Cornell Real Estate REVIEW

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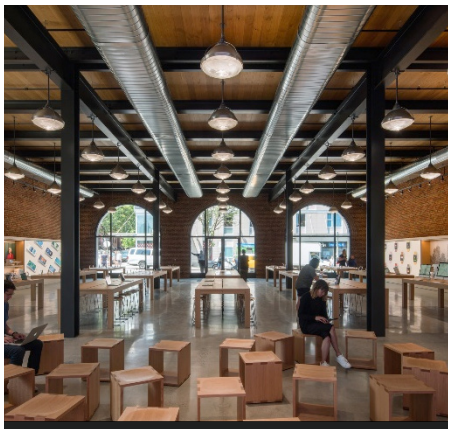

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Editorial Board

All manuscript submissions, photocopy and reprint requests, and subscription orders should be mailed to:
Cornell Real Estate Review — 489 Statler Hall | Cornell University | Ithaca, NY 14853 — crer@cornell.edu

Letter from the Editors

DEAR READERS,

The Editorial Board of the *Cornell Real Estate Review* is pleased to present Volume 16 (2018). The *Review* is a student-run publication under the direction of the Baker Program in Real Estate founded as a forum for faculty, professionals, and real estate students to focus attention on current issues in the real estate industry. The *Review* focuses on the interdisciplinary nature of real estate, blending informative articles on real estate practice with application-based academic research. The *Review* covers a broad range of issues from the various real estate disciplines including design, business economics, engineering, finance, law, planning, development, marketing, and property management.

This year we are pleased to publish several research articles that demonstrate the international strengths of the Baker Program students. The articles cover a broad range of topics revealing the complexities of global real estate. These topics range from multifamily financing in Colombia to office occupancy characteristics in Korea to an Apple Store redevelopment in Brooklyn.

We are also excited to highlight:

- International Baker Program Trek: Dubai and Abu Dhabi
- Cornell Real Estate Women Highlight: Tammy Jones
- Research Article: Colombia, Turning Towards Real Estate
- Research Article: Coworking and Historic Sacred Places

In addition to this journal, the *Review* staff has published weekly blog articles touching on technology, international real estate, and current events (http://blog.realestate.cornell.edu/). Below is a sampling of these articles.

- Dharavi: When a Slum Becomes a Goldmine
- The Impact of Assault-Style Weapons Bans on Retail Real Estate
- PropTech 101: Intro to Disruption in Commercial Real Estate
- Promoting Affordability Through State Regulation of TODs
- Grand Mosque Expansion Highlights Growth of Saudi Arabian Tourism Industry
- The Cuban Transition

The work that goes into publishing the *Review* is shared amongst a staff of twelve graduate students and two advisors. The work requires extensive time creating, editing, and formatting submissions. We would like to thank the contributors and the editors for the quality of content. We would also like to share our appreciation to Professor Michael Tomlan and Director Dustin Jones for their support and guidance.

We hope that you find this *Review* insightful and valuable.

Sincerely,
Daniel Wright (Baker ’18)
Matthew Farrell (Baker/MBA ’18)
Lera Covington (Baker/CRP ’20)

Baker Program

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Cornell Real Estate Women Spotlight: Tammy K. Jones

Tammy K. Jones has more than 24 years of experience in the commercial real estate industry investing and lending on behalf of pension funds, institutional investors, and family offices. Since 2009, Ms. Jones has served as both Co-Founder and Chief Executive Officer of Basis Investment Group (Basis). Under her leadership, Basis has succeeded in closing nearly $3 billion in commercial real estate debt and structured equity.

1. HOW DID YOU GET STARTED IN COMMERCIAL REAL ESTATE?

I think there is a common theme with many women and, particularly, minorities in commercial real estate. Many of us don't have much exposure to the commercial real estate (CRE) field so we often stumble into it. When I came to Cornell, I wasn't sure what I wanted to do, so I took an economics class, got strong grades, and decided to stick with the major. I actually took a Real Estate Finance class in the hotel school and I wish I could tell you that was the moment I knew I was going to work in real estate. But interestingly, "No"—that didn't happen. As graduation approached, I still didn't know what I wanted to do so I identified jobs that exposed me to a variety of options. I eventually joined the Financial Management Development Training Program at Equitable Life. Through this program I got to see the entire Equitable enterprise. When I got to Equitable Real Estate, the commercial real estate subsidiary, I fell in love with the field. Every transaction was unique and I quickly learned that no two pieces of real estate have the same fundamentals. I have always had an entrepreneurial spirit and I found that the real estate industry suited my personality well. That's how I got my start in CRE and I have never left since.

