Creative Design Management

Articles I & II----Published in ULI Urban Land Magazine as:
"Understanding Motivations and The Creative Process"

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The following is the first of a three-part series originally published in ULI Urban Land Magazine that illustrates a process by which developers can better influence the design outcomes of their projects.

Good design comes from a creative process that involves a seemingly chaotic mix of memory fragments, images, frenetic and inarticulate mental activity, non-rational emotions, super-rational aesthetic theorems, and the designer's ego needs. Somehow, fresh new designs emerge from this conceptual turbulence.

Recent discoveries in fractal geometry and high-resolution electron microscopy have shown that layers and layers of random physical chaos conceal further layers of organic order. Similarly, close inspection of the turbulence of the creative frenzy reveals its inherent order, an order that can be guided and directed.

As clients of designers, developers can selectively intervene in the private creative process to influence designers' methodology and maximize their own design goals for projects—without stifling the designers' creativity.

The stakes are high. Architecture clearly transcends simple shelter. Its sculptural forms, surfaces, and three-dimensional spaces can evoke deeply rooted emotions. Architecture is the most expensive sculptural expression of the human experience. Most seasoned designers are motivated by an even larger, more poetic concept of architecture, as espoused by architect Christopher Wren (1632–1723): "Architecture is aimed at Eternity."

In the past, the state, the church, or royalty sponsored major architectural efforts. Today, both individual and institutional real estate developers are the prime producers of the architectural product. Thus, today's developers have a special responsibility and caretaking role toward the built environment.

A developer authorizes and sponsors a designer's search for new visual formulas and provides the marketing focus, defining the project's intended audience as the designer cannot or will not do. The developer must build today for future generations, amidst the aesthetic texture and weave of the past. The special obligation of the developer is to sponsor memorable structures whose designs will remain cherished by their users, and whose presence will enhance a neighbor-hood's or a city's overall quality of life.

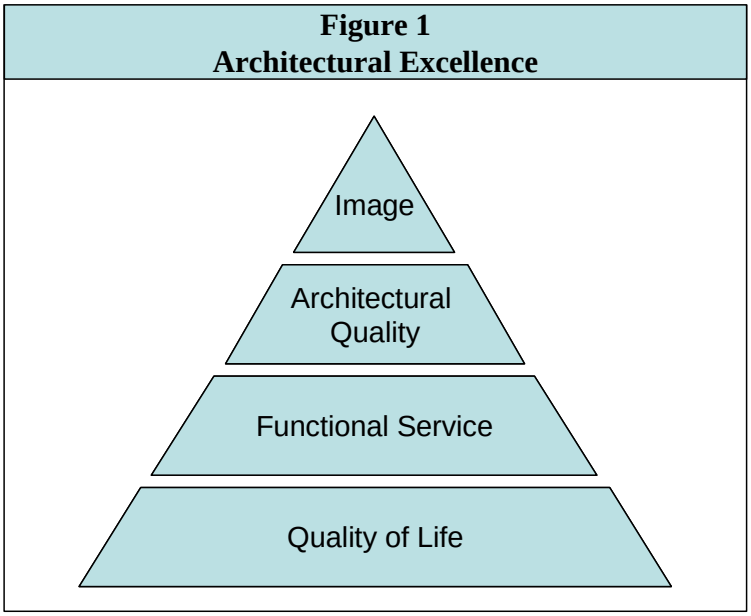
To fulfill this special responsibility, the developer must understand the psychology of the architectural design process, most importantly the designer's drive for outstanding artistic

achievement. Once this motivation is understood, the developer can better apply deft negotiation techniques to manage design creatively.

Architectural Excellence

Of what is architectural excellence made? One may see it as a pyramid whose visible top is its *image*—the positive impression the building makes on both its public audience and its private users—which is, in turn, the product of its underlying building blocks.

Figure 1
Architectural Excellence



The usual goal in development marketing is to promote a project's *Image*, the mere tip of a pyramid of Architectural Excellence. In designing, the goal should be to build a much broader support base for Architectural Excellence. Over time, developments that are so designed clearly hold their real estate value better than ordinary projects.

The second layer of support is *Architectural Quality*. This layer of the pyramid is composed of materials, forms, and design scale, elements that combine to evoke in the audience/user a feeling of tangible benefit and to distinguish the building from the ordinary.

The next layer of support for the pyramid of excellence is *Functional Service*, the adequate housing of intended operations and the superior performance of the structure in the eyes of its users. And the last and broadest-based support for Architectural Excellence is the project's overall contribution to the *Quality of Life*: a memorable, supportive, aesthetically pleasing and evocative, secure, and wholesome place to work, play, or live.

Differing Motivations

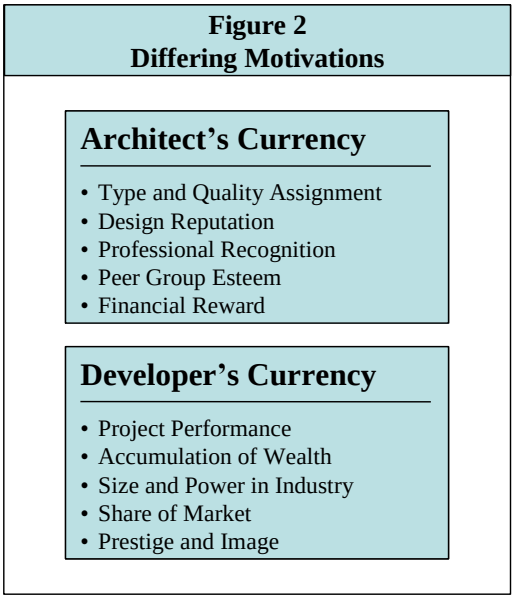
Developers and architects differ considerably in their approaches toward the projects they undertake and in their basic motivations (see Figure 2). Developers are like film producers, managing a host of interrelated logistic, financial, and production tasks and taking ultimate responsibility for the appearance of the product and its commercial success.

As producers, developers are strongly motivated to improve the financial performance of their projects, to boost their market share, to accumulate wealth, to achieve size and power in the industry (for the peer recognition they bring), and to enhance the image their enterprises create (for the respect and prestige a good image brings). These motivations are the currency of developers.

The transaction-driven developer moves from episode to episode in a seven-step development process: site acquisition, legal approval, project financing, building design, leasing, construction, and occupancy. The design process is but one episode. The developer sees design as a means to a financial end, not as the end itself. The typically articulate, highly success-oriented, aggressively egoistic, risk-taking, time-conscious developer has little appetite for the fuzzy, inarticulate design process, with its arcane language and protracted discussions of aesthetics.

Designers, on the other hand, view the design as the end in it-self. They are motivated mainly by the idea of professional achievement and recognition (from which will flow financial rewards) . Unrelenting peer review in this field drives design practitioners constantly to search out new concepts, to wage war against aesthetic obsolescence.

Figure 2
Differing Motivations



The average architectural graduate has over seven years of university training, schooling that is typically focused exclusively on the design craft of architecture. The teaching of professional management skills or of technical skills in structural and building systems is secondary. Design achievement is the principal goal: the world-class "cult" de-signer is the preeminent role model.

Despite the years of training, the threshold salary of a newly trained architect falls well below that of other professionals. Even experienced technical staff, whose skills become quite valued in the high-stakes architectural production process, earn low salaries

compared with skilled paraprofessionals in the finance or service industries, like CPAs and lending officers. Lower pay strengthens designers' allegiance to the craft of architecture, as psychic re-wards and pride in the profession fill in the salary gap.

