The design of real estate
A framework for value creation

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Abstract
Design and real estate are inherently intertwined, but this linkage is not easy to dissect or analyze without encountering the obvious danger of oversimplification. Design is often closely associated with an emphasis on form and aesthetics, while real estate has a focus on implementation and process. The interaction between these two fields inevitably creates new perspectives and methods, and sometimes, possible hybrids that bring valuable additions to the existing repertoire of design and development vocabularies, prompting new ways of thinking as we construct a workable, even innovative, urbanism for the future. Despite the differences in focus, real estate and design share certain intrinsic commonalities. Both contribute powerfully to building physical environments that reflect vision and imagination. Both offer a unique array of knowledge, operational skills, and intelligence that must be synthesized to produce a suitable outcome or product, whether a set of drawings or a fully finished building (Wang, 2015: 16).

As the built environment is increasingly becoming a medium that shoulders and reflects issues in wider social and cultural spheres, it is time to deepen the understanding of value creation in real estate by exploring its relationship with design from multifaceted angles and to expand value creation through its engagements with a larger scale of urban environments and a longer time frame beyond the mere time span of completion of a development or project investment. This chapter analyzes value-adding strategies through selected case studies and dissects conceptual overlaps and differentiations between design and real estate. By examining divergent perspectives in evaluating design and value creation, this chapter elucidates the underlying principles of value creation and offers the design of real estate as an effective framework for capturing and operationalizing the complex relationship between design and value creation in real estate.

Introduction
Understanding “the design of real estate” requires a scrutiny of the nature and process of design and real estate. As the two disciplines of design and real estate both possess the plurality of meanings and multilayered interpretations, this process of scrutiny poses a challenge.
Nevertheless, their close linkage with each other and potential significance to the production of the built environment, including the prospect of value creation, provide a promise and imperative for us to encounter this challenge.

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Design is often closely associated with an emphasis on form and aesthetics, while real estate has a focus on implementation and process. The interaction between these two fields inevitably creates new perspectives and methods, and sometimes, also, possible hybrids that bring valuable additions to the existing repertoire of design and development vocabularies, prompting new ways of thinking as we construct a workable, even innovative, urbanism for the future.

(Wang, 2015: 16)

For the following chapter, design refers only to the design of the physical environment that in general includes architectural, urban, and landscape design. For real estate, although conventionally many activities in practice involving the development, investment, maintenance, leasing, financing, and trading of physical buildings are singularly or collectively called real estate, the use of the term real estate here in this context focuses on the development aspects of the practice, which includes creating physical objects and space that form shelters and places for the working, playing, and living of human beings, from non-existence to being.

There are two possible meaningful ways to dissect the complex and multilayered relationship between design and real estate. One is to utilize a process point of view, articulating design as one of the specific actions in real estate, thereby situating real estate as an overarching process, leading and coordinating various players along the steps of building a physical environment. The other approach is to highlight design as a methodology and effective instrument for strategizing the business of real estate.

This chapter focuses on the former, and thus unfolds and interprets the complex relationship between design and real estate through three conceptual frameworks, the sequence of which guides the structure of this chapter and constitutes its three sections. The first section articulates the interrelation between design and real estate with brief case studies illustrating concretized scenarios of value creation by design. The second section dissects conceptual overlaps and differentiations between design and real estate. The third establishes a definition of the design of real estate and elucidates its underlying principles, highlighting why this concept possesses critical importance for both disciplines in the built environment.

**Design in the process of real estate**

From a processual perspective, design is a specific action and critical component of real estate. The role that design plays shifts at different temporal junctures of the real estate process. The generalized division of four stages of design in a project – conceptual design, schematic design (SD), construction drawings (CD), and design and development (DD) – illustrates the various levels of details that design thinking needs to address, with drawings as a communicative means, appropriate to the specific stage of the project. For example, at the inception stage of a real estate project, conceptual design helps to define the physical scale and scope of the project and evaluates programmatic options. At the feasibility stage, a schematic design (the “SD”) forms the basis for estimates of construction cost and is critical for completion of an environmental site assessment (ESA), at least in the US context.
Starting with the task of helping create a vision, design specializes in concretizing this vision through optimization in the composition of the formal languages of architecture, urban design and planning, or landscape design that incorporate possible systematic thinking, including but not limited to aesthetic, cultural, structural, mechanical, and environmental components. Using visual representation, the task of design harnesses creativity to construct a narrative through the detailed organization of functionalities and spatial sequences and searches for a tangible form that provides a physical framework and suitable platform to define the everyday lives of future users. This process ultimately responds to and reflects the ideas and concepts of investors, developers, the public, and the designers themselves.

