integrated 'rail plus property' enterprise that realizes around half of its revenues from its real estate arm. Similar to many metro lines around the world, MTR fills empty nooks within the station with convenience and high-turnover retail. However, unlike many, it also incorporates the land around its 28 MTR stations into a greater development plan. MTR Corporation owns over 82,000 housing units and over 19 million square feet of commercial real estate. This includes two iconic skyscrapers (the 118-story International Commerce Centre and the 88-story Two IFC) and a portfolio of luxury and neighborhood malls.

From the beginning, the developers could see opportunity well beyond the metro line's tracks and carts. They saw the bigger picture; they saw the additional value that could be created for urban riders by integrating offerings based on how people actually spent their days. In such a space constrained city, the metro would offer people the

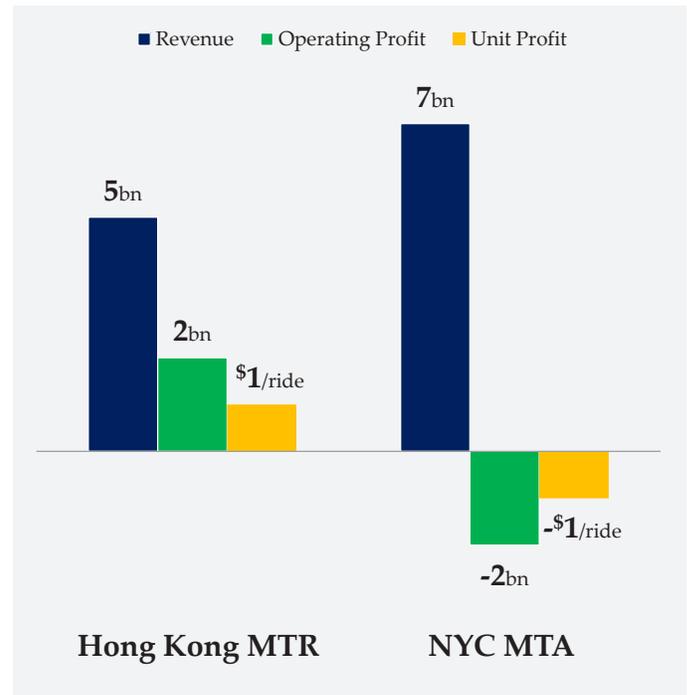


Exhibit 2: MTR and MTA 2012 Performance

(1) Calculated based on the MTA's reported 2012 financials: operating revenues of US\$7 billion with an operating loss of US\$7 billion partially made up for by US\$5 billion in grants, appropriations, and taxes. The roughly US\$2 billion loss was then divided over total 2012 ridership of 1.7 billion, resulting in a loss of just over US\$1.00 per ride.

most efficient and cost-effective way of getting to work, going shopping, and visiting family and friends. MTR's vertical 'value capture' strategy aimed to enhance the full user experience from transiting to destination, to keep ridership costs low to boost usage, and then to more than make up for that pricing through its real estate plays. As a result, the MTR Corporation has been able to generate enough additional earnings to invest in expansions and upgrades that keep the system immaculate and on time.

While not explicitly a user-centric approach, the underlying principles driving the MTR's success are the same. Its powerful 'value capture' strategy starts with an understanding of what the integrated experience looks like to the user. Along the way, it becomes clear where the greatest premiums can be gained – on real estate rather than ridership. Had a traditional, linear approach been taken, MTR Corporation may have ended up as

another purely 'rail and rail only' company. If that had been the case, half of MTR's revenues today would not exist and its ridership could be 10 to 20 percent lower without strategic, destination real estate pulling people through the network.

Without the real estate and without the additional ridership driven by those strategic destinations, MTR's return on investment could be as low as the transportation sector's average of -9 percent or Regie Autonome des Transports Parisiens' +4 percent. Today, instead, it is actually nearly +8 percent. That is the kind of premium that user-centric approaches can command. In a megaproject, we need experts who bring narrow and deep knowledge to every part of the project. But we also need the layman and his integrating, end-to-end viewpoint. Only then can a complex project of such scale both increase total value and capture the expanded pie.