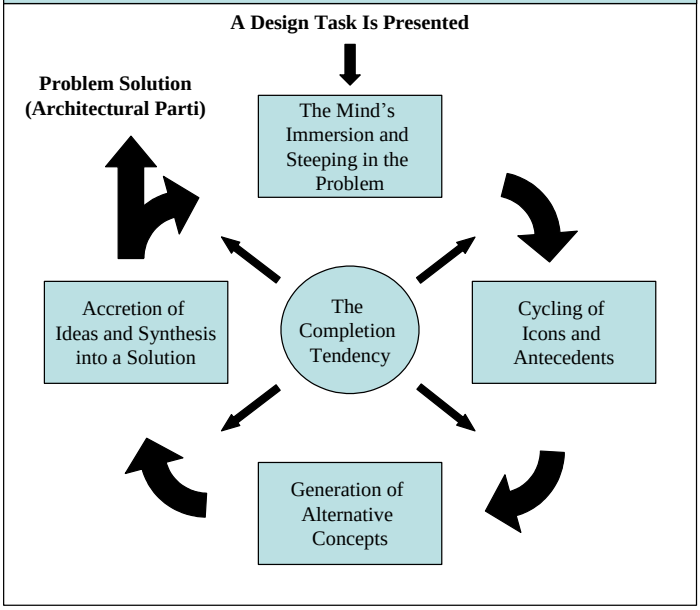
Valued highly in the currency of designers is design reputation and its tangible evidence, the exposure of their projects in professional journals and their inclusion on the university lecture circuit. Also valued are building assignments that offer the chance to display their skills visually, both in the form of finished buildings and of design drawings, known as "paper architecture." Designers also cherish the creative lifestyle their profession affords—travel to architectural shrines around the world, visits to special exhibitions and performing arts productions, and access to intellectual circles. They often use their participation in cultural and intellectual events to gauge contemporary social trends and provide theoretical support for their new ideas.

Psychological Processes in Creativity

Architectural design is an ancient and honored craft, an intellectual art as well as a science of construction technology and environmental systems. Notable architectural achievement requires a talent that is enabled and enriched over years of dedicated professional effort. The design process is fraught with intellectual, emotional, and technical constraints. To the architect, the process is overlaid with a webbing of real logistic barriers and artistic stumbling blocks: deadlines, user needs, and development budgets.

Architectural design may seem to emerge from a collaborative process, but the actual act of design is a private and cerebral one. The creative process—the intensely private search for a viable aesthetic or scientific solution—is characterized by five major elements (see Figure 3):

Figure 3
Components of the Creative Process



Steeping the Mind in the Task. The creative person immerses him or herself in the project, purposely excluding all other activities. This pervasive and energetic concentration enlists the subconscious mind in the solution of the problem. "Persisting preparedness" is the term for the well-documented psychological phenomenon of concentrated physical or mental effort inducing the subconscious solving of problems.

Bringing Icons and Antecedents to Bear. Successful designers have typically applied their talents, energy, and ambition to rise through the ranks of several architectural firms. By the time they have gained the status of a cult designer, a one-of-a-kind craftsman with personalized and facile design skills, they will have been heavily influenced by a sequence of mentors, as well as by a series of variously searing learning experiences. They will have abstracted from their experiences a number of personal architectural "icons"—organizing principles or philosophies for design. Designers' icons—for example, the expressive use of structural elements, or the segregation and articulation of a building's various functions—inevitably will find their way into visible form in the designers' solution.

Similarly, designers maintain a mental list of historical antecedents—cherished places, spaces, or building fragments. This list is drawn from what the designers have seen or experienced in their youth and travels, and from recognized jewels of Western, Asian, or primitive architecture. Collectively, antecedents make up the profession's shared knowledge of historical references and design concepts, the designers' hidden treasury. In thinking about a new project, designers will review their mental cache of glories from the past, consciously and subconsciously culling prototypes, spatial relationships, earlier styles, and relevant sculptural forms.

Trusting the "Completion Tendency". Because creativity involves the deliberate joining of subconscious mental activity with rational thought, creative people trust their subconscious minds to continue working on a problem. Indeed, their minds will complete the needed solutions, even after they have consciously moved on to other work. This propensity of the subconscious to continue working on a task in which the mind has been steeped is called the "completion tendency."

DRAWINGS ARE NOT ARCHITECTURE

Representing design concepts other than with the completed architecture, the concept's "primary" representation, is difficult. "Secondary" representations—sketches, models, two-dimensional plans—are fundamentally limited in what they can express. They cannot, for example, capture the kinetic dimension, the sense of movement through space. The haptic senses—our reactions to touch, temperature, pressure—expand our sense of architecture beyond the visual, but graphic representations cannot tell us what kinds of haptic feelings the project will evoke in those experiencing it.

Surface texture and overall context have much to do with human reactions to architecture, but they cannot be communicated well in graphics. When one visits Notre Dame de Paris, one realizes that much of its architectural effect comes from the contrast between the structure and the medieval streets surrounding it; from its imposing presence in the cathedral's plaza; from its overall setting on the Île de la Cité; and from the perception of the sky plane into which the spiky Gothic spires thrust. The Notre Dame experience is enormously different from its representation in photographs or drawings.

Thus, drawings are not architecture. Drawings and models are at best prophetic (predictions of what the architecture might become) and seductive (pretty, stylized views). The rich reality of what the building actually will be always fights a losing battle to emerge from its representation.

Elevations, sections, and axonometrics are perfect examples of representations of reality in an abstract form. No building has ever been seen as a true elevation. Details, window depths, and roof lines always change the perspective.

Perspective drawings, especially renderings, are used to establish a mood. They are often executed by professional artists skilled at generating favorable illusions. It is very important for developers to resist the seduction of architectural drawings, which are often means of fostering a designer's polemical point of view.
Developers are visually untrained. All the more reason why they must try to acquire some skill at interpreting secondary representations so they can assure the consonance of a design with their development objectives. Following certain guidelines will help developers to understand secondary representations:

- Ask for site photo essays that show adjacent uses and major scale relationships. Examine the relationship of the project's scale to its setting by comparing ground-level perspective drawings with photographs taken from the same position.
- Ask that people be drawn to scale on all sections, elevations, and floor plans. The

sizes of rooms and spaces will be easier to visualize.

- Limit the use of architectural models to eye-level views, the surest simulations of the eventual user's perceptions. Helicopter views are important only for pilots.
- Use inexpensive study models throughout the design process, from massing studies of bulk and building relationships, to sectional studies of interior spaces.
- Ask for samples of finish materials early. Do not reject any materials offhand, but learn about the options and begin to consider the costs.

Solutions will spring invariably from the patient, concentrated immergence in the design problem. "Forgotten" tasks will automatically be recalled. Once designers have visualized a concept, they will frequently shelve it in the mind to search for alternatives, fully confident that the subconscious function—the completion tendency will still be considering possible solutions.

Generating Alternatives. The creative person purposefully generates alternative concepts. Architectural designers test various forms, materials, and spatial design ideas. The testing process is literal, easily trackable through sketches and diagrams. But at this point, the drawings shown to the developer do not necessarily represent a final decision, as the widest possible set of alternatives is arrayed.

Building Ideas into a Synthesis. The accretion of ideas in the creative person's mind slowly builds into a new concept. Many concepts can be identified as pieces of old ideas, visual fragments from antecedents synthesized into an original whole. As author Arthur Koestler said, a dramatic new concept—arising through the so-called "eureka" phenomenon—is really a collision of several logical frames of reference. After colliding, the latter join to form a new reality, composed of reconfigured parts of past concepts. Synthesis calls for an open thought process, a process that permits and even encourages the free juxtaposition of theories, shapes, and uses, in the hope that the designer will see in some juxtaposition an unexpected, totally new recombination.

