INTRODUCTION & MISSION STATEMENT

The UTA Center for Metropolitan Density (CfMD) research supports the premise that greater density produces the most economically productive, fiscally efficient, environmentally sustainable, and culturally supportive environments.

BENEFITS OF DENSITY

UTA CfMD believes that the benefits of greater density are represented by:

- Economic Productivity
  Density of investment promotes Fiscal Efficiency and Higher Tax Rates

- Value Creation
  Dense Development optimizes efficiency of expensive infrastructure such as Public Transportation

- Business Processes
  Workplace Density provides Improved Productivity and Efficiency; Density creates a more readily accessible Talent Pool of diverse applicants

- Social and Cultural Benefits
  Closer Proximity of People fosters Social Interaction, which supports greater Retail offerings and Cultural Variety

- Environmental Sustainability
  Denser Development requires less Land Coverage and reuses existing infrastructure, reducing the dependency on Natural Resources

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CFMD ROUNDTABLE SERIES
Industry Experts convened at four roundtables to discuss the “Future of The City;” their deliberation focused on best practices in development, challenges in project finance, and the important design trends that will propel cities into the future.

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CFMD CURRENT RESEARCH
Research study on the use of Tax Increment Financing as a means of financing sizable development in some of Texas’ largest cities. The study illustrates TIF as a viable tool for leveraging development and generating new city taxes.

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ADVANCED DESIGN STUDIO
Features selected examples of higher density solutions developed by students in UTA’s Advanced Design Studio. Students use Financial Feasibility to support Value Creation and new city tax revenue generation.

PAGES. 8-15

FUSION: A NEW DEVELOPMENT DECISION PLATFORM

PAGES. 16-17
The UTA Center for Metropolitan Density (CIMD) provides research on the benefits gained by the public sector from high density development, including the benefits created from private market-driven initiatives and value creation. We seek to explore the best practices in design and financial feasibility for optimizing urban districts and densified suburban town centers.

We believe the rapid urbanization in Metropolitan areas deserves dedicated research and fact-based comparisons. These comparisons include alternative development strategies to ensure sustainable growth and that managing urban expansion with appropriate higher density solutions to afford the best residential, workplace, and cultural choices.

Higher density solutions, and their contribution to more livable, walkable, and more sustainable development strategies to ensure sustainable growth and that managing urban expansion with appropriate higher density solutions to afford the best residential, workplace, and cultural choices.

CMID Research Journal Previous Issues
In previous issues of the CMID Research Journal (RJ) we explored interim uses for vacant land in RJ #1, and the growth of Hispanic populations in RJ #2. Both solutions offer unique design opportunities for creating new Urban Infill districts. A Scenario for a new San Antonio neighborhood infill district is included in this Journal.

Embedded Advanced Design Studio
As a pioneering test in architectural education, the CMID Advanced Design Studio was embedded for an entire semester focused on urban prototypes inside HKS Inc. Architects in downtown Dallas. As Doctors are hospital trained, Lawyers trained in clerkships, Architects should receive some academic training within a professional architectural firm. Support by HKS allowed our Studio to explore city urban interventions, such as the Dallas and Ft. Worth vision plans illustrated in this Journal.

Fusion — Building Industry/Planning/Finance
This CMID Journal discusses the concept of Fusion between the building industry (architecture, engineering, construction, and development) with urban planning and finance. Decisions in these disciplines are often made independently, rarely in continuous collaboration. CIMD foresees an integrated Design/Construct/Operate “Decision Platform” offering a unique opportunity to generate compelling efficiencies in design collaboration, time management, planning and project financing.

Call For Research Sponsor: SW Industry Clusters
Published in RJ/#2, CIMD Industry Cluster research identified the vertical integration of enterprises targeted to specific markets with distinctive product or process competencies. As a known economic ecosystem exhibiting connectivity and interdependence, and despite available data sources, little comparative work has been done to identify and quantify these Clusters. Few regions have accurate metrics of existing Clusters, and their resulting multiplier effect. CIMD is now seeking a corporate sponsor to explore Industry Clusters with both tactical advantage and long-term strategic value.

Selected CMID Advisory Board Member Quotes
UTA, CMID Advisory Board features industry leaders who provide views on market trends and research strategies for solutions to manage growth, infrastructure, and clusters as competitive success factors for tomorrow’s workforce. We asked selected CMID Advisory Board Members to comment on the impact of higher densities. Please see this journal’s back cover for the complete list of CMID Advisory Board Members.