2. CAN YOU TELL US ABOUT YOUR EXPERIENCE AS A REAL ESTATE ENTREPRENEUR?

I have spent my entire career investing in and lending on CRE assets for big institutions, pension funds, and family offices. Every career move that I have made has prepared me for the next one. I started with Equitable on the equity side where I bought and sold CRE for the firm's general account and large pension funds managed on the company's advisory platform. From there, I moved to the debt side where I invested General Motors' pension plan capital in CRE debt strategies through GMAC CM. Next, I had the opportunity to lead CW Capital, a subsidiary of Caisse de dépôt. This was important because Caisse de dépôt wanted to develop a foothold in commercial real estate debt in the US and I was tapped to build-out the capital market lending platform. Under my direction, the office grew from 2 people to 80 people and closed 500 transactions totalling $6 billion. Building a platform with the support of a large institution was great because many of the steps were the same as what I had to do when I eventually started my own firm.

The economic downturn in 2007-2008 precipitated forming Basis. I was with CW Capital and, like at many other companies, folks were starting to lose their jobs. It was truly scary because no one knew when the market was coming back. While I kept my job, business was very slow. I began to think, "If I could launch my own company what would I do?" and started drafting a business plan. Despite these efforts I was still skeptical about going out on my

own. Eventually a quote from the book *The Alchemist* struck me and gave me the encouragement I needed. The quote states, "There is only one thing that makes a dream impossible to achieve: the fear of failure." This quote helped me realize that I had everything I needed to succeed if I stepped out beyond the fear.

So, I decided to finish the business plan. Since I had run the platform, I knew many family offices that were in real estate and had a lot of cash and would be good partners to help me launch the company. I made a list of 10 of them. I got down to number seven on the list, which means that things were not looking great, and then I was able to negotiate the deal with JEMB Realty. They gave me my first $100 million investment. It's a great story from the standpoint that I had to push myself to do it. I knew that the spirit to do something on my own was always in me since I was a little girl. My dad was a jazz musician and in business for himself. When you are a musician and that is what you do for a living, it's your business. Growing up, I observed the volatility of entrepreneurship through him. Those things were great lessons for me but also taught me that you have to pursue your passion. I have been so much happier after I took that leap, and I have never looked back.

3. HAVE YOU EXPERIENCED UNIQUE HURDLES BEING A MINORITY AND WOMEN-OWNED BUSINESS FOCUSED ON CRE DEBT?

The biggest challenge for any minority and women-owned business is access to capital. There are a couple of reasons for that. First, CRE is a relationship business. Many of us, as women and minorities, do not have generational wealth and relationships and capital that men have had over the years. CRE is a $15 trillion business that has very little diversity. Minorities and women often come into this business with somewhat of a disadvantage at being able to capitalize on the same kind of relationships that allow others to access capital. You need capital to be in commercial real estate. That was the big challenge for me, and I think that building a company in the middle of the downturn was another very significant challenge. As a woman and minority, you need to be able to have access to relationships and investment opportunities, but you also have to be able to create a sustainable platform. While these challenges are more significant for women and minority firms, the good news is that there are firms that are starting to navigate their way around it, including Basis and a few others. And it's important for us to win and succeed because we have to be able to create the pathway for the generation following us. It is not easy, and I will not sugar coat it, but I think there is progress.

4. WHAT CAN COMPANIES DO TO INCREASE THE REPRESENTATION OF WOMEN AND MINORITIES IN THE REAL ESTATE INDUSTRY?

The desire to create diversity has to start from the top. Companies have to understand that diversity is not just a box to check, it's not just a "do good" thing but it is a strategy for economic success. There is a study from McKinsey in 2017, a study from the Knight Foundation, and countless other studies that conclude that investing with diverse teams produces better performance. In my view, companies that don't embrace diversity are not acting in the best fiduciary role for their companies. Making sure you have a diverse team is a must in today's competitive environment. So how do you do it? First, diversity starts at the board level. All large companies have boards and even smaller companies have advisory boards. Companies should make sure these boards are diverse. If they all look the same and think the same, you will not have creative thinking or understand what you don't know. A diverse group brings diversity of thought! It's not just diversity of race and gender. It's also about diversity of thought.