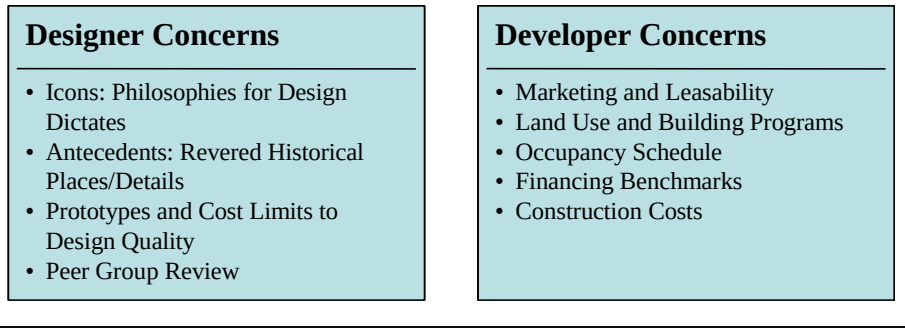
Developer Intervention at The Schematic Design Stage

Designers conclude their creative search for a suitable building concept in a process called schematic design. Out of the fiery crucible of competing concepts, images, sculptural forms, and spatial sequences that a designer imagines comes a bewildering array of diagrams, verbalizations, and sketches. These concept representations will range from diagrams of major ideas and relationships to isolated fragments of a concept or antecedent. The designer will sketch diametrically opposite alternatives and then seem to view both with detached appreciation. When confronted with a seemingly random generation of images, while the architect tests varied rational and non-rational ideas, developers often become confused.

In effect, during this stage developers are watching, not participating in the process. They see a seemingly chaotic welter of idea fragments, as the designer searches for a solution that is tolerable architecturally. Tracking these fragments and seeing the whole design emerge is extremely difficult for the unschooled observer.

No wonder the process is confusing. With all this output, the designers are intentionally putting up a visual and verbal screen that protects their ideas from pre-mature criticism and from the need to address the all-too-clear reality of the project's program. In the schematic design stage, designers are not simply trying to balance and rationalize the client's goals. Rather, they are seeking to form and shape the architectural vocabulary of the project (see Figure 4).

Figure 4
Conflicting Design Agendas



Established, talented architects, whose strong egos are well guarded by a screen of philosophy and logic, use their ability to graphically and verbally manipulate visually untrained laymen to save their creative process from too much exposure to economic constraints or the specifics of a building program.

Developers need to intervene and exert a healthy control in this process. The task of developers/clients at this stage is carefully to pierce the architects' screen. Developers/ clients should set market-and user-responsive architectural goals to guide the schematic process and to focus the dialogue.

Figure 5
Schematic Design Stage: A Checklist for the Developer

- ☐ Establish Design Goals , Both Evocative and Specific
- ☐ Identify and Discuss the Designer's Icons
- ☐ Identify and Discuss the Designer's Antecedents
- ☐ Keep the Dialogue Alive through Diagrams
- ☐ Encourage the Designer's Pursuit of Alternatives
- ☐ Check the Parti against the Development Program
- ☐ Check the Parti against Construction Budgets
- ☐ Discuss with the Designer How the Parti Addresses the Intended User

Establishing Responsive Design Goals

The typical program for a development project includes a listing of floor area requirements and user adjacency preferences, along with construction cost budgets. These are objective design goals—quantitative and familiar in scope and content.
To maximize creative interaction between designer and developer, the program should also list subjective design goals, including evocative, performance-related descriptions of the type of environment desired. Subjective goals may include analogies to other projects, performance standards such as "improved perception of user security," value-loaded descriptions such as "formal, impressive lobby" or "friendly, human-scale gathering places," and evocative descriptions of the architecture desired.

For developers to participate successfully in the design dialogue, they must identify the designers' icons and discuss the icons with them in the context of the project at hand. The discovery process requires purposeful questioning and sensitive listening.

Similarly, developers need to educate themselves on the meanings of references to antecedents. Not uncommonly, a designer will say that a space is "like the Piazza San Marco in Venice," that the sequence of movement in a scheme is "just like Rome's Spanish Steps," or that a landscape "resembles the pictorial episodes of Kyoto's Katsura Palace." Developers should familiarize themselves with the elements named, so they can judge the appropriateness of those references to a particular site or building program. At the same time, they should bear in mind that an architect's final design choice may not closely resemble the antecedent.

The developer should enhance the design dialogue by using free-hand sketch diagrams, such as box diagrams of area or use relationships, bubble diagrams of site issues, or diagrammed entrance sequences with arrows tracing a particular movement path. Such simple diagrams focus the discussion on nonrepresentational, non-architectural drawings,

and thus extend the dialogue between developer and designer. The designer is not allowed to predominate by virtue of seductive and didactic architectural drawings, perspectives, and three-dimensional models. Diagrams serve as an interactive device between developer and designer, pushing the discussion and allowing more verbalization.

During the schematic design stage, it behooves the developer/client to encourage free-flowing exchanges, to give vigorous support to several conceptual possibilities, and to forgo premature judgment. The designer at this stage is subtly narrowing the field of options being considered. Interestingly, it is easy for another designer observing the schematic work to see which concepts are being pursued and which abandoned. But the lay-man, whose vision is fogged by the designer's elaborate visual/ verbal screen, cannot see this winnowing.

The Parti

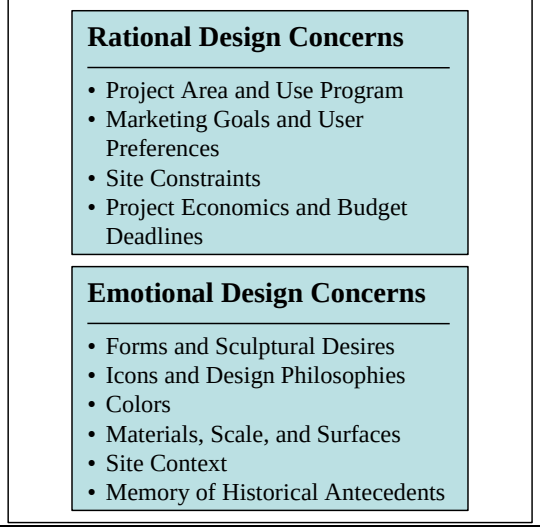
The purpose of the schematic design stage is to produce the "parti," the architectural diagram of the solution that is a shorthand version of the final design. The parti (from a French word meaning "beginning") embodies the architectural concept in a quick diagrammatic sketch, the recognizable cartoon of the idea. Much like a piece of sculpture that emerges from the stone as the sculptor carves, the parti emerges from the successive refinement of the designer's sketches. Once the parti has been selected, the search for a design focuses on that concept alone.

Before authorizing a designer to start refining a parti idea, developers/clients should test it against the development program, budget, and market. They should do some role playing, taking the part of a tenant to evaluate the scheme's adequacy. They should check the concept against the budget and discuss with the de-signer the compatibility of the parti with the intended market for the project. Developers need to do this before an architect shifts to the next stage, called de sign development: the sharpening of the image of the parti idea through detailed analysis of the most important visual aspects of the design.

While designers are focusing all their creative energy on refining the parti, they will not deviate from the concept, even though a host of rational arguments is called up to convince them to yield or modify it.