Throughout this process, collecting relevant information, interpreting the intentions of clients (be they developer, owner, or investor), dissecting users’ behavioral patterns and their needs, and analyzing contexts (e.g., physical, social, cultural) all constitute initial due diligence that brings forth the designer’s potential design propositions. At this initial stage, any related information, analyses, interpretation, imagination, and evaluation could trigger a potential design part and inspire a unique design approach.

Based on due diligence, design creativity aims to frame questions and establish approaches that are unique to the issues at hand and addresses possibilities by transforming conceptual parameters into the concrete and visual languages of architecture, urban design, or landscape design through diagrams, programmatic allocations, architectonic logics, and compositions of various building elements to create form and space so as to resolve the defined problems based on propositions and conditions. In this process, creativity penetrates various steps, filtering as a result of possibilities, finding and adjusting foci, establishing formal approaches, and visualizing the form. These multiple steps are never arranged in a linear fashion; rather, the sequence of steps constantly changes through experimentation, visualization, and prototyping as well as through feedback from clients and the public. It is an iterative process filled with adjustment, redefinition, and revision.

As the design concept is further formalized, design and its visual representation help establish a concrete vision of a building, a complex, a district, or a city, thereby forming a tangible projection of a real estate product. This vision then functions going forward as a visual reference and a concretized foundation for the project and provides a reference for future steps of estimation and projection of financial and economic potentials and operational organization. The developer can then proceed with a detailed establishment of the project, perform feasibility underwriting, estimate a schedule, and evaluate organizational and executional strategies.

Aspects of value creation

The role of design in real estate goes beyond the visual representation of concretizing a vision; it also helps convene and coordinate the imagination of the public and launch future possibilities, thereby being persuasive toward constructing collective wills, and presents projected solutions in forming consensus and provides blueprints for buildings and urban scenarios.

As one of many steps in the implementation of a real estate vision, at a macro level, design aims to foresee and lead the construction and production of space and the built environment that ultimately shapes a society’s behaviors and aspires to its possible future. That process of constructing and transforming the blueprint into reality is real estate. Throughout this process, design carries many value creation possibilities at different temporal or thematic junctures of a project. Real estate professionals increasingly feel the need to understand how design can add value and how evaluating design can be done effectively. The following examples illustrate how design thinking and design maneuvers might be addressed and applied when dealing with some different physical aspects of real estate.
Site

As real estate is location-bound, intelligent design can help overcome the intrinsic constraints of a site. Instead of having a site with reduced usability due to its physical irregularity, a thoughtful design can expand the potentials of the site, thereby helping to optimize existing conditions. Design and design thinking offer many possible applications in dealing with a site, including how to best maximize the view of a site or reduce the wind tunnel impact by strategically orientating the building(s) located on it; how to make decisions on volume, shape, façade, and physical typology of a building based on the urban context of a given site, and how to organize vehicular and pedestrian circulation on the site to minimize impact on users. Managing the spatial and visual complexity of a site provides a premise for value creation via design.

Program composition/usability

For real estate to be valuable, it first and foremost needs to be functional. Although definitions of “usability” vary with perspective, the logic underlying a program’s composition usually guarantees the basic usability of real estate. Program denotes the compositional content, use, and function of buildings in physical design and real estate. Creativity embedded in design can help challenge conventional thinking in program composition while still maintaining usability in real estate. For example, when Gerald Hines decided to include an ice-skating rink in the 600,000-square-foot indoor shopping center of the Houston Galleria in the 1970s, an upscale mixed-use urban development, his ideas were opposed by many on his team, including his architect. However, this unconventional component, as the first ice rink centered inside a mall, functioned as a successful magnet for families within the retail-focused mixed-use development. The rink not only became a significant draw for the entire development, but also helped dramatically increase the visibility of the stores on the mall’s lower level. The rents charged to retailers of the lower level became equivalent to those of fashion retailers at the prime location on the first floor. The annualized gross retail sales at the Houston Galleria reached $200 million in 1981, nine times that of average retail sales of approximately 30,000 malls across the US during the 1980s, in terms of measuring the profitability of mall operation (Feinberg and Meoli, 1991: 426).