KEITH CARGIL, PRES/CEO
Texas Capital Bank Shares

“For Urban Development, financial markets reward initiative but require order and transparency within investment environments. Research in higher density impacts may influence larger density investment, supporting UTA CMID’s mission to quantify linkages between density and social and economic benefits.”

KAREN WALZ, PRINCIPAL
Strategic Community Solutions

“As one of the principals charged with the organizing efforts to create the Vision North Texas Plan, which took a new look at the impact of continued growth in the region, we recognized most communities raised issues of Density, Architectural Scale and Community Image, whose solution are sure to be critical success factors.”

DAN J. EAKINS, PRINCIPAL
HKS Inc.

“Density Affords Solutions. The Density of Downtown Dallas’s core has created an Affordable and Logistical place to locate HKS Inc.’s headquarters. Our new location has made our commitment to sustainability possible by providing our employees accessibility to light rail and affordable food options in walking distance.”
Mixed-Use Trends in Development and Finance

The discussion focused on Mixed-Use design and development trends, along with implementation and financing issues such as:

- The challenge for parking is unique in urban settings, as parking ratios are lower than suburban. More efficient parking management systems are used in Europe, hence opportunities exist for automated parking systems and with better shared use of expensive facilities for different uses days/evenings.
- Institutional finance favors high density investments and mixed use which has additional "Address value" by the design of dedicated Mini-Parks, connected urban landscapes, and streetscapes.
- Traditional capital sources currently favor Multi-Family due to proven demand with favorable returns, along with Urban infill and Mixed-Use, offering investment diversity.
- The Dallas Office of Economic Development supports customized incentives for development, including extensive use of Tax Increment Financing. Public-private partnerships of some sort are now expected for urban core investing.
- New Equity Financing sources for urban development are expected to include Pension Funds and the return of asset-based Securitization.
- Mixed-Use Residential is the newest product with both financial institutions and new equity sources.

Urban Infill: Challenges & Opportunities

Panelists observed that urban infill is a form of city patchwork—a collage of uses, which can provide a new perception of city scale. We recognize in early history of urban settlements, that unsanitary and dangerous conditions prevailed. Now we are creating built-form networks based on social consensus which can address critical societal issues. Preference for living closer to work, with retail, cultural attractions, and walkable environments, generates a new opportunity and challenge for urban infill design. Several other points pursued included:

- For urban infill, money is like gravity—a force which shapes the environment.
- The Nucleus of infill mixed-use is housing, office and retail, where walkability is the key feature.
- Behavioral changes drive development— as seen in current interest for more active, and urban live/work environments.
- Vision North Texas plan showed that most people want “the city out their front door, and forest at their back” – a real challenge to high density landscape intentions.

Other Panel observations:

- The nexus of the DART system is downtown, an important success factor as ridership increases slowly over time.
- The Arts District and with concentrated Museums, Performance Venues, and Clyde Warren Park are unique assets, not available in suburbia.
- Creation of true urban character is within reach for downtown, so great neighborhoods in cities feature boundaries for certain areas that have special character.
- Private sector must take a stronger role in establishing a vision plan which the Public sector could support.
Tax Increment Financing

Leveraging Private Initiatives with Public Partnerships

Tax Increment Financing (TIF) is a project subsidy methodology using the new increment of property taxes created by a project as a partial tax rebate to fund eligible public costs. TIF methodology uses taxes that would not otherwise be created, except for the initiative of the private sector – while only a fraction of the new taxes generated are rebated for public improvements, including streetscape, open space, parking, site improvements, and possibly utilities – none of which are to be owned by the developer.

Leverage ratios of public tax subsidy to amount of new taxes generated is highly favorable to the city, and is an easy political sell – as TIF incentives cost taxpayers nothing up front, and help induce development that would not otherwise occur.

Tax Increment Financing as Incentive

Tax Increment Financing (TIF) is used by cities to induce development in areas targeted for reinvestment, such as urban infill sites and underutilized parcels. The first step is an area designated by the city as a TIF District or Tax Increment Reinvestment Zone (TIRZ). From a negotiated fund from newly created taxes, a portion is derived for site improvements including utilities, open space, streetscapes, and possibly parking. Eligible expenditures are public improvements, not part of the private sector development, such as buildings or interiors.