Next, once you have diversity at the board level, then you will have folks that care about making sure that the C-suite also has some diversity. From that point you will begin to see more diversity naturally spring forth. Seventy-seven percent of the Basis team is comprised of women and minorities, and I think I have the best team in the U.S. I basically adopted this thing from the Rooney Rule that the NFL uses. This rule requires that, for coaching positions and other senior roles within the NFL, a minority has to be included in the search. It doesn't mean that the minority is going to get the job, it is just that they have to ensure a diverse pool of candidates. So, I have something that I call the "Tammy Rule" where any time we have an opening, a women and minority has to be in the pool of candidates. They might not get the job but it helps us ensure the we have a diverse choice of candidates.

5. DO YOU HAVE ANY ADVICE FOR CURRENT BAKER STUDENTS?

Students need to start building relationships now. Build your network now. I didn't know that when I was younger. You have to find people that support your vision. I call them "route supporters," people that will help you along your journy. Use social media and other resources that are at your fingertips. It will not be easy, but you have the tools and if you really start building upon your relationships and network now, that is going to afford you a much better chance to build a successful career.

Alumni Highlight: Ian McKay

Ian McKay is a member of the Portfolio Management team at Clarion Partners. Ian manages projects for the firm's value-add and development funds.

Prior to Clarion Partners, Ian worked as a Summer Associate in the New York Development Group at The Related Companies in Manhattan. There, his responsibilities included acquisitions and deal structuring functions for multifamily and mixed-use developments.

Ian holds a Masters Degree in Real Estate Finance from Cornell University and BS/BA from Babson College. Ian is a member of ULI and the ULI Multifamily Bronze Council.

1. CAN YOU DESCRIBE YOUR CURRENT ROLE AT CLARION PARTNERS?

I am on the Portfolio Management team at Clarion Partners where I manage the day-to-day functions of various private equity funds, primarily those employing development and value-add strategies. Essentially, my team represents our clients/investors in the direct real estate investments made for a given fund. Among my responsibilities are devising the value creation plans for fund investments, working with Clarion Asset Management teams (and often a joint venture partner) to implement those plans, and communicating progress to investors.

2. WHAT CONSIDERATIONS GO INTO THE PORTFOLIO MANAGEMENT DECISIONS THAT YOU MAKE FOR CLIENTS?

Many decisions are functions of risk and return. Considering the path that affords the investor the greatest risk-adjusted return within an investment strategy is fundamental to a portfolio management role. My team often makes judgements about the condition of a market and a given property sector a year or two down the road—common timelines for delivering development or value-add investments to market. The natural corollary to "where" and "when" is "how," and whether a given project would best be executed with a JV partner or in-house.

3. WHY DID YOU CHOOSE YOUR CAREER PATH/ WHAT LED YOU TO WHERE YOU ARE?

In my early career, I worked on the construction side of the industry and I always had a desire to conceive of projects rather than focusing on their physical execution. The Cornell Real Estate Program, now Baker, was the stepping stone for me to do that.

4. HOW ARE YOU USING YOUR BAKER EDUCATION? WHAT SKILLSET/KNOWLEDGE IS IMPORTANT TO BE SUCCESSFUL IN THE PORTFOLIO MANAGEMENT FIELD?

Portfolio management requires understanding and managing risk while manufacturing appropriate returns for that risk, all within a project management environment. It also requires the effective and continual communication of progress to investors. The Baker program steeped me in all things real estate, of course, but the academic environment allowed me to develop the specialized analytical and project management skills required in institutional real estate investment.

5. YOU WORKED IN CONSTRUCTION PRIOR TO COMING TO BAKER. HAS THIS BACKGROUND BEEN BENEFICIAL IN YOUR PORTFOLIO MANAGEMENT ROLE?

It certainly helped. I have found it advantageous to understand the critical construction controls of schedule and budget, and also how a project fits into existing infrastructure, the order in which it goes together, and the ability to visualize what is inside a wall or under a slab.

6. WHAT ASPECT OF YOUR CURRENT ROLE DO YOU ENJOY THE MOST?

One of most rewarding parts of my role is creating built environments that the markets demand and that people want to be in, whether they be highly productive in the case of office, highly functional as in the case of industrial properties, or more demographically focused as in multifamily. It is also gratifying to create value through an action plan, and on a more macro level, constructing a well-balanced portfolio of these types of investments and affectively communicating that strategy to investors.

