

UTA CENTER FOR METROPOLITAN DENSITY CfMD RESEARCH JOURNAL

Funded by gifts from Billingsley Company & JHP Architects



2014 Vol 3



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

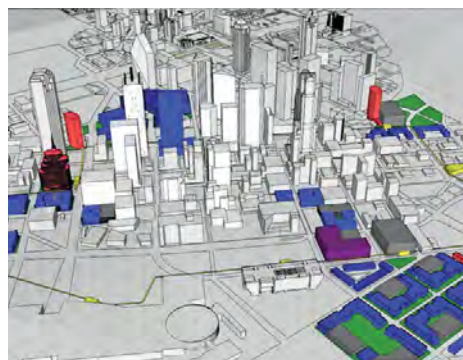
TABLE OF CONTENT



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.

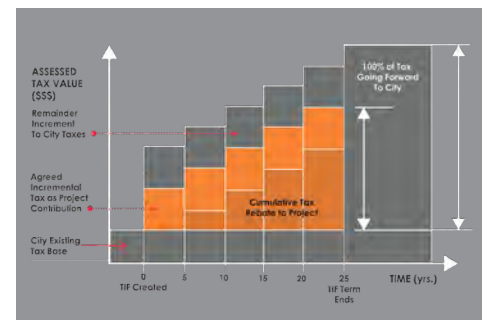
PAGES. 4-5



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.

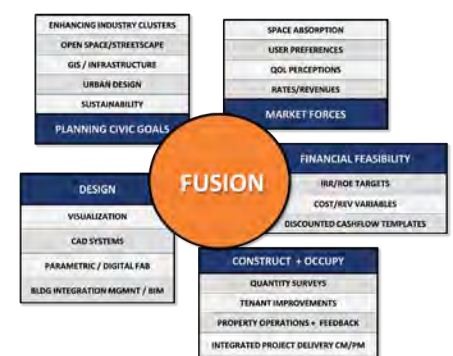
PAGES. 8-15



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.

PAGES. 6-7



FUSION: A NEW DEVELOPMENT DECISION PLATFORM

Essay on technological evolution of a new emergent Platform for Urban Planning, Architectural Design, and Real Estate Development within a single-point decision system.

PAGES. 16-17



MICHAEL P. BUCKLEY, FAIA
DIRECTOR
Center for Metropolitan Density
University of Texas at Arlington

The UTA Center for Metropolitan Density (CfMD) 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 settlement patterns, are of continuing interest to the CfMD Advanced Design Studio, as shown in the city revitalization scenarios in this issue. Further, an essay in this journal explores a new decision platform with design methodologies combined with analytics for testing real estate feasibility.



Best Fit Project
CfMD's Advanced Design Studio weighs the concepts of Design, Niche Market Support and Financial Feasibility to confirm the viability of an urban project. Architectural solutions must address targeted user demographics and demonstrate financial feasibility with Capital Stacks to achieve expected investor returns.



CFMD Research Journal Previous Issues
In previous issues of the CfMD 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 CfMD 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 CfMD 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. CfMD 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, CfMD 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. CfMD is now seeking a corporate sponsor to explore Industry Clusters with both tactical advantage and long-term strategic value.

Selected CfMD Advisory Board Member Quotes

UTA CfMD 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 CfMD Advisory Board Members to comment on the impact of higher densities. Please see this Journal's back cover for the complete list of CfMD 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 CfMD'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 JEAKINS, 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 lite rail and affordable food options in walking distance."



J. MARK WOLF, PRINCIPAL
JHP Architects

"Much of our practice at JHP is focused on high density urban and suburban Mixed-Use projects. As one of the originators of the UTA CfMD Advanced Design Studio, I am particularly pleased to see progress made in Urban Design, applied Financial Feasibility, and testing for prototype Urban Infill solutions."



ANDY TAFT, PRESIDENT
Downtown Fort Worth, Inc.

"The urban center of Fort Worth has embraced dense, walkable environments. While suburban density is a challenge, compact and well-designed places in the urban – and urbane– city center are in high demand. The UTA CfMD Advanced Studio's Vision Plans conceived for several areas of Fort Worth should inspire the quality dense environments envisioned in our 10 year plan."



DAN OLSEN, SENIOR VICE PRESIDENT
KeyBank Real Estate Capital

"Demographic trends show young professionals delaying both marriage and families, generating strong demand for active urban environments with more walkable and higher-density districts. Many new urban pockets across the country that focus on life/work balance are experiencing active growth in multifamily, office, and retail sectors."

Generously Sponsored during the academic year by HKS Inc., the CfMD Roundtable Series was held in their new learning center in downtown Dallas. Co-sponsors have included the Urban Land Institute North Texas chapter, and the Dallas Chapter American Institute of Architects for specific sessions.

Now in our fourth year, this series of strategic discussions are conducted off-campus in a Roundtable format, featuring industry experts from a variety of disciplines. The Roundtable Objective is to test topics in high density development, finance, product design, and to provide industry feedback for CfMD research.



Mapping the DNA of the Urban Core

We devoted several Roundtables to Downtown Dallas, now at a crossroads as the central core of the office workforce is facing substantial suburban competition. However, as Uptown has created a walkable and secure mixed-use district, including office retail and residential, it is now possible for the entire Dallas core to achieve the same results.

Uptown proved that emphasis on users seeking a more Urbane experience extends to all demographic groups and ages. The challenge for Dallas Central Business District (CBD) is to repurpose older Office Towers for Residential and change the Workplace to provide more flexibility, and provide new Learning Institutions to recruit talent.

Suburbs offer large floor plates, ease of access, and larger parking ratios, which urban areas cannot match. Yet Panelists recognized an intellectual energy to working in downtown, and that residential conversions, along with new stick-built residential, have combined to create significant live/work populations within emergent new districts.

In Dallas, more sophisticated local development players with resources are making large scale bets on the substantial opportunities presented by converting large, but aging office towers. Re-Mapping Downtown's DNA, the special environment for living and working, can provide a new and more urbane identity for Dallas' CBD.

Developers adopted new concepts including Micro Lofts and Family-Oriented Living, as well as the expansion of Specialty Retail with enhanced Foodservice choices, linked by Open Space with Imaginative Parks and tree-lined Streetscapes.

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, as 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.



DAN JEAKINS
HKS, Inc.



TD BRIGGS
Peleton Realty



LARRY GOOD
Good Fulton Farrell



JONAS WOODS
Heyman Woods



JOHN CRAWFORD
Downtown Dallas Inc.



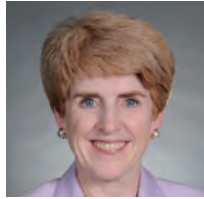
RALPH HAWKINS
HKS, Inc.