One of the more recent cases of adding value through creative programmatic composition is the case of the 1111 Lincoln Road development in Miami Beach. By placing retail stores at the street level, a penthouse apartment and a boutique as well as an event space/viewing platform on the fifth floor and roof deck of a parking structure, the developer Robert Wennett and his architects turned an otherwise banal parking garage with fixed functionality into a vibrant “design-driven, experience-based venue” of mixed-use development that has gained national fame since its completion and brought financial success with a retail rental income of $110 per square foot (Wennett, 2013), almost triple what was expected (i.e., $30 per square foot), all occurring during the economic downturn of 2009. The rent increase generates an additional income stream of $1.6 million on an annual basis.

Infrastructure and public space

Determining how infrastructure and public space can help enhance the value of private development through design creativity is both a long-held and novel proposition. Since its inception, Central Park in New York City has offered sound testimony of what infrastructure and a thoughtful public space can do to real estate values. In 2015, the twenty most expensive
residential real estate transactions in New York City took place on the blocks surrounding Central Park (Marino, 2015). And the highest retail rents in the world – $3,000 per square foot as of the end of 2016 – were along upper Fifth Avenue, south of Central Park (C&W, 2016: 6).

Another significant infrastructure project that has proved to be a catalyst for revitalization of the surrounding neighborhoods in New York City is the High Line project, a 1.45-mile-long landscaped linear park winding through the city like a ribbon, linking small-scale parklands and civic amenities, built on a disused and dilapidated elevated rail line dating from the 1930s. The High Line project has become an engine of economic development, revitalizing property values and civic spirit, even within the trough of a financial crisis. It is a manifestation of how urban transformation can take place by utilizing derelict public infrastructure and how infrastructure and public space created through design formulates value in economic and social realms. Initiated in 2009, by 2014, the High Line had already attracted approximately four million tourist visits per year, with a peak of 60,000 visitors per day during the summer season. It generated total revenue of $32 million in 2013 alone, of which public subsidies accounted for less than 1 percent, with the rest generated through membership fees, donations, and leasing income from event activities. With nearly 30 projects currently under construction and newly built along the High Line, the city estimates it will generate approximately $900 million in tax revenues over 20 years (Tate and Eaton, 2015: 45). In this specific case, the visionary marshaling of public space design to reposition a derelict rail line winding through neighborhoods is as innovative as the landscape design itself on top of the structure.

Façade

Architectural façades are layers that transition the spatial organization of buildings into their exteriors, helping establish identities and the interface of buildings with a larger audience. The choice of a façade goes beyond mere aesthetic considerations; it is also technical and functional. A good example of applying creativity in a façade design that adds value to a project in multifaceted dimensions is the John Lewis department store development located in Leicester, UK, designed by Foreign Office Architects. The façade of the department store is constructed of four panels of glass with a decorative pattern reminiscent of the city’s rich textile heritage and the store’s history of fabric production (Wang, 2014: 21–22). The four layers of glass and its final glazing create a visual perception of a moiré pattern that can be viewed from the exterior and enriches the urban environment while enabling people from the inside to view out, thereby maintaining privacy while allowing the penetration of natural light and the exterior views inside. The combined façade material and its fabric pattern emerge as the single design element that uses a curtain strategy to add visual, contextual, and iconic value to an otherwise typically mute department store façade. It is difficult to quantify to what extent this façade has created value visually, historically, and from the public perceptual recognition, but its thoughtful application of design creativity to the façade alone indisputably meets multiple aspects of the owners’ needs, as well as those of users, the public, and the city.

Construction delivery

The application of design permeates various aspects of the process of real estate, including the choice of construction delivery methods, which is often considered a mundane production aspect of a project. A good case is Carmel Place in New York City, a multi-family housing development that comprises loft-like rental apartments, ranging in size from 260 to 360 square feet. This project optimizes the process of housing delivery as one of the first multi-unit
Manhattan buildings using modular construction that included the fabrication, transportation, and stacking of 65 individual self-supporting steel framed modules, 55 of which serve as residential micro-units with the remaining ten as the building's core. The overall design and production are highly coordinated in that the dimensions of furniture, rental units, and the entire building are based on an 11-foot grid module, including but not limited to, the size of beds, height of windows, interior dimensions of corridors, and stair widths, that in turn were generated from the proportions of nineteenth-century residential brownstones in NYC. Even the entire building’s massing stems from the module, with four 11-foot wide towers being staggered in an east–west orientation. This utilization of modular design and construction delivery enables the entire construction (excluding the foundation and ground floor) to be constructed offsite and then individually “installed” on site within a two-week time frame.