TIF district establishes a budget for the portion of the future taxes to be rebated to fund improvements over time. Typically a period of between 15 and 25 years, depending upon the aggregate amount needed for improvements. This approach has good “political optics,” as the developer must first generate the taxes before any incentive is granted.

When upfront funds are necessary, the city could pledge the developer’s negotiated tax rebate as a Capitalized Income stream for a Municipal Bond issuance. Counsel and placement fees, and administrative expenses would be subtracted from the initial bond issue, the result approximates the same Net Present Value as the allocated tax rebate over time.

Either through partial rebate of taxes over time, or monetized tax payments up front, TIF is a valuable tool to incentivize developers, particularly for urban areas where expensive site improvements are higher than suburban counterparts, and where pioneering development is challenged by unproven absorption rates, and untested market perceptions.

Tax Increment Financing as an economic development tool is beneficial to the developer, municipality, and the public. New development creates property value, generating new taxes. A portion of the new taxes pays for public improvements, enabling projects not feasible without the public investment. The city benefits from new property tax revenue and citizens benefit from neighborhood improvements and urban infill development that might otherwise not happen.

TIF Timeline Diagram

Chart below shows the Tax Increment Financing process where the agreed allocation of a portion of new taxes generated over and above the existing city base taxes – the Tax Increment is rebated to fund project improvements. Each year a portion of the Tax Increment is allocated to the project, while the majority of new taxes accrue to the city. When TIF project costs are fully met, the city retains 100% of property taxes thereafter.

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Tax Increment Financing Benefits

- Increases Property Value and Creates Larger City Tax Base
- Portion of Tax Revenue Stays in the District
- Induces Higher Density and Attracts Institutional Capital
- Pays for Streetscape, Open Spaces, and Site Utilities
- Enhances Private Development Yield Over Time

Cypress Waters TIF District Case Study

Project’s Overview

Cypress Waters TIF District (established in December 2010), will create a Taxable Property Value of $2.2 Billion. Benefits derived from this 1,000-acre development by the Billingsley Company will be from the creation of 10,000 multifamily and townhome residential units, and 450,000 SF of pedestrian-oriented retail frontage. In addition, sites are dedicated for elementary, middle, and high school campuses, along with trails, parks, and landscaped open space.

Leveraging Private Initiatives with Public Partnerships

Cypress Waters is one of the largest in-fill sites in North Dallas, strategically designed to create a pedestrian friendly community with extensive walking trails along a sustainable waterfront living environment. The TIF district was established in 2010 to encourage a high-density area that will benefit new tenants along with the established neighborhoods in the area. Cypress Waters would not be possible with out TIF support.

Conclusion: Benefits of TIF Incentive

After the agreed project rebate amount, the City of Dallas retains all the Property Taxes created — a good deal on land that, but for the TIF District, would have evolved piecemeal, with uncoordinated uses and certainly less Density, hence less taxable value.

Selected City TIF Leverage

Texas has over 130 TIF districts, which have a property value of $966 billion. We have selected TIF District information from Houston, Dallas, Fort Worth and San Antonio, cities which lead the state in Tax Increment Financing, Chart above, shows Leverage of Current Taxable Value to TIF Tax Rebated to Project.
**Advanced Design Studio**

**Studio Objectives**
An intensive, fast-paced “super course” focused on higher densities to generate residential choices, new office workspace concepts, with supporting retail and cultural uses. Solutions are sought to create significant Tax Increment to offset infrastructure and open space costs.

**Design Cycle**
- Studio is focused on density and value creation, by generating the highest possible Tax revenues, creating jobs and exceptional design solutions.

**Feasibility Testing**
UTA Students, having no prior financial experience, prove financial feasibility with Rules of Thumb templates for Hard Costs, Revenues, and Soft Costs to determine Total Development Cost.

**Dallas Regen Process Map**
Public/Private Partnership of Developers/City share Vision Planning, create a Parking Authority and public-purpose ReGen Corp as Master Developer, to facilitate TIF investments.

**Dallas Presentation Jury**
High density MXD/Residential and Office / Workforce scenarios, with special Learning Environments to transform Center Dallas, where reviewed by: left to right - Developer Shawn Todd, Todd Interest; Architect Ipton Housewright; Omnimplan; Developer Ted Hamilton, Hamilton Properties; Dallas BD Principal Michelle Houghton; CMD Advisory Board Member Steve Kennedy; David Williamson, HKS; UTA Dean Dan Gatcke.