NEAL SLEEPER
Cityplace Company



JOSEPH PITCHFORD
Crescent Realty



LUCY BILLINGSLEY
Billingsley Companies



TED HAMILTON
Hamilton Properties



MIKE ABLON
PegasusAblon



SHAWN TODD
Todd Interests



BRIAN LESLIE
Prescott Group



RAMSEY MARCH
Stream Realty



MARTY COLLINS
Gatehouse Capital

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:

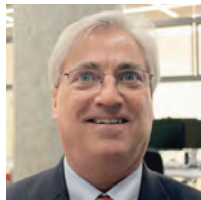
- The challenge for parking is unique in urban settings, as parking ratios are lower than suburban. More efficient parking management systems are used in Europe, hence opportunities exist for automated parking systems and with better shared use of expensive facilities for different users days/evenings.
- 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 now the hottest product with both financial institutions and new equity sources.



KARL STUNDINS
City of Dallas



DAVID CASTILLA
GenCap Partners



MARK GOODE
Kimley Horn



DAVID LEININGER
DART



MARK LAMSTER
Dallas Morning News
UTA Arch Faculty



KOURTNEY GARRETT
Downtown Dallas Inc.



KEVAN MCCORMACK
Metropolitan Capital



JONATHAN DIAMOND
Weitzman Realty

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 urbane 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.



DAN NOBLE
HKS Inc.



DON GATZKE
Dean UTA
Architecture



DON POWELL
BOKA-Powell



Barbara Becker, Dean UTA School of Urban and Public Affairs, with CMD Director Buckley

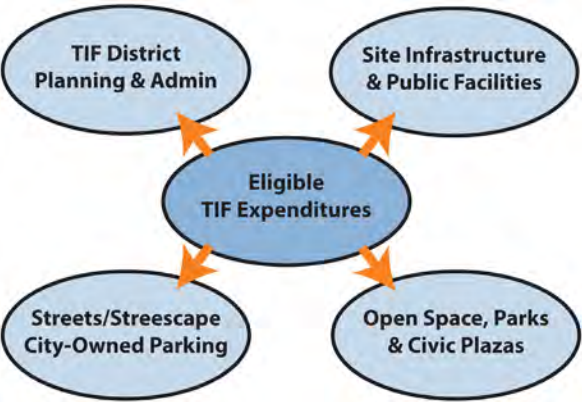


TIPTON HOUSEWRIGHT
OmniPlan Architects

Leveraging Private Initiatives with Public Partnerships

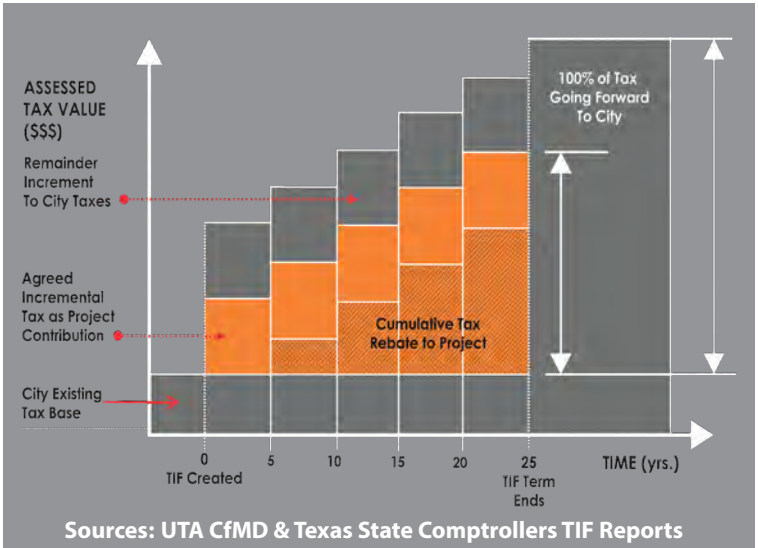
Tax Increment Financing (TIF) is a project subsidy methodology using the new increment of property taxes created by a project as a partial tax rebate to fund eligible public costs. TIF methodology uses taxes that would not otherwise be created, except for the initiative of the private sector – while 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.



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.



TIF 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.

The 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.

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



Metropolitan Live/Work Environment

Cypress Waters Master Plan shown above will contain 4 Million Square Feet of corporate and professional Office Space, and mix of 10,000 residential units with easy access to the Interstate highway network and DFW Airport.



LUCY BILLINGSLEY,
Partner, Billingsley Company

“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.”

Project Description

At full build-out, 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.

Cypress Waters TIF District and Leverage Generated

\$160 Million, a defined portion of the projected new taxes generated by the project, will be rebated over time for infrastructure paid by the developer. Both the city and developer will benefit from Cypress Waters Tax Increment Financing District; as from every \$14 of new Property Taxes generated, only \$1 will be rebated to fund improvements.

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.

Sources: UTA Erin Wagner, Individual City Websites – TIF Districts Information

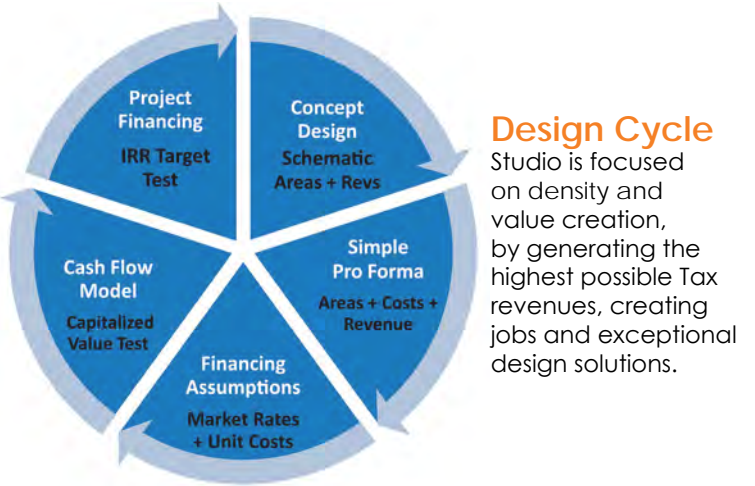
Selected TIF Districts	Fort Worth	Dallas	Houston	San Antonio
Number of Active Districts	10	18	22	24
Pre-Developed Property Values	1.1 Billion	3 Billion	5.3 Billion	980 Million
Project Current Tax Value	2.8 Billion	6.3 Billion	15.7 Billion	2.5 Billion
Incremental Property Tax Value	1.7 Billion	3.3 Billion	10.4 Billion	1.5 Billion
Tax Rebated to Project	107 Million	506 Million	904 Million	253 Million
Leverage Ratio	16:1	7:1	12:1	6:1

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.

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.

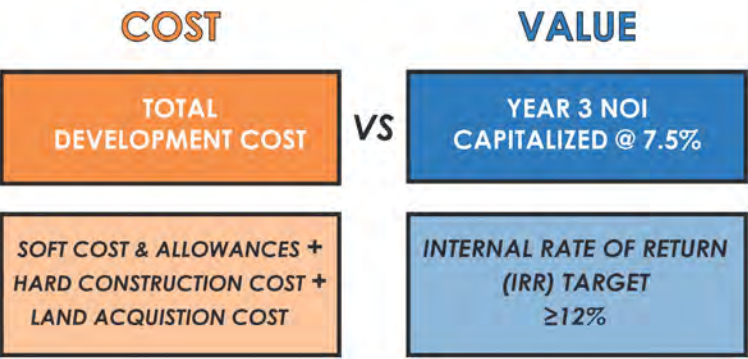


Studio Sponsors
The Advanced Design Studio held at HKS Inc. enabled presentations by HKS specialists and the Roundtable Series. Sponsors from L to R- Dan Noble, HKS CEO; UTA Architecture Dean Don Gatzke; Studio Co-Heads David Williamson, HKS and Michael Buckley, Director CfMD.