Thus, the overall design, aesthetics, and construction redefine methodologies of housing delivery and reflect a process of optimization through pre-fab construction that reduces on-site construction time and costs, while avoiding noise and disruption to urban neighborhoods while maintaining quality and delivery efficiency and consistency. This case illustrates that construction efficiency and architectural quality are not necessarily at opposite ends of a continuum. In fact, creativity in design is reinforced when the limits and constraints of construction delivery and economic and financial means are considered.

The above cases are a few examples of how creativity is applied in real estate design and development. They are testaments to adding value through design, which can be multivalent in terms of program, form, spatial organization, physical scale, construction delivery and strategy that meet the many physical aspects of real estate.

In addition, the application of design knowledge also permeates the various stages of real estate valuation. Among the three valuation methods for real estate, the sales comparison method, as well as the cost approach, often requires a truthful understanding of the physicality of building elements. It is critical to determine in the process of valuation the extent to which a tangible feature of the comparables can either add to or subtract value from the subject property and the extent to which a building component (whether it a column design, the size of a room, or the spatial sequences of a building) is regarded as functional or trendy, thereby conveying a sensible design and being more costly in the calculation of the replacement cost of the property. A trained eye and learned sensitivity to design play a critical role in valuation of the physical characteristics of a property and lead to better judgment in real estate valuation. Perceiving spatial organization and interior tastes helps in understanding the market’s acceptance of certain design characteristics, and thus, helps gauge value differences among comparables. Finally, gaining insights into the surrounding urban quality of a location and adopting a macro perspective on urban planning can facilitate the detection of potential long-term possibilities for value appreciation of a site.

In real estate development, design is embodied through final products that are the tangible representation of accumulated wealth via income generation and/or price appreciation that together are greater than the cost of efforts applied during the process of assembling land, obtaining permits, and designing and constructing building(s) with inputs of labor and material. Reducing costs, enhancing efficiency while maintaining quality, creating positive public perception, attracting the market, and thus increasing the income stream can all help create monetary value for owners, investors, and developers. In doing so, design, as the previous cases indicate, creates unique experiences for users. This uniqueness can occur through spatial composition, such as by combining a garage with a viewing platform functioning as a public gathering space in the above case of 1111 Lincoln Road in Miami Beach. Design creativity can
also relate to an innovative and efficient construction method that saves time, thereby reducing the budget without compromising design quality. It can also occur at the urban scale, creating a public amenity by taking advantage of an existing infrastructure to sequentially increase property values of the surroundings. Adding value can also mean more than just establishing a brand for a building; it can place an entire city on the global map, such as with the Guggenheim Museum in Bilbao and Burj Khalifa in Dubai. In sum, the possibilities for value creation by design are as endless as the imagination of a creative mind with a solid grip on reality, a sensitivity to demand, and knowledge of execution.

Value creation in design and real estate

In real estate terms, value is reflected through market pricing and rental yields from buildings being built, purchased, or disposed of, and rent collected. As financial return is taken as an objective measurement of real estate performance, value is calculated and forecast through mathematical formulas and expressed with spreadsheets as a medium. Real estate is invested and traded based on such concepts of value revealed through fixed industry terminologies such as net present value (NPV), equity multiples, and internal rate of return (IRR).

There are four categories of research approach for measuring real estate values in relationship to design. The first approach utilizes the methodology, borrowed from social sciences, of surveys, interviews, and descriptive categorizations via presentations of visual images. By asking the target audience to review two-dimensional images or by visually comparing photos of a built environment and ranking the order of these images from “most liked” to “least liked” or with any other specified categories, a preferred design image is selected (Meinig, 1976; Steinitz, 1995). This approach links a descriptive design preference to an implicit value of real estate. It is often used to elicit public opinions on design and help achieve public consensus. Its descriptive nature is based on subjective experiences and opinions of design rather than on an analytical evaluation of value created by design. The second approach to exploring the relationship between design and real estate measures the effectiveness of the value-adding design through quantitative economic modeling. Often the focus is to gauge the extent to which selected amenities of a building or an urban environment contribute to the monetary value of real estate. In this situation, the selected amenities are often treated as variables of hedonic modeling, which involves a large collection of data and mathematical economic calculation. The measured relationship between value and the tested amenities (variables) is numerically presented, providing an objective analysis with regard to the linkage between the two (Vandell and Lane 1989; Asabere et al. 1989; Kain and Quigley 1970; Kaufman and Norman 2006; Guttery, 2002; Matthews and Turnbull, 2007). However, this method has been limited to amenity-focused variables, and the design characteristics tested in this approach are often either urban in nature, such as urban parks, schools, neighborhood convenience stores nearby, or common amenity-like architectural features such as balconies, numbers of bedrooms or bay windows. In these cases, amenities often do not represent the creative design thinking in dealing with visual languages and spatial compositions that are utilized by professional designers with an aim toward spatial uniqueness and the aesthetic characteristics of design. Instead, resultant design features are compartmentalized and established as independent variables of a mathematical formula, rather than as connected physical features based on coherent design thinking.