Finally, at this juncture, the project's major design format and the details of the building shapes are coming into focus. If the developer has managed the schematic design process well, the emerging architecture will likely meet both the development goals and the design objectives.

Figure 6
Search for the Architectural Parti



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This is the First in the three-part series of articles that is drawn in part from Halcyon Ltd's professional engagements and his MIT and Columbia University teaching roles including a core course "Design for Development." This first article in the series, "Creative Design mManagement," appeared in Urban Land Magazine, and a subsequent condensation of the three articles was published in Ernst & Yong's "Perspectives" journal.

Creative Design Management
"Maximizing Value through Performance Review"

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The first installment in the ULI Urban Land Magazine of this series on the developer's management of the creative design process ended with the emergence of the "Parti" (from a French word meaning "beginning"), the basic architectural concept for the project. The developer had established an effective working dialogue with the architect, had articulated the market- and user-responsive architectural goals for the project, and had foregone premature judgment as the architect creatively searched through a bewildering variety of concepts for the solution.

Therefore, the emerging architecture represented by the parti reflects both the development goals and the design objectives of the developer and the architect. Now, with the second installment of this series, the task is to develop the design to build upon and clarify the parti to the point of construction.

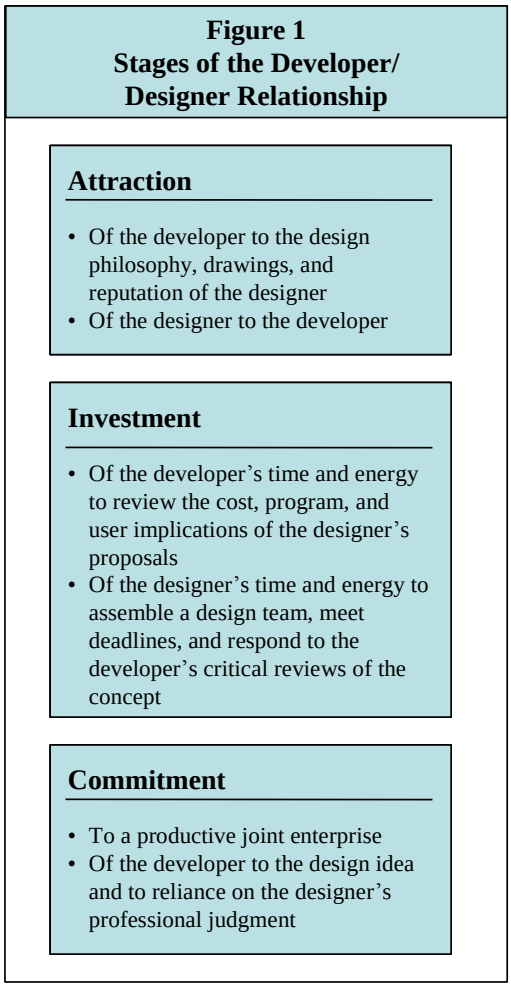
A Relationship in Stages

Psychological studies show that a significant relationship typically evolves through three stages: attraction, investment, and commitment. The collaboration between a developer and a designer in the design of a project resembles the evolution of such a relationship. In the attraction stage, which extends through the schematic design phase of the project, the developer is attracted to the designer's ideals, design style, and design philosophy; and the designer is attracted to the developer's project and his or her involvement in its design. As architect and developer mutually explore the program and the site, and as they cycle through design ideas, they communicate in language that is rich and full of promise. Their relationship can be said to be mutually attractive.

As the design process moves into the design development phase, in which the parti is elaborated into detailed drawings, the developer and the designer in-vest much time and energy into the relationship. The developer is seeking to understand and direct the designer's concept in terms of its cost, program repercussions, and user needs. The architect is putting together a large design team, meeting deadlines, and responding to periodic reviews of the emerging design by the developer. In the *investment stage* of their relationship, the developer and designer learn to communicate through patient dialogue.

Finally, developer and designer reach the point of total collaboration and dedication to a productive joint enterprise. At this juncture—the *commitment stage*—they are ready to prepare the construction documents that tie the project to a fixed description. Although discussions will continue over construction details and although some changes may be forced by cost pressures, the developer is now committed to the design idea. The investment by each party of time and energy into the relation-ship has forged a bond of mutual respect and clear communication.

Figure 1
Stages of the Developer/ Designer Relationship



The developer's management of the design process should take into account the dynamics of the developer/designer relationship. Understanding this relationship, and how it may evolve, will help the developer intervene in the design process with reason and cool judgment without threatening the design team or its sense of accomplishment.

Division of the Design Stream

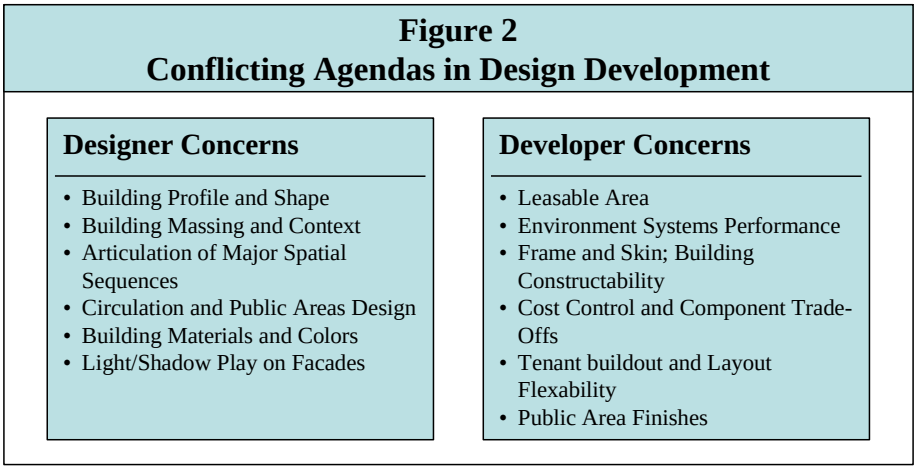
In design development, the parti is reevaluated and the performance of each of its components is tested. How justified are the glowing descriptions and renderings of its merits that the architect put forth in defense of the parti? Both the designer and the developer have accepted the concept, but now their agendas for testing it are quite different (just as they were for arriving at the initial design scheme, as discussed in the first article in this series).

The designer's attention is focused on ensuring that the parti can fulfill itself, on refining its image and expanding its limits in order to make a major architectural statement. This means concentrating on the features of the building that relate to the design concept: its profile and shape, its massing, its facade, its relationship to other buildings, its sequences, its public spaces and circulation, and its materials and colors. As the designer seeks to clarify spatial sequences, he or she produces elaborate drawings of the major public and

circulation areas. Architecture is a sculptural art, and, like any sculptor, the designer will concentrate an defining the interplay of shadow and light upon the design's sculptural forms, windows, and projections.

The developer, on the other hand, concentrates on the market: the program, user parameters, special features to be included in the development, and flexibility. The developer's concerns zero in on the amount of usable/leasable area; the costs and marketability of the frame and exterior skin, and the building's environmental systems; the flexibility of the building to appeal to a wide variety of possible ten-ants; and the appeal of the public areas to market perceptions.

Figure 2
Conflicting Agendas in Design Development



The developer can go a long way toward resolving these conflicting agendas, or toward making them work together, by dividing the management of design development into two streams: the design of major architectural features and the design of building system components. This division of the design management streams is also recommended be-cause the developer is now working with many more participants in the design process. Whereas the creation of the parti was a private, cerebral act, the development of the design requires contributions from a large number of professionals, which complicates management.