7. WHAT HAS BEEN YOUR MOST MEANINGFUL PROJECT OR WORK-RELATED EXPERIENCE POST BAKER?

I had the opportunity to work on the repositioning of a Class A office asset known as ilo at Playa Vista, in Los Angeles, CA. For me it was a particularly interesting project because we managed the repositioning in-house, making the design decisions and overseeing the implementation directly, versus through a joint-venture partner. I enjoyed the experience of being part of a team managing such a project and enjoyed seeing the positive market reaction to it.

8. WHAT REAL ESTATE TRENDS DO YOU EXPECT TO SEE IN THE NEXT 5-10 YEARS?

I believe we are in a very interesting time when the elements of the shared economy are intersecting with the traditional institutional real estate business, leading to opportunities for greater efficiency. Uber or other shared transportation services could lead to a time when less parking is needed and we will be considering how to repurpose structured parking, for example. The market is also demanding more flexible products. Take for example, the rise of flexible office products like WeWork, and apps like Breather that rent conference rooms on the fly. New companies tend grow and shrink quickly, requiring flexibility. If a landlord spends a fortune in tenant improvements for a costly custom buildout, they will need a long, inflexible lease that may not fit the tenant's needs down the road. New companies tend to grow and shrink quickly, requiring flexibility. If a landlord spends a fortune in tenant improvements for a costly custom buildout, they will need a long, inflexible lease that may not fit the tenant's needs down the road. Building more flexible buildouts that can be reused by future tenants lowers the lead time and cost of re-tenanting, allowing the landlord to be more flexible—a win for both landlord and tenant.

9. WHAT IS YOUR FONDEST MEMORY FROM CORNELL?

Happy hour with friends on the terrace of CTB on any given sunny afternoon, followed closely by sailing on Cayuga.

10. DO YOU HAVE ANY ADVICE FOR CURRENT BAKER STUDENTS?

Stay creative, embrace change, and foster lasting relationships with your peers. I met some of my closest friends at Cornell, and it is a great network to leverage personally and professionally.

Ian's insights are his alone; he does not speak on behalf of Clarion Partners, LLC. This material is not an offer to sell or a solicitation of an offer to buy any security.

Alumni Highlight: Rob Dunn

Rob is a Graduate of the Baker Program in Real Estate, Class of 2010.

After graduating from the Baker Program, Rob took on a role at Long Wharf Capital, a Boston-based private equity real estate manager focused exclusively on value-added investments in the U.S.

Currently, Rob is a Director at Hubb NYC Properties.

1. WHAT IS HUBB NYC?

HUBB NYC is a real estate operating company that owns and manages multifamily and retail assets in New York City. Since our inception seven years ago, we have purchased 40 investments. Our portfolio comprises approximately $800 million in gross asset value which includes approximately 450 rental apartments and 80 retail tenants, all in Manhattan.

2. HOW DID YOUR BAKER PROGRAM EDUCATION HELP YOU BE SUCCESSFUL IN YOUR CAREER?

My Baker Program education set me up for my current career path. Real estate finance has been an important aspect of my entire career. Before the Baker Program, that skill set was non-existent. I never would have gotten the opportunity to work in Fidelity's private real estate group without this program.

3. HOW HAS THE CORNELL NETWORK BENEFITTED YOU OVER THE YEARS?

The Cornell network opens doors when you want or need them to be opened. The amount of successful alumni, particularly in real estate, provides a competitive advantage when networking throughout the real estate community. Cornellians want to help Cornellians. You just need to ask. I never obtained a job through my Cornell network, but I certainly have met a lot of good people.

4. WHAT REAL ESTATE TRENDS DO YOU EXPECT TO SEE IN THE NEXT 5-10 YEARS?

I believe that real estate will continue to follow the social trends that are already underway. These trends continue to become more influential when thinking about the use of real estate. E-commerce, WeWork, co-living/micro-living are all examples of these concepts. The need for square footage is shrinking from a traditional viewpoint. That concept can be applied through many asset classes such as retail, office, and multifamily. We will always need brick and mortar locations, but less of it.