The third approach of delving deeply into value-added design is through Michael Porter’s classic value chain model. This approach helps to dissect the multiple steps and activities involved in the real estate development process and identify the productive contributions of
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each step in maximizing the final and total value of a set of assets (Porter, 2008). This analytical approach shifts the emphasis of understanding real estate product from what things look like to how they work and the interconnection of the various activities.

The fourth and often used approach in delineating and understanding the tangible value created by design involves analytical descriptions of case studies (Pawlicka, 2014; Tiesdell and Adams, 2011). As design is specific to context, good design customization, based on situated conditions and users’ needs, highlights the value created by design in qualitative terms, which can be captured through case studies, and is therefore less generic. This approach emphasizes design tacit by expedient pragmatism in situating design thinking in its process and a suitable context. Nevertheless, this method often achieves empirical richness at the cost of a case-by-case evidence base.

Each of the four aforementioned existing approaches in the literature addresses the value creation of real estate by design, where the interrelationship between design and real estate is determined through visual preference and consensus, statistical modeling, generic value chain analysis, or analytical case studies. As real estate and design are increasingly produced within a complex set of contexts and are contingent upon various social, cultural, regulatory, and financial conditions, their impacts on human lives through the embodiments of the physical environment are increasingly becoming multilayered. It is time to widen the meaning of real estate by expanding it from a mere production of the physicality of the built environment to a potent platform shouldering the economic and spatial logics of city making and social responsibilities.

As design and real estate can each be viewed as products and processes of production, they share overlaps and differences. While the exploration below bears generalization, it is an attempt to provide possible conceptualizations of the evident linkages between the two fields.

**Experiential construct**

The creation of a unique experience through design has increasingly become the goal of real estate. It is no longer about the same typology of big-box shopping malls and repetitive cubic workspaces. Individualized, flexible, and effective spaces that foster creativity and differentiation are increasingly standard measurements of the quality of environment that we strive for through real estate development. Just as Boatwright and Cagan vividly described:

> while we may look at a picture for seconds or minutes, experience a movie that lasts an hour or two, or read a novel over a few days, we may inhabit buildings for months, years, or lifetimes. Our individual experiences of architecture are complex, and are often constructed over extended periods of time, so our emotional responses are correspondingly diverse, multilayered, and evolving.

*(Boatwright and Cagan, 2010: 114–117)*

The multifarious and long time span of possible emotional associations between human beings and buildings highlight designers’ and developers’ overlapping need to attend to experiential constructs when dealing with the environment through a physical framework of spaces and the organization of everyday functions. During this process, design is often closely associated with an emphasis on form and aesthetic intention, while real estate has a focus on vision, implementation, and sensitivity to market dynamics.

As real estate is capital intensive and is in essence an operation that connects physical product with capital investment, the real estate process is driven by economic logic and business rationale. The quest for efficiency and desire for risk reduction often leads to the continuing
application of repeated building types that have tested results from the market. Meanwhile, in comparison, richness in experience and unpredictability is often one of the many aims for a successful designer to achieve, especially in urban and landscape design and in public building design. In this sense, the logic of real estate is contradictory to the pursuit of a unique experience; and it explains the singular and monotonous office parks and suburban shopping dispersed across the landscape.

Today, however, thanks to technological advancements, “what was once exotic is now commonplace” (Postrel, 2003: 47). Thus, it is no longer the products or services being celebrated by the market, but rather the experience that comes with the product or service that is consumed. Under this premise, real estate increasingly must push the boundaries of its “product” – building forms and spatial quality – by utilizing creative design as a strategy. Design helps construct a narrative of the experience. As Ellen Lupton put it, “part of what design does is sensual storytelling, emotionally storytelling” (Green, 2016: ST10).