**Presentation Skills**
CMD Advisory Board member Ritchie Butler of Prescott Realty at left, with CMD RJ3 Editor Rachel Timm, middle, with UTA students

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**STUDIO OBJECTIVES**

**Quick Test Feasibility: Total Development Cost must be less than Capitalized Value to create positive IRR**

**COAST**

**VALUE**

<table>
<thead>
<tr>
<th>TOTAL DEVELOPMENT COST</th>
<th>YEAR 3 NOI CAPITALIZED @ 7.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOFT COST &amp; ALLOWANCES + HARD CONSTRUCTION COST + LAND ACQUISITION COST</td>
<td>INTERNAL RATE OF RETURN (IRR) TARGET ≥12%</td>
</tr>
</tbody>
</table>

**Feasibility Testing**
UTA Students, having no prior financial experience, prove financial feasibility with Rules of Thumb templates for Hard Costs, Revenues, and Soft Costs to determine Total Development Cost.

Discounted Cash Flow (DCF) templates then establish Net Operating Income. A quick Feasibility Test Capitalizes Yr 3 NOI, which should be larger or equal to the Total Development Cost. The DCF Template also generates an Internal Rate of Return (IRR) target as investment return metric.

While architects traditionally manage projects by controlling project costs, this new methodology illustrates the advantages of managing both design and financial performance by created investment value.

**Dallas Regen Process Map**
Public/Private Partnership of Developers/City share Vision Planning, create a Parking Authority and public-purpose ReGen Corp as Master Developer, to facilitate TIF investments.

**Public / Stakeholders**
- UTA Designers
- Developer
- Vision
- ReGen Advisory Board
- Stakeholders

**Public Actions**
- Design
- Build
- Operate
- Maintain
- Improve
- Add
- Expand
- Change
- Redevelop
- Repurpose

**Projects**
- Innovative
- Top office
- 2nd Floor
- 3rd Floor
- 4th Floor
- 5th Floor
- 6th Floor
- 7th Floor
- 8th Floor
- 9th Floor

**UTA Center for Metropolitan Density**

**Office (Ex KPMG)**
- 1st Hotel/Res + Shared Garage
- 2nd level Retail/Galleries
- 3-20th: Hotel Residential

**Expected 80% vacancy within the 1 million sq ft KPMG office tower, with inadequate parking, prompted concepts to use an adjacent vacant lot for shared parking.**

**Solutions envision Mixed-Use Hotel/Residential with a shared Parking Garage supporting lease-up of the Office tower including new improvements such as Triple height Lobby; Pedestrian bridge to shared garage; Façade re-clad with energy-efficient window wall, and Penthouse offices.**

**Mixed Use site amenities such of Hotel/Retail/Foodservice choices/Art Galleries, as well as Office Tower, are connected with new streetscape paths to Museum District, Clyde Warren Park and Uptown Trolley.**
Dallas ReGen Master Plan
New SkyRide transit one-way loop connects three Mothership Parking Garages linked to high profile Office Towers and Mixed-Use Residential. Each proposed project is located on sites which are either vacant, owned by the city, or underutilized.

SkyRide
Sidewalk-mounted one-way single track people mover loops the core, servicing new Workplace and Residential options. Costs of $280M include 3 Mothership Garages created by a new Parking Authority with bonded parking revenues. SkyRide funded by Tax Increment created by new developments.

Innovation Institute + Tower
Research institute with resident area university scholars explores Innovation best practices, due to shifts in media and info technology. The Innovation Institute is a catalyst for an shaped Office Tower, targeted to DFW area strategic business units, connected to SkyRide people mover, and features a large Media Board to act as an interactive Electronic Forum for latest Innovation perspectives on industry issues.

Incubator & Arts Academy
Left above, shared Office incubator for Techies and Startups features truss roof, stick built structure over concrete garage to replace existing parking; Right above, Re-Use of vacant Entertainment Center as Arts Academy features Media Board visible from adjacent freeway.

Mixed-Use Residential
Mixed-Use Residential sites range from a re-purposed High-rise, to Low-rise stick built on concrete platform of ground floor Retail / Restaurants, and Stacked Townhomes, to create lively and walkable streetscapes. Users vary from young professionals in the Innovation District to Artisan Lofts and Family units.

Re-Purposed High-Rise
At Left Above, a currently unoccupied 1 M sq.- Office Tower is adapted in three vertical sections served by elevator stops, with Mini Lots at the lowest levels, Boutique Hotel at mid-Height, and Hotel-served Luxury Market Residential Units above.