The image displays three main sections from an MTR presentation:

- Design philosophy:** Includes two photos. The top one shows a busy transit station with the text "People-Centric". The bottom one shows a modern shopping mall with the text "Seamless Integration = Convenience".
- Integrated development:** A 3D architectural rendering of a transit station area. Labels include "Office & Hotel", "Residential", "Residential", "Shopping Complex", and "MTR Station".
- Maximum monetization:** A slide titled "Growing Network, Growing Businesses" featuring a pie chart for "2012 Underlying Profit Contribution" totaling \$2bn. The chart is divided into: Property Rental (22%), Property Development (26%), Railway Operation (24%), Station Commercial (24%), and Outside HK (4%).

Exhibit 3: Screenshots from MTR company presentation illustrating 'Rail + Property'

The Consequence of Even Slight Inconsistencies in User Experience: Dubai Mall’s Original Gold Souq

We can all probably point to examples of lifeless retail centers, monotonous subdivisions, and dead downtowns. These developments usually have users and demand entirely wrong (see #1 common pitfall above). However, even slighter inattentiveness towards user experience can result in significant costs or value foregone. The struggles that Dubai Mall’s original Gold Souq faced in attracting visitors and retail spend is a prime example.

Dubai Mall has been a successful development by many measures. In 2013, the mall attracted 75 million total visitors and generated US\$1,130 in sales per square foot.⁽²⁾ As points of comparison, Las Vegas only drew in 40 million visitors, West Edmonton Mall in Canada (the largest in North America) drew in 28 million, and the industry averages US\$450 in sales per square foot with the tenth most profitable mall globally yielding only slightly more at US\$1,250. In the same way that MTR Corporation made an integrated play around its rail and tracks, Dubai Mall has also created an integrated

proposition around its 1,200 stores. It is a ‘retailtainment’ destination. Designed to be both a city center for local residents (particularly when temperatures outside hit 110°F) and a must-see sight for tourists, the mall is filled with many delights: a towering 2.5-story aquarium, dancing water fountains, sprawling café lounges, and an indoor ice rink. Most important to the various users is the thoughtful mix of retailers and their organization. Locals can run all their errands without colliding into too many tourists, from picking up groceries at Waitrose to visiting the cobbler, health clinic, and telecommunications provider. In a different zone, the vogueish can choose to parade and splurge along Fashion Avenue or peruse other popular brands sourced from around the world. The kids have SEGA Republic. The weary: spa therapy and reflexology. The erudite: Kinokuniya’s book emporium. All of this makes great sense from each individual user’s perspective. Except for the Gold Souq.

Until recent renovations completed in late 2012, the core of Dubai Mall was a maze of gold vendors meant to replicate the look and composition of a traditional Arabian market. This was the Gold Souq, envisioned as homage to the old world but in reality just a nuisance to most visitors. Unlike the rest of the mall, this lair-like space had no dominant anchor store or attraction, and offered little other liveliness. This was no longer retailtainment, just retail. Moreover, it was unclear who the target customer even was. Tourists visited the historic gold souqs in Old Dubai for the authentic experience and serious shoppers visited Gold and Diamond Park for better deals. While the rest of Dubai Mall was designed closely around user experiences and gained more and more foot traffic as a result, the Gold Souq remained stagnant and loss-making since its 2009 opening.

Finally, in late 2012, mall developer Emaar revamped the space to make it more navigable and brought in luxury brand distributor Chalhoub Group to create an anchor in line with the rest of the mall’s retail and entertainment theme. The result was ‘Level Shoe District’, the world’s largest shoe store carrying exclusive looks from over 300 brands and 40 designer boutiques. The concept has shot off, resonating strongly with the mall’s top-spending