**Complexity and constraints**

Both design and real estate are procedural, embodying organizational complexities that involve multiple players and engage multidisciplinary knowledge domains. “In design, one needs to deal with the structural, environmental, and acoustical aspects among others, of a building, landscape, or city, while in real estate development one must cope with design, financing, construction, environmental concerns, and much more” (Wang, 2015: 16). The sequences of the involved tasks of both fields are never linear, and neither the relationship among the multiple tasks of design nor that of real estate necessarily follows a clear temporal progression. A decision in one particular knowledge domain in the design and real estate process often impacts other related tasks and even likely becomes a constraint. For example, a change in the air duct path of a new construction may lead to the relocation of a beam, and, consequently, may alter the spatial effects of the design intentions for a room.

**Risk and return**

Since unpredictability is embedded in the implementation and realization of most ideas, visions, and products and can be further reinforced by market frictions, the design and real estate processes intrinsically bear risk. Due to the different nature of their operations, the design and real estate processes as well as the consequential products encounter starkly different types and levels of risk. These lead to contrasting perceptions and attitudes among designers and developers toward risk.

Modern design (especially the Modern Movement of architecture) advocates creativity and challenges the status quo. While design aims to envision the future, real estate endeavors to turn the future into reality and, thus, it is about buildability. This fundamental difference defines the respective risk and return profiles of design and real estate. Good designers strive to be distinctive and provocative by taking risks. In stark contrast, risk aversion is an imbedded tenet of real estate. As real estate is a capital-intensive business and investors’ and developers’ capital is at stake upfront, risk is carefully measured and managed and financial return becomes a quantitative gauge of the effectiveness of risk management. Therefore, building upon an established and tested building type that has been approved by the market is often regarded as one measurement for significant risk reduction.

Since risk and reward are correlated based on economic principles of efficient market theory, the gap between financial rewards of design as a business venture versus those of real estate has
recently increased exponentially. The financial rewards of design are based on labor and materials, with either a fixed rate for the estimated hours of time input by the designer or a meager percentage of the project’s construction cost. Rewards for real estate development are established based on the investment of contributed capital by the developer as equity or “sweat equity.” As evinced in the historical data of Piketty’s book *Capital in the Twenty-First Century*, investment through capital has proven to be significantly more effective in wealth accumulation than contribution of labor and time, which is proved to be a foundational mechanism of the capitalist society (Piketty, 2014).

With the dwindling total public investments across the globe, the real estate of private investment is increasingly becoming a medium of city building. By taking more risks with capital through market mechanisms, private real estate developers and investors possess more decision-making power over the physical and spatial constructs of the built environment. Meanwhile, in the context of the dominating power of capital, designers are withdrawing from their previous decision-making position, or, at the very least, are unwillingly to compromise it and, thus, become sidelined.

### The design of real estate: A framework in value creation

The *design of real estate* is a relatively novel concept that originated as a title for a real estate course focusing on the interrelationship between design and real estate development and investment at the Harvard University Graduate School of Design. How to incorporate design thinking in the real estate process and how to better understand real estate through the lens of design have increasingly gained in popularity within the professions of the built environment and with the general public. The interaction between these two fields has the potential to create new perspectives and innovative methods. Importantly, hybrids may bring valuable additions to the existing repertoire of design and development vocabularies, prompting new ways of thinking as we construct a workable, even innovative, urbanism for the future (Wang, 2015).

The proposition of the design of real estate is more of an attitude, method, and intellectual framework that intends to guide the way we conceptualize and operationalize real estate. In many ways, this can be viewed as a response to the increasing critique of real estate operations that pursue the singular goal of profit maximization and short-term political and economic advantages without adequate consideration of cultural, social, and environmental impacts. This proposition is also a prompt call for action to provocatively denounce monotonous development prototypes across the landscape and to proactively mediate the disciplinary separation between real estate and design in education. As built environments are increasingly becoming a medium that shoulders and reflects issues in wider social and cultural spheres, it is time to deepen the understanding of value creation in real estate by exploring its relationship with design from multifaceted angles. In this way, it becomes possible to expand value creation in real estate through its engagements with a larger scale of urban environments and a longer time frame beyond the mere time span of completion of a development or project investment.

With their possible leadership in the initiation and production of the built environment, entrepreneurial spirits in the constant search for opportunities, and potential cross-disciplinary knowledge domain in nature, real estate developers and investors have the potential to organize and construct “a more complex form of creativity” (Kamin, 2015: 30), one that diffuses the design-driven culture in the real estate process and in its business decision mechanism.