MXD Hotel/ Residential/ Specialty Retail
At Right above, a four-corner site allows a unique urban cluster of Mid-Rise Residential and Hotel, creating an obvious city square at the intersection as a focus for Specialty Retail and Cafes. Parcels have arrival/drop-off and dedicated parking parking.

Cadiz Gardens Family Units & Stacked Town Homes
At far right below, Stacked Townhomes double the unit density while preserving scale, and five-story Cadiz Gardens features Family Units with secure courtyards and garages for each complex. Located near the Farmers Market, an adjacent “Grow-It Urban” linear city garden becomes a resource for Cadiz residents and Irving laboratory with interpretive Center for DISD students.

Feasibility & TIF Sources/Uses
Table Right shows TIF created; Table Below shows Capitalized Value of Office/Residential /MXD Retail/Hotel; Bottom Table shows TIF Allocations.
Creating A New District with Urban Infill
Infill projects form a new Urban District to jumpstart economic revitalization in the Nogalitos/Flores area. Once an integral San Antonio neighborhood, the Nogalitos/Flores area is now characterized by vacant rail yards, obsolete warehousing, deteriorated single-family housing, and eroded community facilities; many buildings were demolished rather than pay taxes. Targeted to specific niche markets, using stick-built 4-5 story and adaptive re-use of older structures, the infill scenario respects existing scale, celebrates the street grid and walkability.

St. Henry’s Church
St. Henry’s was the educational center of the Nogalitos district, and still owns adjacent properties, made vacant by neighborhood erosion. St. Henry’s could contribute land as Equity to a Community Developer, creating social-purpose MXD projects.

St. Henry’s Loft
Once vacant St Henry’s parking lots now feature Arcade Urban Lofts above, to recreate missing neighborhood scale and street retail /cafes in the Arcades.

Parque Del Sur
Along an abandoned rail yard, the 650 unit Parque del Sur residential complex contains larger units oriented toward families and creates a landscaped public park, which low scale Quadraplex housing units serve as a buffer to the adjacent existing community. Community Facilities include childcare, and swimming pool. Parque del Sur units are stick-built with independent parking garages and courtyards to serve the apartment project, along with the smaller scale 85 units quadraplex.

Feasibility Test and TIF Generated
Chart Below illustrates Capitalized Values exceed Development Costs for each component: TIF generated by Residential and MXD/Retail funds St. Henry’s Parking, new Park and an important Neighborhood Revolving Fund to mitigate expected Gentrification.

Estrella Cinema & Frida Lofts
Art-house Cinema and adjacent Frida Lofts with ground floor art galleries and cafes create a new arts-related theme for this I-10 accessible portion of the Nogalitos District. Close by existing galleries, and desire for Urban living in a secure District, will create demand.

Mercado
Both amenity and community symbol the Mercado offers fresh foods in a local marketplace with Cooking school and Events Center at the upper level.

Demographic Shifts
CIMD Research Journal #2 identified strong growth in Hispanic populations.

UTA - Samantha Doughty
UTA - Jenna Coffaro
UTA - Rita Martinez, Shivani Patel & Meghan Wolf
UTA - Erin Wagner
UTA - Jose Iglesias
UTA - Heidi Gonzales
UTA - Brian Vayner
UTA - Shivani Patel & Meghan Wolf
UTA - Erin Wagner
Residential
Four Parcels contain over 1,000 units including apartment Tower and three stick built five-story sites with landscaped courtyards, pools and dedicated parking for every complex. Each parcel has a range of Unit Types from Studio to 1-2 Bedroom units. The high-rise apartment Tower is adjacent the Trinity River Parkway with superb views, and features two Penthouse levels in addition to market-rate housing.

Mothership Garage
Replacing on-site parking, a Shared 980 Car Garage, which has an 18' tall 16,000 sf Bus Queue which becomes eventspace for family science fairs, robotic exhibits, and children’s festivals.

Existent Site - Opportunity for Private/Public Partnership
Undersized public land combined with residential, Office and Retail, produces significant Tax Increment Financing to construct public parking, open space and streetscape, thus creating substantial value driven by private sector initiative and by leveraging future taxes.

Fort Worth SciCiti
A New Science-Oriented Live/Work/Learn District
Sci Citi hosts Educational institutions, Research and Office space, and residential, to create a science-oriented community to train tomorrow’s workforce.