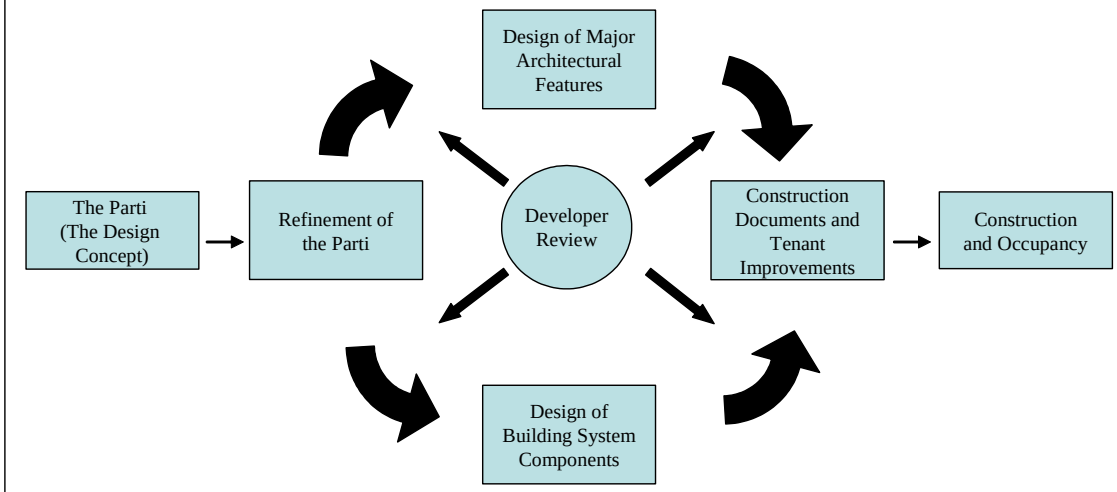
An analogy can be made between the design development and a classical Greek play. The architect as the *protagonist* trys to finalize the de-sign while the *antagonist*, the developer, impedes his progress and a *chorus* of consultants—structural engineers, building systems engineers, environmental engineers, and so forth—swirls around to support the protagonist as the play unfolds. The developer needs to balance his precious management time between the prime designer and the rising "Greek chorus" of specialized consultants.

The design of the major architectural features is of strongest interest to the architect and the other designers on the architectural team. The building system components are of strongest interest to the developer, the architect's job captain, and the Greek chorus. As manager, the developer seeks to focus the entire design team's work. The primary focus of the architect and other design team members should be on issues related to

architecture:; with the developer reserving his or her participation in this work to the performance review of the major elements (see list in next section). The primary focus of the technical team the Greek chorus—should be on issues related to building systems.

The aesthetic agenda of the architect is allowed much greater influence in discussions and decisions concerning the major architectural features than in considerations of building system components. Despite the designer's preoccupation with issues relating to major architectural features, the developer needs to establish performance design goals for both the architecture and the building systems to keep the de-sign process on track.

Figure 3
Management Streams for Design Development Review



Performance Goals for the Architecture

The major architectural features of a project whether it is a commercial office building, a multi-family residential building, a re-sort, or a mixed use retail and hotel complex—lend themselves, for purposes of the design management discussion, to differentiation. Specific performance goals for their design can be identified in advance. It is important that the developer refer to the performance design of the features he or she reviews, and not only to their aesthetic design.

Performance-designed architecture is purposeful—in other words, it is planned to facilitate use of the building's spaces and circulation areas. Even though the user is not part of the design team, performance-designed architecture aims to create a building that is distinctive and responsive to user requirements.

The developer should review seven major architectural features from the perspective of their performance:

Site Context. The design must use prominent features of the site in a responsible way, respect the existing contours of the land, and fit its environment, which includes

adjoining structures. Performance-based design takes advantage of the special qualities of a particular site—for example, its potential for becoming a major urban space, its strategic location as a gateway sequence, its unusual topography, or its views.

Project Massing. The design must be properly proportioned. Performance-based design considers the project's bulk from the perspective of off-site locations and on-site elements like roads and other buildings. The apparent "closeness" of the project's buildings to any of these elements should be examined.

Project Scale and Grain. The scale and grain (the smallness of the specific architectural details that differentiate elements) of the project should bear some relationship to the scale and grain of adjoining uses and the surrounding urban or landscape fabric. Performance-based design takes care that the project's scale/grain indicators—such as rooflines, cornices, and entryways-respect this relationship.

Infill or Adjacency Opportunities. Urban infill sites provide special opportunities to create either a deft contrast or a graceful continuity in building style. Performance design looks to adapt and interpret the visual elements and traditional materials from surrounding structures into the architectural details of the project. For example, the 19th-century bay windows of nearby townhouses can be interpreted in a contemporary manner and restated in different materials and forms.

Project Profile and Shapes. The designer's motivation to create a unique design is demonstrated most often in the sculptural form of the building—its profile, shapes, and the play of light and shadow on its surface features. Performance design re-quires the architect to control and refine the design style to meet the developer's conception of commercial acceptability.

In reviewing styles, the developer should know whether the shapes and proportions are trendy or traditional, progressive or revivalist. He or she should know how far the design stretches "accepted" design philosophies, whether modernist, neoclassicist, or deconstructivist, in order to determine how experimental a design can be to be tolerated by the project's market.

Public Spaces. Public spaces can be designed for a variety of purposes—for example, to provide a meeting place or to convey an image of grandeur. These spaces establish the look of a project, and therefore the developer should approach their design with careful consideration of the project's target market. The developer needs to decide what functions the public spaces are to serve before reviewing designs. It is helpful to think about the elements of historically successful and unsuccessful public spaces: what makes one feel comfortable or uncomfortable, elegant or insecure? Good gathering areas, for example, seem to need a sense of focus, which can be provided by landscape or architectural features. Compromises may be necessary between the goal of clearly organized space for the easy orientation of its users and the goal of complexity in space for the delectation of visitors.

Architectural surprises—for instance, a reception area planned to be intimate that dwarfs its users, or a lobby that seems decidedly less grand than intended—can be avoided by adequate study and visualization of the size, depth, and height of public spaces. Rough study models with human figures to scale are helpful to establish scale relationships.

Spatial Sequences. Another major outlet for the designer's architectural expression is the manipulation of three-dimensional spaces into sculptural spatial sequences. Performance-design requirements need to address the marketing impacts and user requirements of these major spatial sequences. In predicting people's reactions to, and orientation within, architectural space, the developer will find it useful to refer to examples of solutions he or she considers successful: impressive entry and arrival sequences at hotels or resorts, the entry sequences of some office buildings, the outstanding lobbies of residential buildings, or the circulation systems of certain retail complexes.

In reviewing the designer's suggestions, the developer should look for ways to animate the paths linking users' destinations (for example, the path from parking areas to office elevators) and to ensure that major pathways penetrate the most expensive architectural spaces, which should be shared by a majority of the users. The developer should imagine what paths a user would travel in a typical workday and what architectural treatments would enliven or complement those paths.

Performance Goals for the Building Systems

The performance, cost, and constructability of building system components can be discussed and decisions made without undue attention to aesthetics, since aesthetic considerations are given top billing in the design development of architectural features. During design development, it is important to work up unit cost estimates (and target budgets) for all of a building's primary systems—structure, exterior skin, interior finishes, and environmental systems.

As the design develops, these cost data can be used to analyze trade-offs between, for example, a more complex skin and less expensive perimeter con-figuration, or between flooring materials and ceiling expenditures. To maintain the basic design concept, the developer should try to effect trade-offs that favor the most visually prominent aspects of the design.