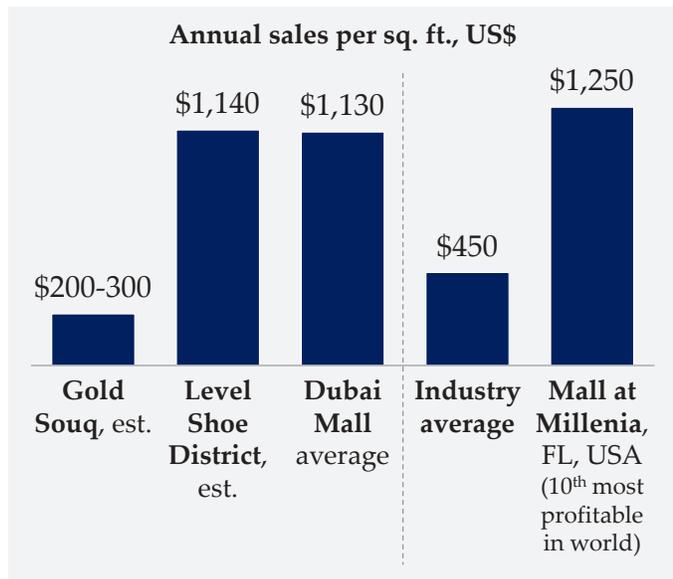


Exhibit 4: Retail Sales Performance

(2) Based on 2012 sales per square foot estimate of \$900 and reported sales increase of 26% in 2013.