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 Tipton Housewright, Omniplan; Developer Ted Hamilton, Hamilton Properties; Dallas ISD Principal Michelle Houghton; CfMD Advisory Board Member Steve Kennedy; David Williamson, HKS; UTA Dean Don Gatzke.

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

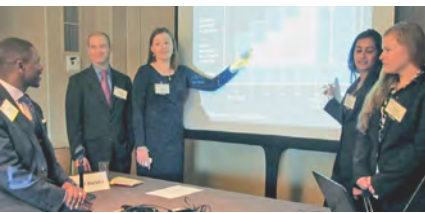
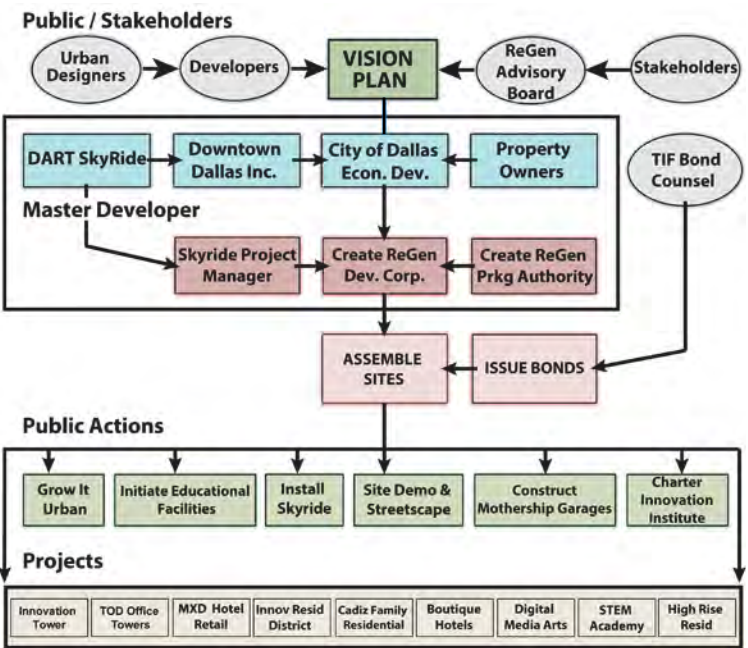


Feasibility Testing
UTA Students, having no prior financial experience, prove financial feasibility with Rules of Thumb templates for Hard Costs, Revenues, and Soft Costs to determine Total Development Cost.

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.



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



Peleton Realty Office Market Overview
Peleton Realty's Partner, T.D. Briggs, briefs UTA Students on current Office Market trends, space vacancy and Dallas' Urban Core migration issues



Corporate Real Estate Perspective
Wes Huff, Director of Real Estate for Baylor Healthcare, talk on medical office trends, reducing footprints, yet still deployed in urban settings.



Hotel Design
Eddie Abeyta, a specialist in HKS's Hospitality Practice, identifies major design issues in programming, layout efficiency and industry standards for Hotel projects.



UTA - Robert Casaus, Lizardo Meza, Rachel Timm & Elmira Ariarand



1st Hotel/Res + Shared Garage, 2nd level Retail/Galleries, 3-20th Hotel/Residential



Dallas MXD	Area	Parking Spaces	Units	TIF Summary	Cap @ 6%
Office (Ex KPMG)	755,000	1,028		Tax Created	\$7.1 M /yr
Hotel + Auction Hall	190,177	238	238	20% to Project	\$1.4 M/yr
Residential Tower	183,168	336	224	80% to City	\$5.7 M/yr
Retail + Cafes	41,500				
Shared Garage	511,410	Above		TIF Allocation	
Total Project SF	1,681,255	1602		Garage	\$18.4 M
Construction Costs	315,433,495	Hard/Soft/Land		Streetscape	\$2.7 M
vs. Capitalized Value	392,085,909	yr.3 NOI cap@7.5%		Funded	\$21.1 M
IRR=15.3%					

Dallas Regen

Re-Mapping DNA of the City Core

Urban history has proven that every viable region must have a strong city center. Yet Dallas is challenged by the large vacancies and lower premiums for older Class A high-rise offices, especially when compared to suburban occupancy. City center parking lots and underutilized parcels are held for future high density offices, which cannot occur before absorption of the existing vacant office buildings.

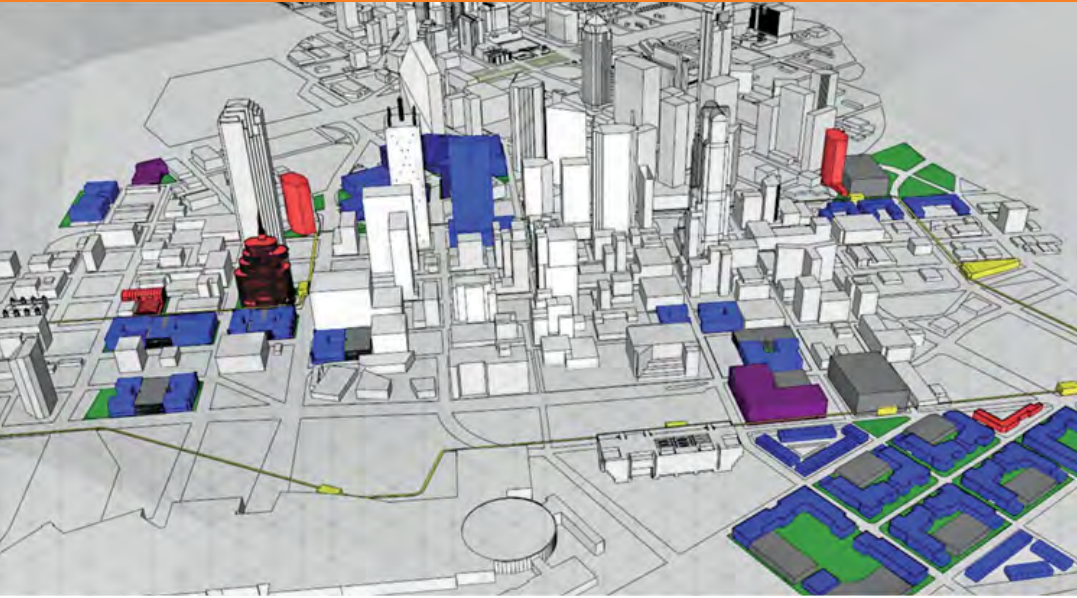
This Urban Design solution fills vacant parcels with Office/Retail/Residential and new Educational facilities served by an automated elevated SkyRide people-mover loop around the core, linking three new Mothership Parking garages and Office Towers to compete with suburban competition, creating new Workplace Formats. The Tax Increment generated pays for Streetscape, Parking, and Transit infrastructure. The result is a sustainable Live/Work/Learn environment for Tomorrow's Workforce, within a walkable city center, well-matched to Dallas's existing cultural and educational facilities, while offering new media/ educational options.