The developer should review five building system components from the perspectives of their cost and performance:

Building Layout and Efficiency. The building should be able to attain a certain ratio of leasable area to common and other non-leasable area, depending on what is standard for the type of building. Also, it should be able to meet certain functional requirements. For example, the layouts of shopping centers should con-form to certain "laws" of visibility, access, and merchandising. The organizational principles of hotels—check-in sequences, lobby access to elevators, and separate service areas—are independent of architectural aesthetics. And market circumstances dictate ideal floorplate sizes for office buildings and limit office layout choices. These standard ratios and functional requirements form

part of the developer's basic performance design goals for the project's layout. To control costs, the developer needs to consider carefully the amount of perimeter area that the design entails and the amount of volumetric area contained within, including the amount devoted to public spaces.

Exterior. A building's skin not only expresses its architecture but also plays a major role in marketing. And it is a significant cost component. Tenants' values and perceptions need to be carefully considered in the choice of skin materials and treatments. Use of the same materials that have been employed on well-respected structures in the project's neighborhood can protect the developer from serious errors in judgment and contribute to the goal of designing a building that suits its surroundings. But considerations of cost may dictate the substitution of less expensive materials for such traditional cladding materials as heavy masonry, brownstone, or granite. In reviewing skin options during design development, the developer should separately consider their various cost components—materials, installation—and look for possible trade-offs.

The availability of materials is another important consideration, together with constructability and the trade-off between first cost and maintenance costs. Discussions of final materials should begin early in the design development process. A feel for proposed materials can be simulated through detailed mockups at a scale that is half or one-quarter of the size of actual building surfaces, along with large samples of the actual materials. Small samples fail to convey the feeling the material will create when used over large surfaces.

Figure 4
Strategies for Managing the Design Process

Stage in Project Design	Outward Manifestations of the Designer's Mindset	What Is Actually on the Designer's Mind	The Developer's Best Management Strategy
The Developer's Definition of the Program	Charm, wit, cordial interest, casual testing of the designer's own philosophy and ideas.	Quest for the developer's willingness to experiment and spend.	Explain the project's performance goals in evocative terms.
The Designer's Search for a Solution	Confusion; inarticulacy on project design; references to icons and antecedents.	The stress of creativity; the need to protect inchoate ideas from premature criticism.	Talk through diagrams; explore the designer's icons and antecedents; trust the process; forego judgment on emerging design ideas.
Generation of Design Alternatives	Presentation of the designer's chosen array of alternatives; a winnowing of alternatives (not visible to laymen); testing of the preferred concept.	Panic that the search is limited to only these few alternatives.	Listen carefully; look for clues to the designer's thinking; when the direction is right, reinforce it; reconfirm program goals and project budget.
Schematic Design (Establishing the Parti)	Elaborate drawings; the presentation of a recognizable concept; defense of the merits of the parti in glowing, overblown terms.	The need to sell the final parti to the client in order to proceed as quickly as possible into its elaboration.	Be sympathetic and supportive; but challenge the parti intellectually, if necessary; test the parti's ability to meet marketing goals and dollar budgets.
Design Development (Refining the Parti)	A protective attitude toward the parti; arguments that significant changes are absolutely necessary as extensions of the parti; elaborate and detailed drawings; the commitment of a large design staff to project.	Rationalization and perfection of the parti; attaining engineers' consensus on systems that promote or do not adversely affect the parti.	Review the performance design of individual components of the project; bring in outsiders to review selected parts of the design; for the second and last time, test the design's ability to meet marketing goals and dollar budgets; explore radical cost reductions by changes in building systems.
Construction Documents	Intensive production of drawings and specifications; submission of complex details for review; the commitment of more specialized technical staff to the effort.	Trying to ensure that the design document work is outpacing the client; desire to push de-sign ideas to a close; attempt to control the entire design team, the engineers in particular.	Carefully review the design of all components and systems; reinforce the collaboration of the-entire technical team by discussing construction details in depth; make decisions now on cost trade-offs between different parts of the building
Construction	A rigid adherence to the defined scope of the project; unwillingness to consider substitutions in materials or finishes.	Terror that the design will be diluted through the developer's or con-tractor's field changes.	Remain coolly reasonable; entertain the possibility of field changes, but only if the architect agrees to study them and then concurs.
Post-Occupancy	None	Awaiting reactions from the designer's peer groups and critiques in architectural journals	Bring the designer back for post-occupancy design evaluation.

Finishes. The choice of finishes needs to be made with the market people's preferences—in mind. Most people prefer the texture, shape, and touch of natural materials: brick, stone, wood, and stucco. These well-known materials seem to be emotionally as well as visually expressive.

Environmental Systems. The criteria for the design of environmental systems—including electrical services, heating and ventilation, plumbing, and special services—should focus on costs versus benefits and life-cycle performance. The reliability and availability of equipment, the performance of systems, and user needs (including the flexibility to lay out tenant space according to individual requirements) should be the topics that dominate these design discussions. Much of the cost of a building is buried in its environmental systems.

Early effort spent to coordinate the various mechanical pieces of the design—for example, how much space the plumbing and electrical feeds will occupy—can save substantial dollars in the building program. Such coordination will have to be undertaken by a special task force headed by the architect's job captain, the most senior technical person on the design team.

Tenant Buildout. The tenants' (or other users') build-out pro-gram is, in effect, a second construction program that begins
after the building is completed. One of the hats that the developer wears throughout the de-sign development review process is that of the often yet-unknown user. The adequacy of the design being developed in terms of the buildout of tenant space is a crucial criterion in its evaluation. The primary space concerns of users are flexibility and divisibility. The developer who can offer preplanned layout solutions to a tenant's future expansion, con-traction, or reorganization will have a marketing advantage, as will the developer who can offer special-systems support to potential tenants in the marketplace.

Design Experimentation and the Developer

The developer's design responsibilities are daunting. The large, long-lasting structures he or she erects should harmonize with their surroundings, age gracefully, and exhibit architectural excellence. Architectural responses to any given problem are practically infinite. The inventive design mind can easily come up with literally hundreds of architectural solutions for a given program. The choice the designer makes hinges in part on the popular or respected styles of the day, in part on the texture of the project's environment, and in part on the developer's willingness to experiment architecturally.

Each generation, in fact each decade, ushers in a new fashion in architecture. The postmodern style of the 1970s, felt in every major design school, allowed architects to experiment with the traditional colors of Tuscany, columns from Greece and Rome, and various other decorations. That style was pushed aside in the 1980s in favor of neoclassicism, involving a more contemporary, bolder interpretation of the rigid visual rules of Georgian architecture in Britain. Now, new fashions seem to be emerging, fashions that range from an architecture that espouses a respect for local vernacular styles to deconstructivist architecture that exhibits sheer geometric exuberance and complexity.

The commercial acceptability of a new style cannot be deter-mined in advance. But the performance design process in which each major component of a design is tested in terms of its market performance and user acceptability, independent of aesthetic principles, enables a developer to tailor design concepts to the marketplace.

Discoveries in the sciences of sociology and human ecology are likely to yield information about the use of architecture that will contribute to the design of more responsive and useful environments. The connection between the social sciences and architecture is not yet widely recognized nor is it taught in architecture schools. Imaginative real estate developers should familiarize themselves with this embryonic field, which promises to yield new insights into developing environments that are more responsive to their users—and hence more marketable.

Developers, in fact, need to devise their own methods for analyzing the performance of designs, and for directing the designer to fulfill performance goals. They must become students of spaces, places, and physical solutions that work. They must think about what it is that creates intangible aesthetic and emotional appeal. Developers need to become as organized about collecting and arranging performance antecedents and icons as designers are in collecting, organizing, and articulating their own visual theories.