Case Competitions

1st Place 2018 ULI-Hines Competition: Paul Heydweiller, Peter Romano, Rawinthira Narksusook, Jamie Mitchell, Gary Esposito with Gerald Hines and Ralph Boyd

Cornell graduate real estate students continued their success in national real estate case competitions over the past year, including a second-place finish in the 2017 Impact Investing in Commercial Real Estate Competition hosted by the University of Miami, a third-place finish in the 2017 The Case Competition hosted by MIT, and a finalist finish in the 2017 Kellogg Real Estate Venture Competition hosted by Northwestern. Cornell teams have also been selected as finalists in the 2018 ULI-Hines Student Competition, 2018 The Case Competition hosted by MIT, and 2018 Impact Investing in Commercial Real Estate Competition hosted by the University of Miami; final placements in these competitions will be announced by the end of the 2017-2018 academic year.

1. IMPACT INVESTING IN COMMERCIAL REAL ESTATE COMPETITION HOSTED BY THE UNIVERSITY OF MIAMI

In 2017, Cornell's team of Ravikanth Pamidimukkala (Baker '17), Ana Kalugina (Baker/MBA '17), and Miguel Klipstein (Baker/MBA '18) proposed the purchase and development of a 6.5-acre property in the Lincoln Park neighborhood in the north side of Chicago, Illinois. The vacant property is on the North Branch Chicago River and is zoned for manufacturing. It is in the Clybourn Corridor Planned Manufacturing District (PMD) which was created in the late 1980s to promote industrial sites in Chicago. The efforts of Mayor Rahm Emanuel have helped turn these aging and unused/underutilized sites into socially responsible developments. To take advantage of this, the team proposed a 1.7 million square foot mixed-use development targeting millennials who are priced out of expensive housing near downtown. Cornell's proposal was awarded second place.

In 2018, the Cornell team of Miguel Klipstein (Baker/MBA '18), Alejandro Garza (Baker '18), and Mark Hughes (Baker '18) was selected as a finalist and will present their proposal in April 2018. The team is proposing the revitalization of an unused bridge in Miami, Florida to create a vibrant retail destination on Biscayne Bay. The team would negotiate a ground lease with the City of Miami for the bridge and the project would utilize old shipping containers to adapt to fit retailer needs. The project would have 40,000 square feet of retail space and include a connecting dock for boats.

2. THE CASE COMPETITION HOSTED BY MIT

Cornell placed third in the 2017 The Case Competition, hosted by the MIT Alumni Association Center for Real Estate. Ravikanth Pamidimukkala (Baker '17), Matthew Farrell (Baker/MBA '18), Morgan Zollinger (Baker '17) and Ershad Chagani (Baker/MBA '19) were tasked with conceiving a development plan for Kushner's 85 Jay Street

in Brooklyn. With a high basis and challenging zoning restrictions, the team had to get creative. They proposed a complex 800,000 square foot mixed-use development that included a restaurant incubator, educational space, residential space, retail, and a below-ground last-mile distribution facility. Cornell has placed as a finalist at the MIT competition in the past three consecutive years and has won the competition three of the last seven years.

Cornell also has two teams that have been selected as semi-finalists for the 2018 competition. In April, those teams will present their proposals in San Francisco. The competition site is former Justin Herman Plaza along the Embarcadero in San Francisco. The barren public space, now simply known as Embarcadero Plaza, has long been burdened by a lack of capital investment and has devolved into a public showplace for the aggressive problem of chronic homelessness that is challenging San Francisco. The team of Rawinthira Narskusook (Baker ’18), Lauri Curi de Mattos (Baker ’18), Chris Baker (Baker ’18), and Alejandro Garza Peña (Baker ’18) proposed a mixed-use development named VIDA that stimulates the interaction and promotes the well-being of people of different ages, backgrounds, races, and lifestyle. Through a business model that brings investors and community together, buildings and public spaces are designed to enhance the public realm, bringing in traffic, tourism, and safety to the Embarcadero area. The second Cornell team of Dustin Dunham (Baker ’19), Julian Karel (Baker ’19), Phil Tapia (Baker ’18), and Puttikit Suvarnapunya (Baker ’19) proposed a mix of office, residential, retail, and a public cultural park. The development creates a connected and optimal public space in the city while keeping the unique San Francisco waterfront views. Outside of delivering strong financial returns, the development will provide both financial and physical resources toward the elimination of homelessness in San Francisco and steps toward solving the affordability crisis in the city.