Characteristically, real estate is rational and logic. Real estate’s engagement with capital requires the decision process to be goal-oriented. Such a process requires efficiency and judgment of the market that is sober, data-oriented, and analytical. The pro forma itself establishes economic logic
in the foundation of real estate finance and development. However, with the increasing scarcity of land resources, awareness of ecological needs, and unprecedented mobility, real estate requires a more suitable way of practice and a profound change in implementation. With this context, the proposition of the design of real estate provides a possible and promising future.

**Emotional narrative**

The underlying principle of the design of real estate is to expand the scope of real estate into three aspects. First, it is to understand that real estate is developed using a physical framework embodying an emotional narrative through specificities of design language, spatial construct, and material sensibility. The developed products need to tell a story. Establishing an emotional connection and empathy between humans and the built environment is increasingly critical for real estate development. Good real estate projects create a balance between the rational and the emotional — rational in terms of how the development process maximizes efficiency while meeting the needs of functionality for users and economics for owners, and emotional in terms of speaking to humans in a vivid and thoughtful manner and helping construct an experiential narrative. An effective real estate project needs to please the senses and provide a framework for imagination as well as mind exploration that requires design sensitivity and creativity in the development process.

**Critical thinking and cultural production**

The second principle of the design of real estate is to approach real estate projects with critical thinking; that is, to examine real estate development from multifaceted dimensions, and with calm reasoning and possible humanistic scrutiny beyond simply the financial measurement of quantitative returns. This approach requires viewing real estate discipline through a lens of cultural production that has hitherto been lacking in the real estate arena. Real estate is not only a means of providing concrete and quotidian necessities of everyday life and a medium from wealth accumulation through investment in and trading of an asset, but also a physical framework in the context of people’s lives, behaviors, and thus, thoughts. This implies imbued cultural production and therefore invites scrutiny and analysis by critical thinking to view the trends, process, and production in the context of history and culture, with the capacity of abstract insight and theorization.

**Awareness of urban scale and context**

In the process of real estate development and investment, the focus on financial returns has rendered real estate products to be viewed as autonomous objects, often separated from their surrounding urban environments. The concept of the design of real estate calls for the active mindset of framing real estate in an urban context and understanding how the urban environment and physical characteristics can help increase the value of real estate that applies to a longer term and generates direct or indirect benefits that go beyond the mere stakeholders of individual projects alone. The example of the High Line project in NYC is a good example of this perspective. That being said, as the characteristics of urban design and quality of urban life are difficult to measure in quantitative manners and then translate to a line on a spreadsheet, there exists a dilemma for developers and investors in identifying investment viability. To this point, it would be practical and tactical to introduce public and private joint ventures or mechanisms that can facilitate the consideration of the public realm of cities by the private sector.
Measures to combine design thinking and economic logic can be incorporated into various stages of the development process. The criticality of urban contexts entails one key method in creating design value through the “value-grading” method in allocating the land use of a site. When one encounters a site, a useful value-grading process can ensure maximization of the value for various parts of a site through analysis of the immediate urban surroundings. This is crucial in determining which orientation and component of the site have the highest economic value for a particular use that can offer amenities, uniqueness, and overall better functionality. Then the part of the site that can be secondarily suitable for a use that possesses potential market premium, although less than the highest value, can be determined. This method of matching the locational urban characteristics with a specific programmatic use should continue until the least valuable part of the site is matched with a selected use. Based on this logic, urban design framework is key, along with inherent economic logic, in determining the allocation of functions on the site. This method will help create active frontages of retail use along major thoroughfares to enhance foot traffic, for example. It could locate a residential area next to a scenic view in order to increase rent premiums or sales price, thereby creating a pleasant environment for the community. It might also help place corporate signage on top of an office building along a highway as a visible advertisement. In reality, there are numerous possible alternatives for designing a site with allocated programmatic uses. However, it is critical to first value-grade the site based on the understanding of urban contexts and potential market premiums defined by the site’s physical characteristics.

Value framework

Based on the above principles established with the concept of the design of real estate, the following three frameworks are further positioned to provide guidance of specific actions in addressing the linkage between design and real estate. First, it is crucial to highlight the role of design in the process of real estate development and investment via the focuses of value creation, innovation, and design thinking in general (Table 25.1). Second, in addressing the design of real estate, it is critical to highlight the linkage between real estate and city marking (Table 25.2). Third, with the design of real estate framework, it is important to establish a position in linking real estate with social responsibilities and cultural production that can be addressed through the inclusion of mutual impacts (Table 25.3).