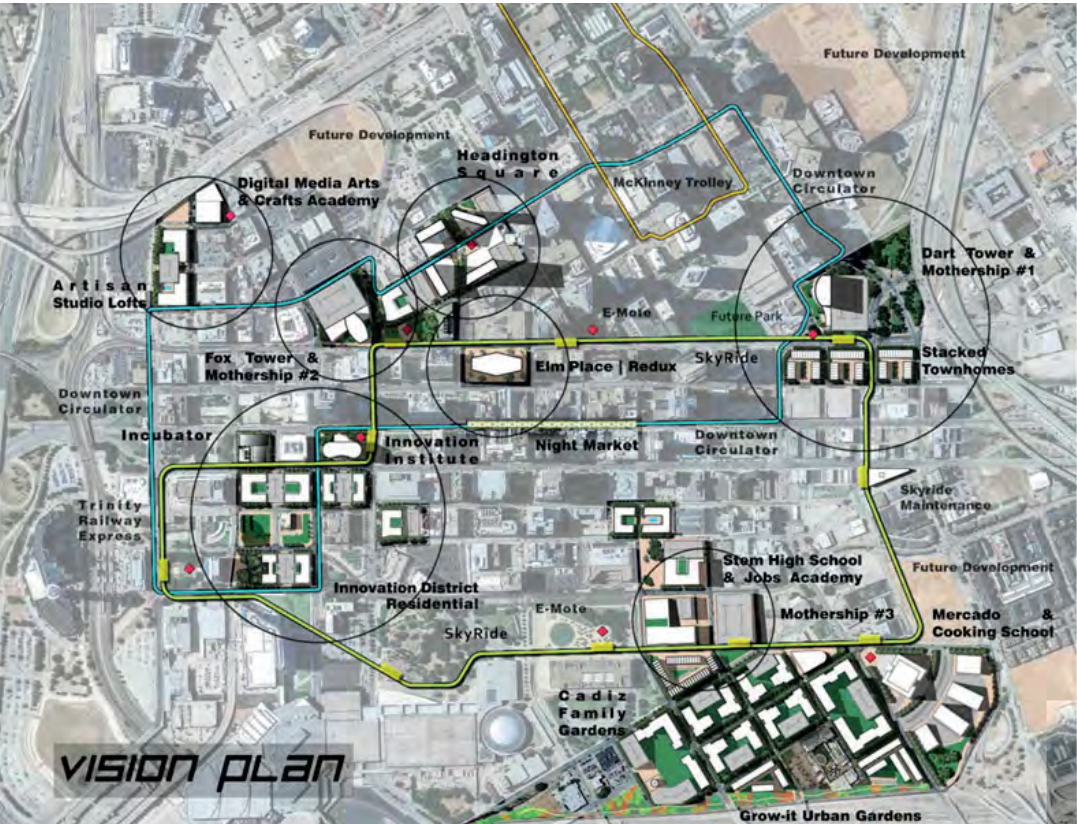
SkyRide UTA -Zachary Zimmerman
Sidewalk-mounted one-way single track people mover loops the core, servicing new Workplace and Residential options. Costs of \$280M include 3 Mothership Garages created by a new Parking Authority with bonded parking revenues. SkyRide funded by Tax Increment created by new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



UTA - Igor Draskovic



UTA - Zachary Zimmerman



Incubator & Arts Academy UTA - Adolfo Gonzales
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.



UTA - Erin Wagner



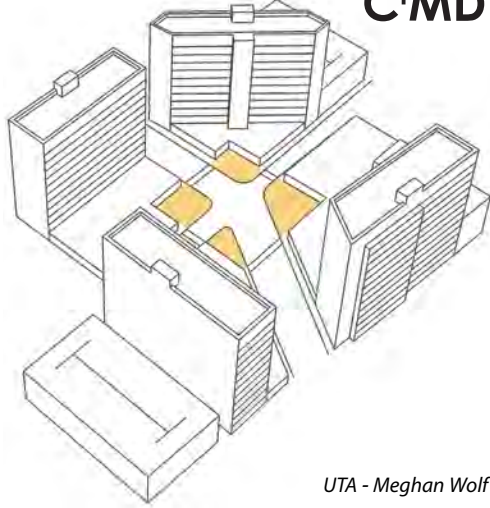
UTA - Rita Martinez & Alma Espinosa



UTA - Aldo Guerra & Candace Ramos



UTA - Josh Hallett



UTA - Meghan Wolf

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 sf- Office Tower is adapted in three vertical sections served by elevator stops, with Mini-Lofts 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.arking.

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 living 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

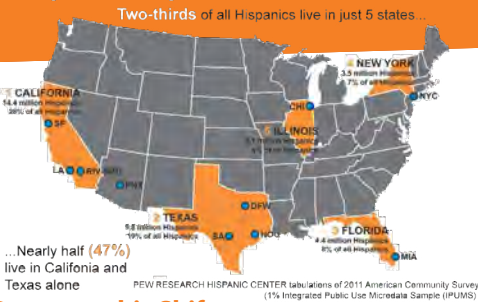
TIF Summary		Cap @ 6%
Tax Created	\$24.7 M/yr	\$410.8 M
33% to Project	\$7.6 M/yr	\$127.5 M
67% to City	\$17 M/yr	\$283.3 M

Dallas ReGen	Area (sf)	Parking Spaces	Res Units	Hotel Rooms	Total Dev Cost	Yr 3 NOI Cap Value
Office (Innov Instit+2 TOD Jt.Ventures)	971884	(*)			231,998,870	234,721,112
MicroLoft/Hotel/ (1Msf empty Office)	598,460	750	480	168	127,877,833	128,354,760
EX KPMG Office/Hotel/Lux Resid	1,570,344	1,602	224	238	315,433,495	392,085,909
Hotel/Residential/Specialty Retail	1,052,180	700	687	240	193,244,389	195,018,236
MXD Resid/Artisan Lfts/Stack'd TwnHms	2,394,934	1,536	1,483		278,907,207	299,776,988
Cadiz Gdns Family Residential	2,239,541	1,152	1,242		268,619,989	271,201,636
Cultural/ Learning Institutes	1156286	(*)			149,478,589	159,306,019
Total Private Development	9,983,629	5,740			1,565,560,372	1,680,464,660
Mothership * Garages @ SkyRide Nodes	1,020,000	2,400			53,233,500	
SkyRide People Mover					250,320,000	
Streetscape + Open Space + Grow It					30,000,000	
Total Public Infrastructure					333,553,500	
Funding Sources						
Project TIF Cap @ 6%					127,542,141	
Parking Authority Bond					54,000,000	
City Portion (of City TIF \$283,292,394)					76,005,679	
USDOT TIFIA Grant					76,005,679	
Grand Total Dallas ReGen	11,003,629	8,140	4,116	646	333,553,499	2,014,018,159

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.