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GeoTech Institute
A new research Institute for Geo Technology and the Energy industry, houses visiting scholars and staff, and an auditorium shared by STEM and Digital Academy. Office Tower supports an Incubator for Tech independents and Energy Startups, and typical tenant space for Energy companies, and industry professionals, with rooftop Business Club with skyline views.

Interactive Plaza and Child Discovery Center
Plaza offers media events pavilion, solar exhibits and electronic kiosks linked to FW Library. New Childcare format with Discovery Center, has interactive exhibits as an extension to childcare during the day, open to the public on weekends.

Digital Media Academy
New concept for media arts college combines academics with man/machine interface graphics; Shared parking in Mothership garage for 450 students; features state-of-the-art media applications for simulation, gaming, artificial intelligence, and Fort Worth’s first-ever Digital Arts Museum.

STEM—Science Technology Engineering & Math
Newly-located high school will house 500 students with parking provided in adjacent Mothership garage. STEM will enjoy working relationships with major Ft Worth technology and aerospace companies and features a parametric designed facade that offers solar protection.

Digital screen façade showcases student café which overlooks the Plaza and crowned by the STEM Library. The accessible green roof has solar panel arrays. The current FWISD budget has allocated only $17M for STEM, but with this scenario, another $14 million can be obtained from TIF Proceeds.

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Financial Viability + TIF Proceeds
Chart Below compares Cost to Cap Values and proves creation of substantial Public/Private TIF subsidy for Learning Facilities.

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Fusion - A New Development Decision Platform

A significant, once a decade opportunity is looming with the integration of decision technologies for development which emerge from new separate applications and systems.

Computer-Aided Design (CAD), Geographic Information Systems (GIS), Building Information Management (BIM), and other Financial data, and Financial feasibility, and Integrated Project Delivery (IPD), will fuse into one platform, offering dynamically managed capabilities to conceptualize and construct.

New Platform Integration

Owners/Developers now drive integration by demanding coordination between design, engineering, and construction. Soon new platform technologies will be deployed to visualize design, zoning parameters, and financial analysis.

Emergent new capabilities will mandate interfaces at each level of development, tracking building systems and costs. But Financial feasibility testing is now missing. What’s needed in the mix is an integrated methodology to cost-effectively test financial feasibility and targeted investment returns, integrated with design and construction, to generate process feedback.

With Fusion, Design will be valued for integrated program solutions, but even more valuable for delivering a “Best Fit” project which balances Concept + Market Support + Financial Feasibility.

Five Forces influencing Fusion

Fusion diagram above shows Five Major Forces impacting the new Decision Platform:

1. Urban Planning & Civic Goals – GS tracking Industry Clusters, critical Infrastructure, and Underutilized sites; predicts transportation and Parking issues; and Zoning Parameters – all linked to CAD.

2. Market Forces – User Preferences, Quality of Life (QOL) and Market Data for absorption, rental rates, construction, and operating costs – all linked to Design and Feasibility templates.

3. Design – CAD integrated with Cost / Feasibility templates; Visualization linked to Civic goals for urban design; Building Information Management (BIM) linked to Integrated Project Delivery with Parametric Modeling and Additive Fabrication.


5. Construction and Occupancy – BIM automates Quantity Surveys for construction; Integrated Project Delivery fast tracks bidding and construction; Tenant Improvements become time-critical services; and Property Operations provides Performance Data.

Who Controls the new Decision Platform?

Who controls this new Decision Platform? Developers whose skills are finance and risk evaluation? Or Mega-Constructors combining design and construction? Architects may well be best, as architectural thinking extends from concept to construction. But Fusion demands they assume a greater role assessing economic feasibility. Architects have synthetic thinking to integrate and assess potentials, but need to acquire new management skills for directing technical specialties.

Architectural education must endorse these management skills, correctly seen as de-emphasizing design. A value proposition exists to take charge now, anticipating Fusion as one powerful, manageable platform, providing Architects to assume larger roles in Feasibility, Integrated Project Delivery, and Property Operation, the keys to monitoring performance. Architects could then master financial feasibility, stop managing Costs, and focus on Design Value.

Cloud-Sourcing – The Equalizer

Cloud-based access to scalable but expensive applications, and collaborative work programs, will significantly decrease costs, a powerful ‘Equalizer’ for both design firms, with skills in out-sourcing components to Hyper-Specialists for system gaps, able to compete with larger regional/national firms.