Summary

In short, the design of real estate is a timely proposition. This overall chapter initiates a discussion of this proposition by addressing three aspects embedded within its multi-layered conceptualization. The first aspect involves analyzing how design thinking can be incorporated into various temporal stages and physical dimensions of real estate development and investment process. The selected case studies included in the chapter highlight the idea that value-adding possibilities in real estate can be multivalent and have numerous possibilities, including but not limited to qualitative and quantitative interpretations in the long- and short-terms. The possibilities for value creation by design are as endless as the imagination of a creative mind, with a solid grip on reality, a sensitivity to market demand, and knowledge of execution. In addition, this chapter addresses current research approaches utilized in the literature to dissect the relationship between design and real estate and help elucidate the overlaps and differentiations of the two to provide a perspective for future possible development on the convergence and divergence between design and real estate. Lastly, based on the discussion of the applications and research possibilities
of linking real estate and design, the concept of the design of real estate is proposed. In simple terms, this concept addresses the design dimension of real estate. However, in essence, this new proposition intends to establish a framework that expands the urban, cultural, and social scopes of real estate and project an approach for how we should think of, practice, and teach real estate through multiple lenses that help construct real estate as a more stable and long-lasting practice and, more importantly, a profound knowledge domain and critical academic discipline of building communities and cities.

**Table 25.1 Key components of real estate and a framework for guiding value creation through design and design thinking**

<table>
<thead>
<tr>
<th>Key components of real estate</th>
<th>A framework for guiding value creation through design and design thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product anatomy</td>
<td>Dissect design products with a real estate perspective to comprehend the anatomy of complex buildings and mixed-use development, including programmatic composition, density, ecosystems, and infrastructure.</td>
</tr>
<tr>
<td>Product differentiation</td>
<td>Position design with an understanding of development processes and financing structures to improve efficiencies, economic returns, time to market, as well as trademarks and differentiation of design services.</td>
</tr>
<tr>
<td>Valuation strategy</td>
<td>Establish familiarity with valuation techniques of real estate to emphasize design alternatives and to highlight the impact of design on capital values and financing possibilities.</td>
</tr>
<tr>
<td>Performance impact</td>
<td>Integrate design with real estate products through the application of detailed strategies of building form and typology to improve the relevance, functionality, productivity, sustainability, and aesthetics of real estate, as well as to strengthen the branding of real estate products through design.</td>
</tr>
<tr>
<td>Implementation process</td>
<td>Understand and harness design thinking, design theory, and the creative process through a multidisciplinary approach to address competing interests and special constituencies of real estate.</td>
</tr>
</tbody>
</table>

**Table 25.2 Key components of city making and a framework for guiding value creation through the linkage between real estate and city making**

<table>
<thead>
<tr>
<th>Key components of city making</th>
<th>A framework for guiding value creation through the linkage between real estate and city making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban vitality</td>
<td>Realize real estate development and investment as a driver of urbanism and urban vitality. Dissect urban characteristics and place making through the lens of real estate operations.</td>
</tr>
<tr>
<td>Urban infrastructure</td>
<td>Understand real estate in relation to urban systems (including transportation and natural resource planning).</td>
</tr>
<tr>
<td>Urban history and formation</td>
<td>Consider the implications of urban history and formation for the real estate process and its consequent impacts.</td>
</tr>
<tr>
<td>Urban players</td>
<td>Understand the implications of urban governance structure and urban politics among real estate players.</td>
</tr>
</tbody>
</table>
### Table 25.3 Key components of social responsibilities and a framework for guiding value creation through the linkage between real estate and social responsibilities

<table>
<thead>
<tr>
<th>Key components of social responsibilities</th>
<th>A framework for guiding value creation through the linkage between real estate and social responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social change</td>
<td>Address real estate in relation to urban growth and social change.</td>
</tr>
<tr>
<td>Social equality</td>
<td>Contribute to affordability and social equality through specific actions of housing and community development.</td>
</tr>
<tr>
<td>Environmental ecology</td>
<td>Construct a conceptual framework and practice specifics about environmental real estate to address the needs of ecological urbanism.</td>
</tr>
</tbody>
</table>

### References


Wang

International Council of Shopping Centers (ICSC), pp. 21–22.