Hispanic Population Concentration



Demographic Shifts

CfMD Research Journal #2 identified strong growth in Hispanic populations.



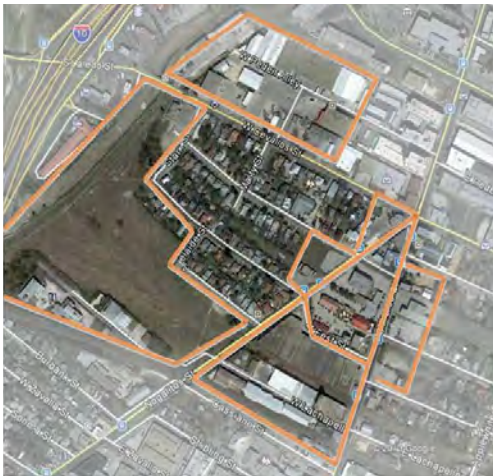
UTA - Brian Vayner

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.



UTA - Jose Iglesias



UTA - Rita Martinez, Shivani Patel & Meghan Wolf



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.



UTA - Samantha Doughty

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.



UTA - Jenna Coffaro

St. Henry's Court

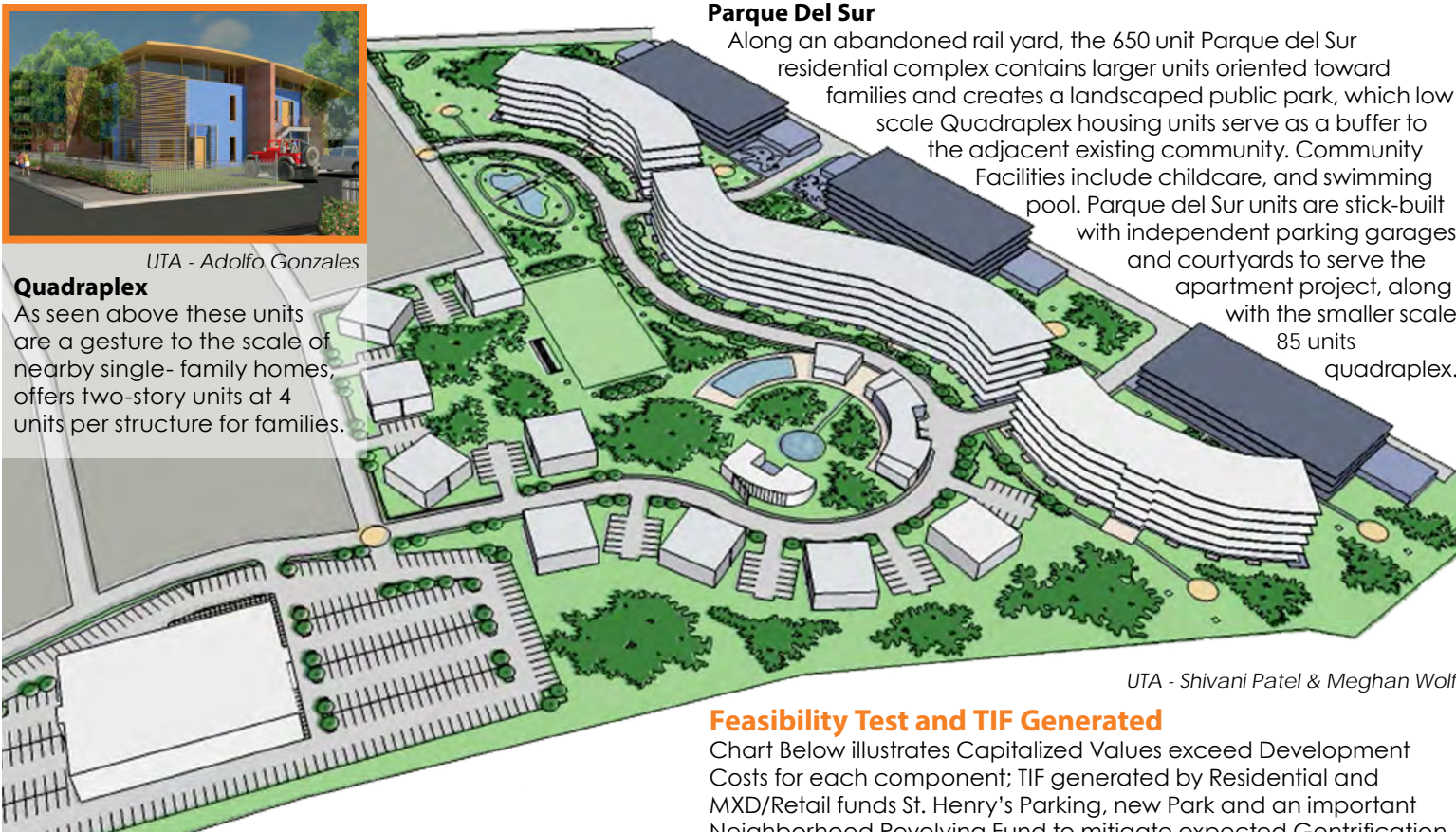
St. Henry's Church co-develops a Mixed-Use complex, shown at right above, with a public parking garage, and higher density Workforce Housing surrounding a new Plaza hosting community events.



UTA - Adolfo Gonzales

Quadraplex

As seen above these units are a gesture to the scale of nearby single- family homes, offers two-story units at 4 units per structure for families.



UTA - Shivani Patel & Meghan Wolf

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.



UTA - Erin Wagner

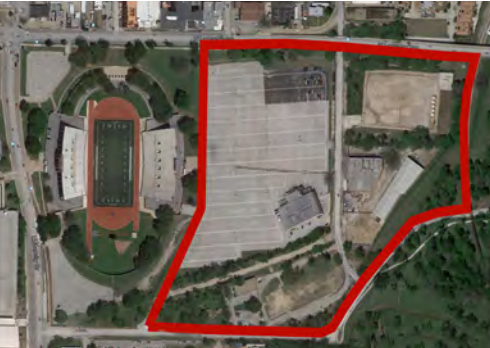
Mercado

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

Nogalitos/Flores District San Antonio	Area (SF)	Prkg Spcs	Total Dev Cost	Yr 3 NOI Cap Value
ParqDelSur Family Resid/Park/Pool	992,062	2,000	113,060,852	113,683,211
Quadraplex Resid	326,094	surface	69,659,342	70,432,431
St Henrys Court Workforce/ Retail	164,790	450	20,887,550	21,380,769
St Henry's Lofts / Retail 100 units	138,495	surface	8,942,715	9,220,062
3 Infill Projs-- Resid/ Street Retail	158,673	surface	19,720,739	20,516,543
MXD Resid /Pop-Up retail Bazaar	344,000	250	47,782,458	48,170,212
Mercado + Cooking Scl /Events	40,000	surface	11,065,092	11,334,976
Cinema/ Frida Lofts/Tierra MXD	186,600	surface	33,439,700	33,689,353
Grand Totals	2,350,714	2,700	324,558,449	328,427,557
TIF Summary				
			Cap @ 6%	TIF Allocation
Tax Created	\$6.5 M/yr	\$109 M		St Henry Pkng
33% to Project	\$930,000/yr	\$15.5 M		Park/ Pool
67% to City	\$5.6 M/yr	\$93.5 M		Streetscape
Revolving Fund provides neighborhood loans to mitigate effects of gentrification.				Revolving Fund
				Total Funded
				\$15.5 M

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.