Fusion is Inevitable

Fusion is not a data problem, nor hardware constrained, rather a cultural shift between silos of jealously-guarded expertise, where fear of losing data and methodologies continues to fracture decisions. File formats and foundation programs allow more application interfacing, and investment in software and hardware by professionals is impressive, but the integrated platform has not yet surfaced.

Who controls this new Integrated Decision Platform and assumes the “trusted voice” is uncertain, as skills required will be technological, creative, financial, and operational.

Decreasing costs of computing, cloud based access, and proliferation of applications in the “Second Economy,” will enable start-ups to execute alongside legacy firms. Why Developer-driven, or implemented by Mega Organizations, or an Architect-led revolution – Fusion is inevitable.

The Virtuous Design Cycle

The “Holy Grail” for commercial development is Capitalized Value. Not Development Cost – a financial concept foreign to many Architects as they concentrate on a controlling costs alone.

Developers focus on Net Operating Income (NOI) – revenue after operating expenses, maintenance, and taxes, not including Debt. Financial institutions also view NOI as the source for Debt repayment.

Testing Financial Feasibility simultaneously with Architectural Design could become a Virtuous Design Cycle, proving that better business architecture can emerge from a fuller understanding of financial performance.

As architects learn to create commercial value, they can enhance architectural quality while simultaneously improving investment returns. This is a fundamental attitude shift – from controlling Cost to creating Value.

The Virtuous Cycle starts with a Simple Pro Forma listing areas and unit costs along with expected revenue rates by areas or units. After estimates of Hard costs and Soft costs, including developer’s fee and tenant allowances, the Simple Pro Forma provides a Total Development Cost.

Revenues and Expenses are then migrated to a 10-yr Discounted Cash Flow (DCF) model with assumptions on capitalization rates, financing fees, construction interest payments, and inflation. The 10-year DCF model assesses project revenues and expenses, such as property operations, taxes, CAPEX reserves, and vacancy rates, producing Net Operating Income (NOI), which is the best indicator for measuring risk and financial return.

The first stabilized year NOI, typically year 3, is then capitalized at a market rate, so that the NOI income stream is monetized as Building Value. Feasibility is comparing this Capitalized Value against Development Cost. If Value is lower, costs are cut, or more revenue space added. If higher, a positive Internal Rate of Return (IRR) results, leading directly to feasible investment.

TheS econd Pane l

The Virtuous Design Cycle Methodology

With this methodology, Architects could manage concepts to hit IRR target investment rates, a radical new position, as Design is simultaneously evaluated for contribution to architectural Quality, and to property Value. As developer’s management of risk drives Value, Architects who understand the revenue potentials of their work will have more powerful roles in development.

Jeffrey Ouellette, Vectorworks Global Product Marketing, discusses Fusion potential with C/MD Graduate Student Researchers.
Industry Outreach

Industry Outreach furthers CfMD goals of Density as an alternative strategy to manage growth. Speeches at industry conferences and civic groups, along with published articles, help us explore high density solutions for Urban Mixed-Use and In-Fill development.

CoreNet Harvard
Corporate RE Execs Conf at Harvard featured Director Buckley’s speech supporting the theme of “The Resilient City” including CfMD presentation.

Texas Society Of Architects
At TSA Ft Worth Annual Convention Director Buckley and Dean Gatzke presented the UTA Advanced Design Studio and CfMD research initiatives.

CoreNet UPENN
Director Buckley was keynote speaker at CoreNet’s Univ of Pennsylvania Conf, shown here with Paul Sehnert, UPENN Director of Joint Venture Development.

GSA Washington DC
Buckley was GSA Advisor on privatization, with Barbara Needles, outside counsel, Tim Tozer, GSA General Counsel’s office.

PREA Development Affinity Group
At right above, Will McIntosh, USAA Realty Group’s Global Head of Research listens to UTA Students present at PREA Boston.

New Orleans Downtown Development
Buckley keynote speech on “The Paradox of Open Space, Density and The City” from Left NOLA DD President Kurt Weigle, and Commissioner Karyn Keazzy.

Pension Real Estate Association

2014 Publications
“Urban Infill—Challenges & Opportunities” in Columns Magazine, AIA Dallas, and “Development Affinity Group Profile” in The Pension Real Estate Association Journal – both authored by CfMD Director Buckley.

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