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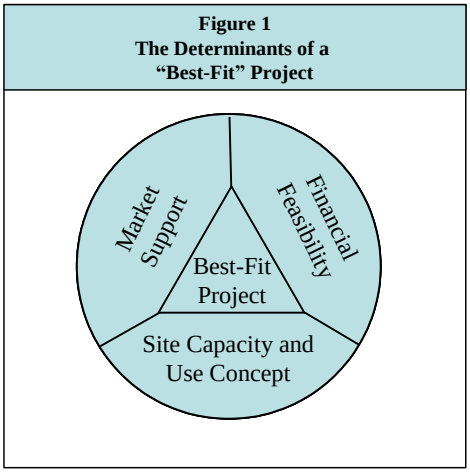
This is the Second in a series of articles that is drawn in part from Halcyon Ltd's professional engagements and his MIT and Columbia University teaching roles including a core course "Design for Development." The First article "Understanding Motivations and the Creative Process," and this Second article "Maximizing Value through Performance Review" appeared in Urban Land Magazine, and a subsequent condensation of the articles was published in Ernst & Young's "Perspectives" Journal.

Figure 1
The Determinants of a
"Best-Fit" Project



The strategic planning process is, in this image, the chrysalis with-in which the transformation takes place. Within its framework, the developer tests alternative densities and uses and assesses risks. The strategic planning process described here (with more detail provided for the steps involving design tasks and less for those involving market and feasibility analysis) has nine steps. While these steps are presented in sequence, they are best taken simultaneously. From the perspective of the design process, the challenge

to developers is to bring thorough market and investment analysis ‘to bear on design and planning, which, on the other hand, must be allowed imaginative free play. As in new development projects, developers need to clarify the project program and incorporate user requirements into a dynamic planning and design process. They need to let the systematic strategic planning process, rather than their preconceived market solutions or the designer’s set of de-sign ideals, serve as the primary control of design activity.

Nine steps of the Strategic Planning process

1> Initiate Capacity Analysis

The development capacity of the site and existing buildings needs to be determined. Among the elements determining capacity are access to the site and regional transportation linkages to the project; zoning, coverage, and density regulations; the ability of the on-site utilities to handle upgrades or conversions; and the various governmental approvals that will be required under different anticipated development scenarios.

At this early stage of the game, it is advisable to identify and take the measure of major stakeholders, the people who could or would oppose or support a project. Likely stakeholders include civic and business leaders, city officials, nearby residents, and the user groups targeted for the repositioned project. The history of entitlements of similar projects in the community—whether they were successful or not—should be studied. And the site should be examined for major environmental contingencies, including toxic wastes and ecologically sensitive features like wetlands and natural habitat.

The results of the capacity analysis should be used to construct a design “envelope” that describes the site’s opportunities and constraints.

2> Identify Market Support

We all know that elegant packaging cannot sell a product for which there is no consumer demand, and brilliant architecture alone cannot fill a building. The assessment of potential market support is a fundamental part of strategic planning. This requires some basic research into market area demographics, household and income trends, employment trends, and residential growth. The trade area needs to be realistically defined in terms of driving time and competitive supply. But the strategic planner can think about widening the trade area by developing a concept-driven project that would draw from beyond recognized primary and secondary markets. Good forecasts will be needed of residential sales, rental absorption, hotel occupancies, and office and. retail leasing.

The developer should endeavor to put together a list of “the best” projects in different use categories, based on the perceptions of opinion leaders, brokers, and business leaders. Their sales records—absorption, capture share, rents, sale prices—should be studied. The users of some of the more outstanding competitive projects should be interviewed in an attempt to identify market voids—amenities and features these users do not, but would like to, have.

These various market studies will enable the developer to pro-duce an initial development pro-gram for the site.

3> Review Current Operations

The performance of the existing buildings—as structures and as operating entities (costs and revenues)—must be examined. This provides baseline data for analyzing and comparing various redevelopment and reuse scenarios. Reports on all current revenues are needed, as well as line item operating costs reports, by major vendor or operating system. Along with obtaining good drawings of the site and the building layouts, the developer needs to assess how well the configuration works in the eyes of users and property managers and to identify the problems. Salvage options need to be stated: Are there any mechanical peculiarities that would affect use changes? Can existing systems be economically used in a reprogrammed project?

Property operations issues such as security and maintenance requirements should influence the redesign process.

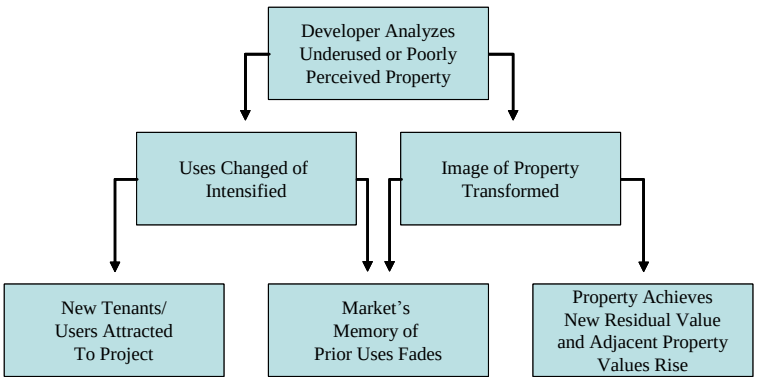
$> Generate Alternative Development Concepts

Having completed the audit of the project—determined the site's capacity, assessed market sup-port, and analyzed current operations—the developer is ready to work with a design team on generating an alternative architectural image and use concepts.
It is important at this stage to let concepts flow as part of the creative process, and to refrain from evaluating them too early. The developer is looking for a wide set of possible uses and for designs that can accommodate them, and should keep the process exploratory and open to "wild" ideas. To try to establish a quick fix or an ideal solution would be a gross mistake.

The developer has available a number of techniques for encouraging the flow of concepts from a design team, among them:

- Ask designers to organize their solutions around significant features identified in the audit phase—for example, access, visibility, topography, and context.
- Search for concepts/uses that have worked elsewhere but that are missing from this market.

Figure 2
The Metamorphosis of Project Repositioning



- Create a matrix that identifies synergies between different land uses. Look for uses that can share expensive architectural features like an atrium (office and retail) or parking, or that can benefit from an adjacent use, such as a small hotel whose guests could use the amenities of an upscale multifamily project.
- Identify an image and theme that will appeal uniquely to target users. Discuss projects and projects elements from other places that fit your conceptions of the quality and character of this project. But remember that tastes and levels of user sophistication may differ. Ask the designers to respond to observations made in the market interviews by users of competitive space.