Existing Site – Opportunity for Public/Private Partnership
Underutilized 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.

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

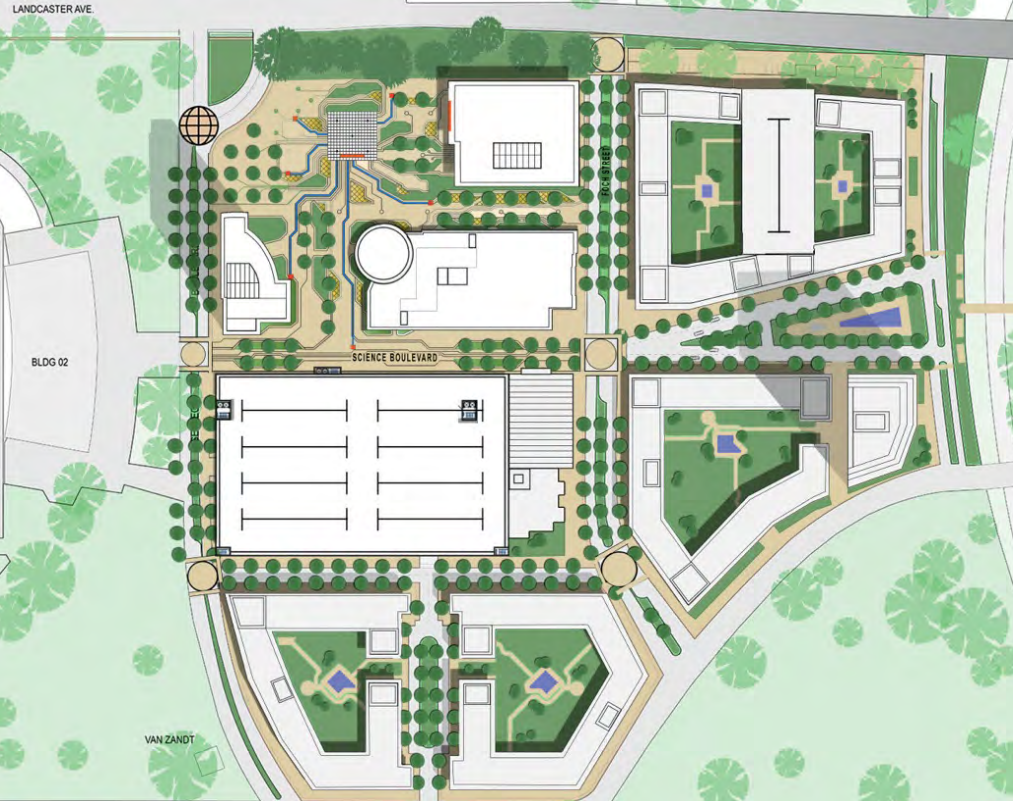


Residential
Four Parcels contain over 1000 units including apartment Tower and three stick built five-story sites with landscaped courtyards, pools and dedicated parking for every complex. Each parcel has a range of Unit Types from Studio to 1-2 Bedroom units. The high-rise apartment Tower is adjacent the Trinity River Parkway with superb views, and features two Penthouse levels in addition to market-rate housing.

This density of private investment in residential with ground floor Retail, and the Geo Tech Tower, generates all the Tax Increment financing support for Science /Learning facilities.



UTA - Victor Vielma, head producer of digital renderings



UTA - Porter Fuqua & Shivani Patel



UTA - Pamela Ward, Matthew Cesare & Ricardo Marin



UTA - Valon Maloku

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.



UTA - Stephanie Dubinsky & Elvira Ariarand



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.



UTA - Robert Casadus & Shivani Patel

STEM—Science Technology Engineering & Math
Merit-based 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.

The vertical circular glass drum shelters a 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 \$17 M for STEM, but with this scenario, another \$14 million can be obtained from TIF Proceeds.



UTA - Lizardo Meza & Rachel Timm

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.

Digital screen façade showcases Museum and student projects. Private institution with a Fee-based "community developer", receives \$4.25 Million TIF proceeds for Lab/Media Equipment, partners are Aerospace /Hi-Tech seeking media-savvy students.

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

SciCiti Ft Worth	Area (sf)	Prkg Spcs	Total Dev Cost	Yr 3 NOI Cap Value	TIF Created	TIF Expenditures	
GeoTech Insitute+Tower	160,000	400*	49,542,994	61,525,240	232,171	Geo tech/Auditor	1,895,000
Lo-Rise Resid+Tower 908 Units	726,400	1,500	204,959,989	225,095,363	1,689,244	SitePrep/Roads/Utls.	3,000,000
Street Retail	66,483	street	(inc above)	(inc above)	194,321	Interactive Plaza	1,600,000
Childcare/Discovery Center	24,880	shared	4,119,300	NA	NA	Streetscape/Parks	1,173,339
Digital Academy	85,000	280*	31,195,042	32,195,042	231,363	Digital Acad / Labs	4,700,000
Area/DevCost/CapValue/TIF	1,062,763		289,817,325	318,815,645	2,347,099	Replace Field House	1,250,000
STEM Merit High School	78,450	300*	15,376,299**	NA	NA	STEM Labs / Equip	14,000,000
Mothership Garage+ Buses	426,500	980	11,270,000	NA	NA	Shared Garage.	11,500,000
Grand Total SciCiti	1,567,713	2,480	301,087,325	Tif Cap@ 6%	39,118,339	Total TIF Spent	39,118,339

*Mothership Shared Parking **NIC TIF Contrib of \$14 M

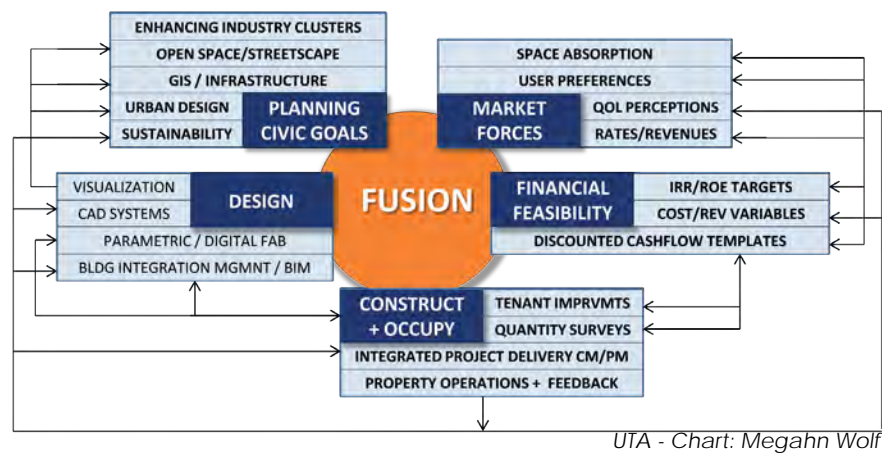
UTA - Pro Formas: Crystal Portillo

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 now separate applications and systems.