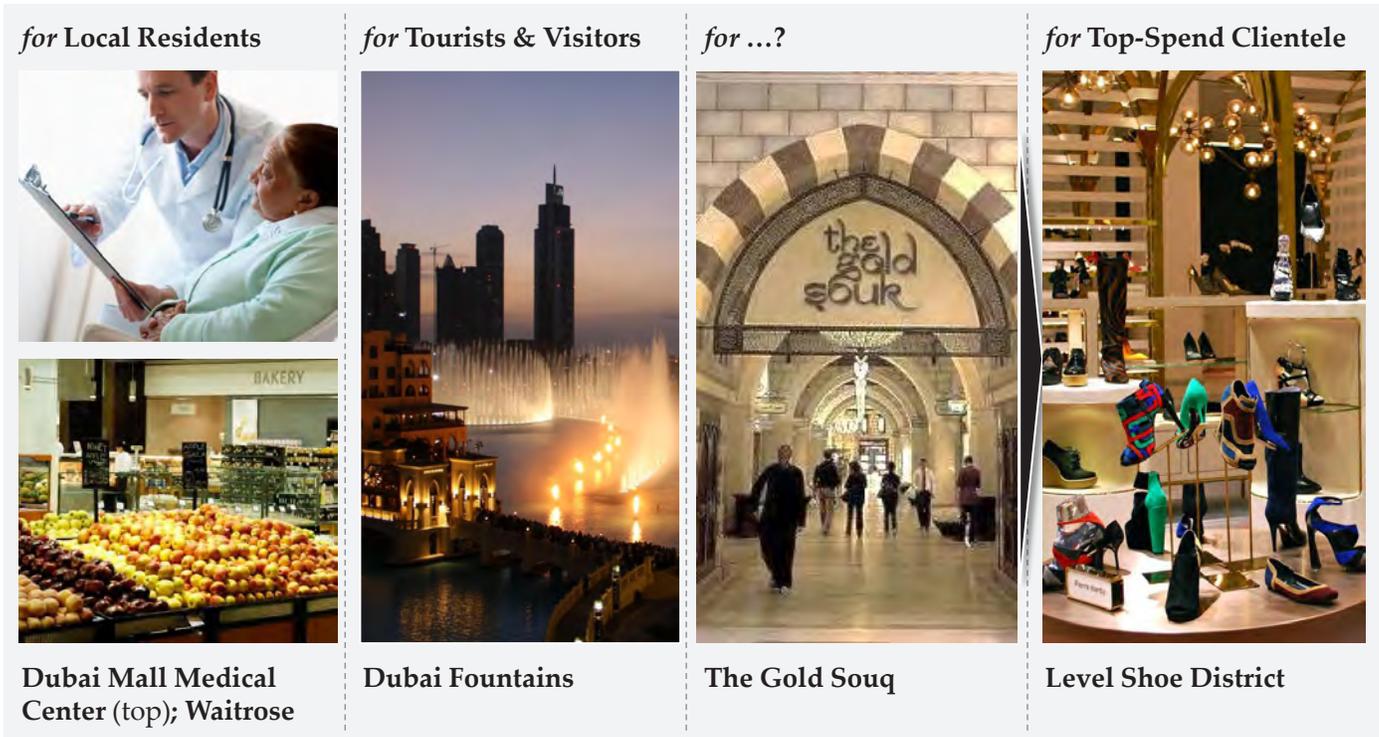


Exhibit 4: Key 'Retailtainment' Attractions at Dubai Mall

patrons and tourists. Instead of the piddling number of sales each day from the Gold Souq, this 96,000 square foot area now sees a much more productive sales volume of over 600 pairs of shoes a day and aims to grow that figure to 1,000 pairs a day. Assuming an average shoe retail price of US\$500, revenues already come out to over US\$109 million per year. That is US\$1,140 in sales per square foot, just above the mall's average. That is how much value was left on the table and lost during the times of the deserted Gold Souq. That is how much understanding customer journeys and applying user-centric design throughout a development can be worth.

Applying User-Centric Thinking

While it requires imaginative and creative fuel, user-centric thinking also requires deeply analytical and fact-based guidance. Otherwise, it risks half-hearted participation, distrust in resulting ideas, and optimism and confirmation biases. The steps below are just a skeletal framework for taking this forward, to be modified and expanded for each case. The main principle is to bring together design thinking and project valuation –

interactions, visualizations, and calculations – in order to keenly consider a megaproject's risks and opportunities.

- 1. Assemble a multidisciplinary committee and communicate value at stake.** A nontraditional approach takes convincing. Given acute sensitivities of financial models to absorption rates and market pricing, a base case valuation with revenue sensitivities showing how much can be lost if users eschew the development can help bring together representatives from the various disciplines for a user-thinking session.
- 2. Mine big data to identify key target segments based on population and value contribution.** Which users should be the focus of the discussions and decisions to be made? Which segments are the largest? Which carry the highest disposable incomes or would be most likely to spend here?
- 3. Understand individuals belonging to those segments.** Resisting presumptions is critical. Interviews, focus groups, field observations, and social media scans can reveal unexpected behaviors and values of target users.

4. Map out the individual user's possible journeys through the development. How would a user experience the development on a weekday? Weekend? Evening? Highlight potential pain points and opportunities for exceeding expectations.

5. Discuss the user journeys, brainstorming all ways of fixing gaps and stretching value creation. Quantify where revenue is generated along this route and where factors are interrelated. What might be the marginal return from each investment in fixing a gap or boosting value?

6. Narrow down to top ideas based on impact on individual users, on marginal returns, and on feasibility. Input final decisions into the financial model and compare against the base case. Reiterate and re-discuss.

7. Present new ideas more compellingly. Combine forces between data analytics and user-centric thinking. How much value is added for the individual user and how does that translate into greater returns for the overall development?

In Conclusion

Neglecting realities on the ground – quite clear from a user's perspective – is too frequently a downside of megaprojects from ghost cities in China to stalled new constructions in the United States. At the very least, thinking through actual user experiences upfront is an easy, inexpensive, and powerful sense check and mechanism for aligning parties. It might even reveal invaluable differentiators that lead to the marked spread between making US\$1.00 profit per ride and losing US\$4.00, between generating US\$0 sales per square foot and over US\$1,000. Particularly as we urbanize with greater hurry and create new communities en masse, let us not forget the importance of on-ground perspective. If we overlook it, then Jack and Jill may risk falling down our hill, with our millions or billions of investment dollars in tow.

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Board Reviews

Philip Wharton

Biography

Philip Wharton oversees all strategic initiatives pertaining to Brookfield Office Properties's 10 million square foot U.S. development pipeline. This includes the company's 5.4 million square foot Manhattan West project on Midtown Manhattan's west side and various redevelopment projects across the country. Mr. Wharton joined Brookfield from AvalonBay Communities, a \$10 billion equity cap real estate investment trust specializing in multifamily projects across the United States. In a senior role at AvalonBay for eight years, Mr. Wharton sourced and executed multifamily projects in the boroughs of New York City and Westchester.

Prior to joining AvalonBay, Mr. Wharton held senior roles at LCOR, Lend Lease and Lincoln Property Company, working extensively on major office and residential projects. Altogether, Mr. Wharton has accrued an impressive 30-year career in real estate development to date. Mr. Wharton holds a BA from Harvard College and an MBA from the Wharton School of Business at the University of Pennsylvania.