Figure 3
Strategic Planning for Project Repositioning

Project Audit

1 **Capacity Analysis**
- Site Capacity
- Zoning Constraints
- Utilities
- Approvals Required
- Environmental Constraints

2 **Market**
- Demographics and Employment
- Competition
- Market Voids
- Capture Rate
- Lease-Up/Absorption Histories

3 **Current Operations**
- Building Structures and Systems
- Operating Costs/Constraints
- Revenues

Development Scenarios

4 **Alternative Development Concepts**
- Image and Theme
- Targeted User Preferences
- Workshop Design Reviews
- Matrix of Uses

5 **Physical Costs and Impacts**
- Building Systems Review
- Operating Costs
- Code Review
- Construction Unit Costs
- Value Engineering
- Environmental Fixes

6 **Financial Feasibility**
- Revenue
- Absorption
- Project Costs
- Operating Costs
- Returns

Action Agenda

7 **Decision**
- Investment Objectives
- Lease v. Own Evaluation
- Joint Venture Options
- User Preferences
- Project Costs

8 **Master Plan**
- Site and Project Plans
- Models and Sketches
- Architectural Character Details
- Surrounding Areas

9 **Implementation**
- Development Schedule
- Approvals
- Marketing Strategy
- Financing Plan

- As alternative scenarios emerge, review them in highly participatory workshops. Intensive work-shops bring multiple viewpoints to the table very quickly and do not threaten the flow of creative ideas. But make sure that the designer and the fragile new architectural or planning concept are partly protected from the relentless logic of technical consultants on the team. Consider separating architectural concept sessions from technical workshops (as described in *Urban Land*, second article). Space workshops at east two weeks apart to allow the designer time to refine alternatives.

Each alternative will need to be tested for its own market support. The developer will need to ask the designer for a bulk analysis and site coverage schematic of the concepts proposed, in order to assess the proposals' character and scale. Playing the role of the target user, developers should test pedestrian and vehicular movement through the site. Again playing this user role, developers should examine sketches and models to see if the design/image changes from the original project are easily perceptible. And they should assess the ease with which each alternative might make it through the approvals process, looking particularly at what actions, like the creation of buffer zones, might be required.

The search for viable development scenarios requires extraordinary interaction between the developer and the designer. This is not the search for a creative architectural solution, as described in Articles 1 and 2 previously published in Urban Land . It is a search for a set of uses, a matrix of choices from which a new, enhanced Property Solution can emerge.

Physical Costs and Impacts

The structural, operating, and code implications of each viable scenario must be assessed. The various scenarios should be ranked according to different aspects of their performance, for example, according to their traffic impacts or according to the cost of the environmental fixes they require. The development concepts should be carefully examined for their relationship to the existing infra-structure, traffic circulation systems, and building systems such as the structure, fire packages, and mechanical systems that are expensive to modify. Unit costs should be established for major site and building systems, and value engineering techniques should be used to assess cost savings that could be achieved through minor modifications of the configuration or concept.

Financial Feasibility

Each serious alternative that is proposed will need to be tested for its financial feasibility. However schematic the design solution being tested, the developer should be striving for clarity of details in the pro formas. As the scenarios achieve greater resolution and architectural character, the simple initial revenue and cost assumptions evolve into ever more complex financial models. In the case of repositioned projects, the operating numbers from the existing project become the baseline against which to measure modifications to the project.

Physical planning and financial analysis move forward in tandem. As the design team develops concepts and architectural character, the developer tests costs, financing

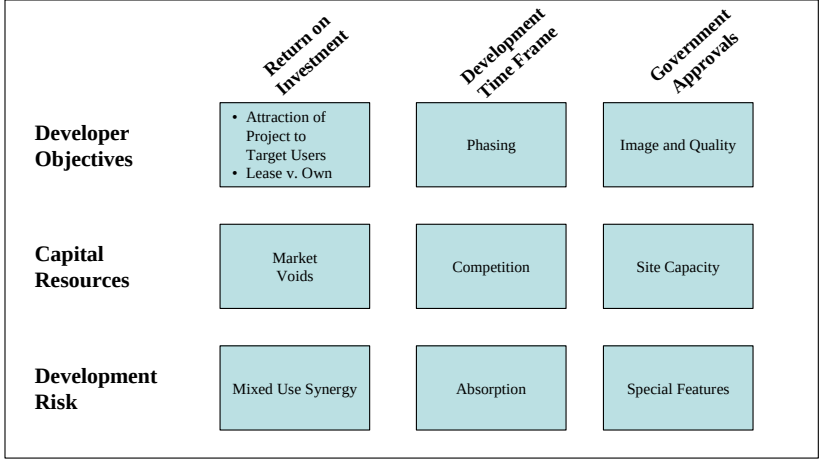
alternatives, use variables, lease-up rates, and revenues. The developer's financial reviews should provide feedback in design work-shops; they tell the planners and designers if revenue enhancements are needed, if cost reductions are required, and whether or not the overall concept is feasible.

Decision Matrix

At this stage of the process, the developer has delineated a number of concept scenarios that meet the tests for marketability, develop ability, and financial feasibility. It is time to choose a scenario to pursue in detail. Just as the various scenarios were ranked according to their physical costs and impacts in order to guide the search for viable development alternatives, so should they not be ranked for various attributes that are germane to development success?

The attributes by which proposals should be judged are their ability to meet developer objectives, the return on investment they offer, the capital resources they require, the development risks they entail, their likely time frame, and their ability to gain governmental approvals. Some of the elements that go into the makeup of these attributes are shown in the boxes of the project decision matrix (Figure 4).

Figure 4
Project Decision Matrix



For example, in looking at return on investment, the developer should rank the proposals according to their short-term cash needs, their potential for sale in the future, and their attractiveness to potential users. If a tenant is the developer, it should look at the leasing-versus-ownership advantages for each scenario. The role of each scenario's special features in reducing development risk and in gaining governmental approvals should be gauged. Proposals should be evaluated in terms of their potential to attract joint venture partners and/or public sector funding or participation.

Master Plan / Development Scenario

The end result of this decision process is the selection of a development scenario (or pieces of several scenarios). At this point, the design is refined—the development concept is articulated with a specific site plan and architectural detail. Developers now

look to the design team to produce a layout of the chosen scheme; schematic models that show physical relationships between major building areas; and, if appropriate, a salable parcel plan.

Developers should ask for phasing alternatives that give the impression of a completed project at each construction phase. The plans showing the completion of each phase should include the interim uses—such as parking or passive recreation—for the parcels remaining undeveloped in that phase.

In repositioned projects, developers try to achieve a new market identity for projects. Because architectural change is a key way of achieving a new recognition, it is important for developers to visualize the proposed new architectural image. The project's flagship or core image components should be easily identifiable with that new image.

Developers should ask for dramatically colored and rendered site plans and/or models that show the positioning of project elements, and for a "walk-through" series of sketches or model fragments that let them move through the project in much the same way that users would. They should also ask for visual renderings of the improvements that are likely to occur on surrounding sites as a result of this project. All visuals should be portable and usable for other purposes like approvals, public relations, joint venture prospecting, and potential tenant negotiations.

Implementation

Finally, a plan for implementation will include an overall development schedule, a plan for getting through the approvals process, a marketing strategy, and a financing plan. In the approvals process, the focus should be on the stakeholders, on their particular concerns and on potential areas of agreement with them. The realities of the market—not the developer's ego, nor the political demands of the city, nor the architect's vision—should shape the marketing strategy. The developer needs to market the project's advantages over those of the competition, to anticipate governmental requirements, and to establish a public relations posture that "sells" the project to public officials, the business community, and the financial community.

Triad Testing

The sum and summary of this strategic planning process is "triad testing," a protocol calling for the developer to constantly seek the balance among concept, financial feasibility, and implementation (market, approvals, and investment objectives). The enhanced property concept, the pro forma, and the action agenda that emerge out of this balancing act will produce a much stronger, more value-enhanced project than will the typical planning process, which focuses mainly on the planning and architectural design concept.

Figure 5 Triad Testing	
Concept	• Site Capacity • Architectural Theme and Image • Alternative Use Concepts • Master Planning/Phasing
Financial Feasibility	• Target Market Support • Feasibility • Capital Requirements • Financing Options
Implementation	• Investment Agenda • Architectural Image • Government Approval/ Stakeholder Support • Marketing Strategy

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