Computer- Aided Design (CAD), Geographic Information Systems (GIS), Building Information Management (BIM), Private Market/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 impacts.

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 continuously 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 valued 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** – GIS 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.
- 4. Financial Feasibility** – Building lease rates/unit costs woven into Cash Flow Models, and Design tested, comparing Capitalized NOI - against Total Development by CAD/BIM systems – continuously managed to IRR targets.
- 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 will control of this Decision Platform? Developers whose skills are finance and risk evaluation? 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, incorrectly seen as de-emphasizing design. A value proposition exists to take charge now, anticipating Fusion as one powerful, manageable platform, propelling 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 smaller flexible 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 IT Economy," will enable start-ups to execute alongside legacy firms. Whether Developer-driven, or implemented by Mega-Organizations, or an Architect-led revolution – Fusion is inevitable.

The Virtuous Design Cycle

Capitalized Value vs Cost

The "Holy Grail" for commercial development is Capitalized Value, not Development Cost – a financial concept foreign to many architects as they concentrate on 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 quality architecture can emerge from fuller understanding of financial performance.

As architects learn how 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.

Virtuous Design Cycle Methodology

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 arrays project revenues and expenses, such as property operations, taxes, CAPEX reserves, and vacancy rates, producing Net Operating Income (NOI), the best indicator for measuring risk and financial return.

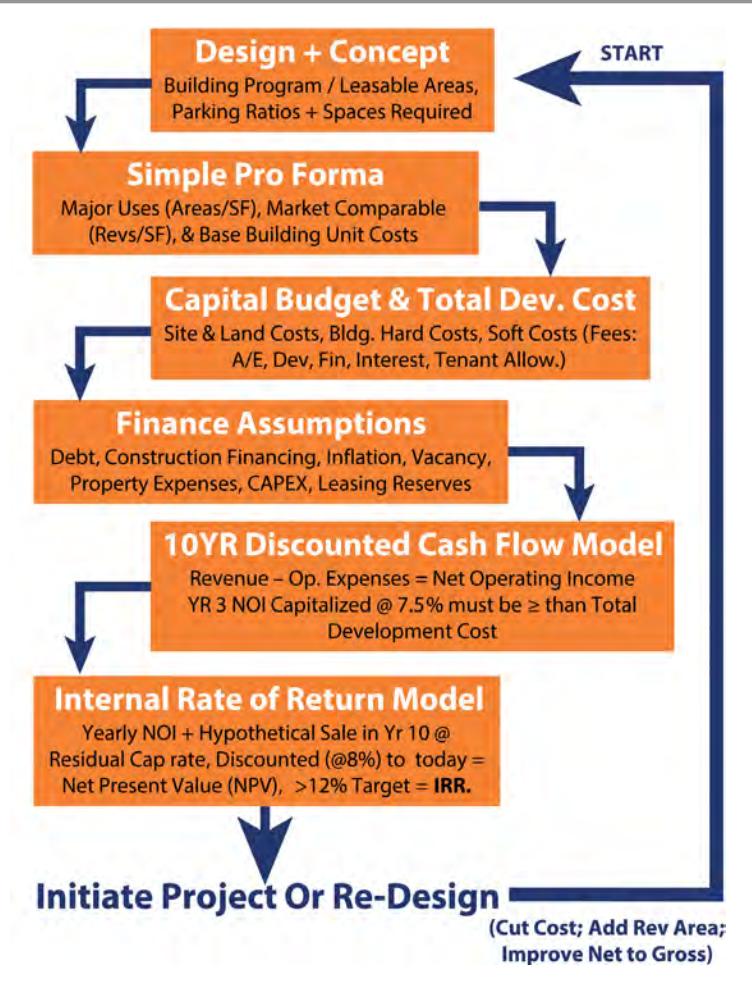
The first stabilized year NOI, typically Yr 3, is then Capitalized at a market rate, so that the NOI income stream is monetized as Building Value. Feasibility is comparing this Capitalized Value against Development Cost. If Value is lower, costs are cut, or more revenue space added. If higher, a positive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

Increased Impact for Design

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 potentials with CfMD Graduate Student Researchers.



Fusion: Burning Platform Issues

Fusion is a question of sequence; what components come before others, priority weightings, how responsibility is delegated and liability assigned. Fusion must provide idiomatic solutions, creating recognizable sub-assemblies at each stage of programming/design/construction/occupancy, for each team member. Ease of manipulation and efficient feedback are the goals.

Burning Platform Issues and Opportunities will evolve within each discipline, but all can be resolved, including:

- **Fear of Loss** – Compromised data sources and proprietary methods protected by Hyper- Specialists
- **Implicit Distrust** – Manipulation by developer or dominant team member
- **Sequencing Activities** – Management of deadlines; design feasibility, product details ; construction pace
- **Blurred Liability** – system errors and blurred professional decision responsibilities resolved with accessible and open working platform
- **Target Occupancy** – Security/ Maintenance and Systems Certification become early factors embedded in the Design/Feasibility Cycle

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.



NYC Center for Architecture
Director Buckley speech to the Fontainebleau Association featured CfMD District Revitalization examples.



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



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.



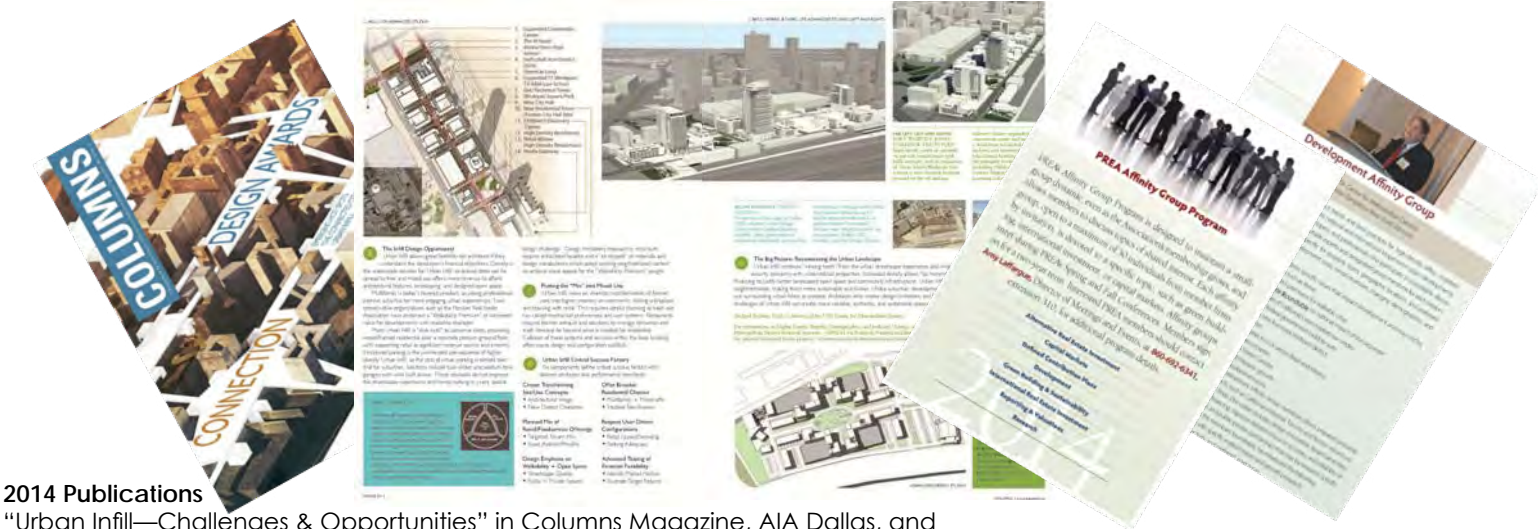
PREA Development Affinity Group
At right above, Will McIntosh, USAA Realty Group's Global Head of Research listens to UTA Students present at PREA Boston.