The article "Jack and Jill: How individual user experiences can matter so much to mega development returns" makes a number of valid observations about how a broader perspective can help in decision making for large projects. Psychographics, viral marketing, and costs of ownership are all valid approaches to assess projects and inform design and marketing decisions. However, the two specific project examples selected do not directly illustrate these techniques and are therefore not as compelling as they could be in supporting the author's points.

The author describes in general terms how a user-centric approach can benefit a large project, in several ways. Psychographics is one manifestation of this approach. Understanding the target demographic, not just their age and income, but their other needs - such as proximity to schools, daycare, fresh foods, etc. - can help make better design decisions and also provide a realistic assessment of the competitive advantages and disadvantages of a project.

Another important consideration is the potential for positive customer references to dramatically expand the marketing reach in a project's early stages, now commonly referred to as 'viral' marketing. This approach would encourage a developer to focus on - and potentially invest additional funds in - early customer successes, which can carry greater credibility than advertising a project's benefits.

A third way in which the user's perspective can benefit a project is to consider the long-term costs of ownership in addition to upfront costs, when considering the value proposition to a perspective buyer or tenant.

While these are some valid ways that a user perspective can benefit a project, the author selected project examples that do not clearly illustrate these principles at work.

The Hong Kong Mass Transit Railway “MTR” is described as a successful project that has provided good customer service and consistent profits to its owners, as compared with New York’s Metropolitan Transportation Authority “MTA”. While the relative success is no doubt true, it is not apparent that the MTR’s success illustrates the benefits of a user-centric approach. The primary reason for the MTR’s success is that it owned and controlled the retail real estate in addition to the transportation infrastructure. This is a fundamental structural difference from the MTA, but not one due to a user-centric approach per se.

The second project example is the Dubai Mall, specifically the Gold Souq component subsequently replaced by the more successful Level Shoe District. This example is meant to be a counter example to a user-centric approach. But the replacement with a new tenant - the Level Shoe District - shows that an initial poor merchandising decision can be overcome after the project is built. This example illustrates that a better focus on the user - i.e. a better understanding of the target market - would have led to a better store selection. But it is less compelling that it would otherwise be, since the project was able to switch tenants and ended up the largest shoe store in the world with annual revenues exceeding \$100 million.

The “Jack and Jill” article is successful in pointing out several distinct ways that a focus on the user can benefit a development project. The section that describes various ways this approach can be helpful is clear and persuasive. When it turns to specific examples, the article loses some of its force, since the particular issues on which their success and failure depend do not relate directly to the theme of user perspective. Nonetheless, the article raises good issues to consider when making early decisions about large projects that go beyond the simple demographics and financial projections. A more judicious selection of examples would have made the case even more convincing.

James von Klemperer

Biography

James von Klemperer is Design Principal at Kohn Pedersen Fox Associates where he has worked since 1983. He has been responsible for a wide range of program types and scales of projects, from a house to a city. In his work, he follows projects through the full process of design, from conception to completion. Mr. von Klemperer's work includes One Vanderbilt Avenue, a tall building next to Grand Central Terminal in New York, large mixed-use projects in China such as Hang Lung Plaza 66 (Shanghai) and Hug Mao China Central Place (Beijing), and the master plan for New Songdo City in Korea, the first recipient of the Urban Land Institute's Green City Award in 2007.

Mr. von Klemperer has lectured at Harvard, Columbia, Tsinghua, Tongji, Seoul National, and Yonsei Universities, the ESA in Paris, and at Yale, where he taught as Saarinen Visiting Professor. After graduating from Phillips Academy Andover, he received his BA from Harvard College in 1979. In 1980 he was the Charles Henry Fiske Fellow at Trinity College Cambridge. In 1983, he completed his MArch from Princeton, where he is a member of the Executive Committee of the Alumni Council. Mr. von Klemperer serves on the Board of Directors of the Skyscraper Museum in New York.

Of course user experience is at the base of shaping a program for architectural design; the difficulty is defining the user experience because the term can encompass such a broad range of phenomena, even if buildings are defined as entirely made for the user. There is no other purpose of a building than for the user. To say that a building needs to incorporate user experience is, perhaps, a tautology.

At the same time, as the article suggests, there are many different types of user experience - some are short term, some medium, some long term. There is both the immediate local economic advantage to the owner, the profit motive, and the longer-term social benefit of a building, and these two kinds of user benefits are unrelated but sometimes they can be quite different.