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 Kearny.



Pension Real Estate Association
PREA Executive Director Gail Haynes with UTA Students L to R Haynes, Rachel Timm, Meghan Wolf, Erin Wagner, and Shivani Patel.

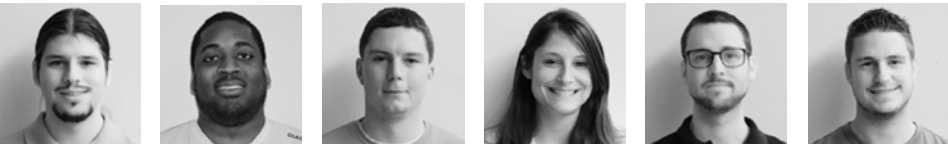


2014 Publications
"Urban Infill—Challenges & Opportunities" in Columns Magazine, AIA Dallas, and "Development Affinity Group Profile" in The Pension Real Estate Association Journal – both authored by CfMD Director Buckley

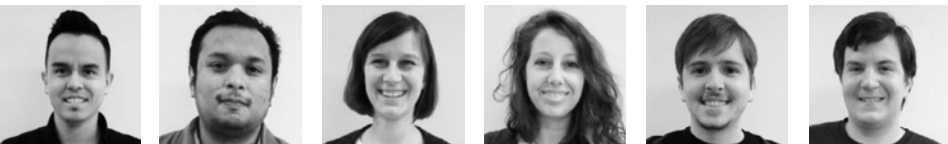
UTA Advanced Design Studio Graduate Students



Spring 2012
Armando Garcia, Charles Rutter, Amy Grant, Victor Mozquera, Vicky Emery, Aaron Trecartin, Taylor Cell, Carlos Mirelles, Clarissa Guevera, Roberto Nunez, Kevin Turk, Grant Hamilton, Maddy Heckler



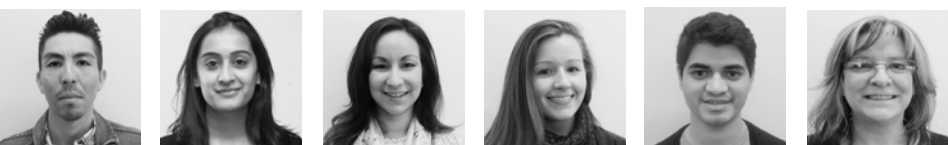
Fall 2012
Lawrence Agu, Jon Beck, Kristin Gonzales, Jessica Holt, Beth Hall, Daniel Ford, Jack Gryczynski, Justin Lowery, Matthew Morris, Kristin Perkins, James Lengen, Bryan Nors



Spring 2013
Jesus Bahema, Kelsey Liggett, Nick Rogers, Patrick Young, Andre Crabbe, Amelia Nguyen, Carlos Sierra, Adolfo Flores, Anja Goodwin, Jamie Wallace, Chris Alfstad, Adam Stanford



Fall 2013
José Iglesia, Adolfo Gonzalez, Brian Vayner, Jenna Coffaro, Josh Hallett, Alma Espinoza, Rita Martinez, Igor Draskovic, Megan Wolf, Erin Wagner, Candace Ramos, Zachary Zimmerman, Aldo Guerra, Samantha Doughty



Spring 2014
Elmira Ariarand, Robert Casarus, Matthew Cesare, Stephanie Dubinsky, Porter Fuqua, Valon Maloku, Ricardo Marin, Lizardo Meza, Shivani Patel, Crystal Portillo, Rachel Timm, Victor Vielma, and Pamela Ward



2014 Vol 3

UTA CENTER FOR METROPOLITAN DENSITY CfMD RESEARCH JOURNAL

Funded by gifts from Billingsley Company & JHP Architects



CfMD Advisory Board

Industry Leaders provide guidance on research topics, promoting dedicated research, and securing outside financial support.

MICKEY ASHMORE
President/CEO, UCR Dallas

JOHN CULLINS
Partner, Ernst & Young

DAVID LEININGER
SVP/ CFO, DART

ANN M. SAEGERT
Partner, Haynes & Boone

LUCY BILLINGSLEY
Partner, Billingsley Company

MICHAEL DALTON
Director, Archon Group

PETER K. MCKEE
Partner, Andrews Kurth

NEAL D. SLEEPER
President, Cityplace Company

CLIFFORD A. BOOTH
President, Westmount Realty Capital

RANDY GIDEON
President, Gideon Holdings

STEVE KENNEDY
Principal, Kennedy Assocs.

JOHN M. WALSH, III
President, TIG Real Estate Services

RICHIE BUTLER
Principal Prescott Group

RALPH HEINS
President, Primera Companies

DANIEL K. OLSEN
SVP, KeyBank Real Estate Capital

KAREN WALZ
Principal, Strategic Community Solutions

C. KEITH CARGILL
President, Texas Capital Bank Shares

PHILLIP HUFFINES
Co-owner, Huffines Communities

DAVID W. PARHAM
Attorney at Law, Baker & McKenzie

PHILLIP WIGGINS
President, Stratford Land

LELAND C. CLEMONS
President, LSPT Capital

DANIEL L. JEAKINS
Principal, HKS Architects

DONALD R. POWELL
Principal, BOKA Powell

J. MARK WOLF
Vice President, JHP Architecture

CfMD CONTACT INFORMATION



MICHAEL P. BUCKLEY, FAIA
Director,
UTA Center for Metropolitan Density
917.562.5081 buckley@uta.edu



DONALD F. GATZKE
Dean,
UTA School of Architecture
817.272.6042 gatzke@uta.edu



TANER R. OZDIL
Associate Director for Research,
UTA Center for Metropolitan Density
817.272.5089 tozdil@uta.edu



KEVIN SLOAN
Associate Director for Research,
UTA Center for Metropolitan Density
214. 459.1784 ksloan@uta.edu

CfMD STUDENT RESEARCHERS

RACHEL TIMM, Senior Editor
rachel.timm@mavs.uta.edu

SHIVANI PATEL
shivani.patel@mavs.uta.edu

ERIN WAGNER
erin.wagner@mavs.uta.edu

MEGHAN WOLF
meghan.wolf@mavs.uta.edu