In our work, we find that the smart owner is very aware of current trends in the way people shop, live, and work. But they are not overly influenced by short-term trends because they realize that the building they are working on will probably last for 50, if not 150, years.

Also, very important to note are cultural differences. A Hong Kong developer or Chinese developer will probably own a greater proportion of the building and will likely hold on to a building for generations, because they are family companies. An American company, on the other hand, may flip the building after five years.

This all has to do with the way in which we analyze user experience and try

to understand the certain basic anthropological instincts that will survive even when the current trends of shopping, living, and working have changed. These have to do with good space, good modules, good light, good air, reasonably clear circulation, efficiency in the use of materials - and some basic aesthetically pleasing effects, which may be seen as subjective, and yet we seem to know when there is nice proportion and rhythm.

Of course, in such large-scale complex projects we often rely on benchmarks of comparable projects to understand how user patterns can be anticipated because it is very hard to predict something so complex that has never happened before. So choosing precedents as an architect is one way of gauging and interpreting user experience. It is almost a way of critiquing a program. The question is - what examples do you choose? And as you choose examples, it is important to be aware of what succeeds and what does not in those case studies. Understanding that there are also quite specific contextual overlays, certain particularities make shopping different in China than it is in Korea or Great Britain.

For example, how do people travel on Hong Kong escalators - will they go up one more level in one environment than they would in another? Will they use a bridge when no one would do such a thing in some other culture? It is a matter of intelligent research and interpretation to gauge what is going to work.

There are certain kinds of building program in which it is easier to expect and rely on a certain standardization of human behavior and building product. For instance, most offices in the United States, if they have a 45-foot lease span, will accommodate the kind of layouts that users find convenient. In some parts of some cities, that dimension is growing for various reasons; computers screens do not want to be near windows and the way in which people work is changing. In Europe, health laws regulate the lease space in certain office buildings, so that in some countries they can not be more than 6.5 meters. One tracks these things. They are not too difficult to get right, both in the short term and in the long term, in the office sector. Residential design is more complex in the number of variants one encounters in different cultures: in Korea you can not sell an apartment without underfloor heating; in Hong Kong a kitchen must be vented to the exterior; and in Singapore, there are certain requirements for exterior exposure that do not exist elsewhere. But these differences are very complex and they come down to very specific micro-phenomena such as the size of closets and the dimensions of soffits.

The trickiest part of the subject this paper raises - a megaproject program and its adjustment to user needs - is retail, partly because it is very hard to predict what people buy. It is easier to predict where they are going to go to work and where they are going to sleep at night. It is very hard to predict what they are going to do when they shop.

Also, it is a difficult subject because retail is the glue that binds together big megaproject programs. The retail often serves as a signal of the success or failure of the whole project. We could walk through a megaproject of five million square feet and say this project fails because the shops are empty during the day and

are dark at night, not knowing whether the hotel is occupied, the office is fully tenanted, or the apartments are all sold. But the vitality of the retail zone - usually the most trafficked area of the site - is the most visible part of the project and it defines the spirit, whether of liveliness or depressed failure. In this sense, this paper is most interesting when one discusses its subject matter vis-à-vis retail.

Interestingly, it is the part of the brief of a mixed-use program that is often the shortest part. It is the most complicated, but nobody has the words to describe it. For the office building, everything is specified: watts per foot, pounds per meter, core-to-perimeter dimensions, elevator timing statistics, reflectivity of glass, light values, acoustic considerations, etc. Likewise, the hotel has a very lengthy book-long brief for each operator about how they like to separate the service from the customers, how they move food around, and how the rooms work. Residential as well has a rather inflected brief.

Retail, however, is often listed very briefly as a certain amount of area in gross, with the hope of getting a certain amount of area in net, and a certain number of floors. The owner brings a huge amount of intelligence, wisdom and insight into what that program really is but it's not written down. It is more of a brew of experience and instinct that has evolved over time. I have never really found market studies to be very useful in these settings; it is usually experiential knowledge that resides in the hands of the developer. It is not to say a program does not exist and the user issues are not deeply considered - they are just handled in an anecdotal and intuitive way.

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