3. KELLOGG REAL ESTATE VENTURE COMPETITION HOSTED BY NORTHWESTERN

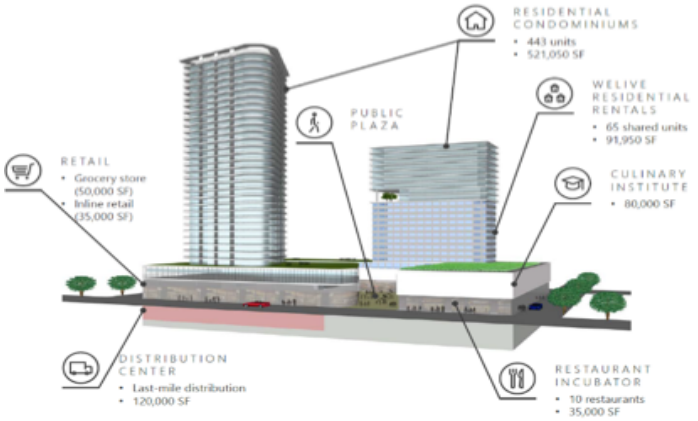
Cornell’s team for the 2017 Kellogg Real Estate Venture Competition consisted of Chris Baker (Baker ‘18), Matt Kenny (Baker ’18), Nick Morris (Baker ’18), Archie Preissman (Baker ‘18), Tej Reddy (Baker ‘17), and Harrison Willis (Baker ‘17). The team pitched a live 108-key extended stay hotel development deal in a suburb outside of Chicago. Cornell advanced into the finalist round, beating out over twenty top MBA programs from around the world including Northwestern (Kellogg), University of Chicago (Booth), and UCLA. INSEAD took home first place with a proposal to develop workforce housing using shipping containers.

4. 1ST PLACE: ULI-HINES STUDENT COMPETITION HOSTED BY THE URBAN LAND INSTITUTE AND HINES

Cornell’s interdisciplinary team of Gary Esposito (M.Arch ‘18), Paul Heydweiller (Baker ’18), Jamie Mitchell (M.Arch ’18), Rawinthira Narksusook (Baker ‘18), and Peter Romano (Baker/MRP ‘19) placed 1st at the 2018 ULI-Hines Student Competition. The team was tasked with presenting a development proposal for a 16-acre site on Toronto’s East End, a historically industrial area that is now seeing rapid conversion into a mixed-use community. The team’s project, named Montage, proposed a new three million square foot mixed-use neighborhood centered on a performing arts center and amphitheater, an eight-acre elevated riverside park constructed over an adjacent parkway, and a traditional street grid layout. The 2018 site was the competition’s first foray outside of the United States.

This represents the first finalist placement for a Cornell team in the 16 years of the competition. The team placed first out of 122 teams representing 59 universities in the United States and Canada. The team would like to thank Suzanne Charles (Assistant Professor, Department of City and Regional Planning, Cornell) for her guidance and support.

2017 Finalists Kellogg Real Estate Compeition: Matt Kenny, Chris Baker, Harrison WIllis, Nick Morris, Tej Reddy, Archie Preissman



3rd Place 2018 MIT Case Competition: Brooklyn mixed-use

International Trek: Dubai and Abu Dhabi

International Trek to Dubai: A City Built in the Desert

Author: Sean Mashian

In December 2018, the second-year students of the Baker Program in Real Estate had the pleasure of visiting the United Arab Emirates. The main goal of the annual trek is to get an understanding of how the interests of the stakeholders in real estate differ globally, both in terms of private and public goals. To do this, the students first needed to get an understanding of the recent history of Dubai and Abu Dhabi and their rapid rise to prominence as a major worldwide commercial center.

The UAE is one of the Middle Eastern nations with "black gold," possessing about one-seventh of the world's proven crude oil reserves. One aspect of the riches that tends to be overlooked is how quickly the country monetized the oil and how much of an impact this had on transforming the country's built environment. Students of the Baker Program experienced the transformation with a day in Old Dubai. Compared to the sprawl of the new, urban Dubai built in the past few decades, Old Dubai was surprisingly small and rural. "I think it is incredible how Dubai grew from being a primarily tribal culture to having a skyline like Manhattan's in less than half a century," said second-year Baker student Mark Hughes. "It really shows you how quickly real estate development can occur when the government works hard on planning and putting infrastructure in place for the future." Walking through Al Fahadi Street, students were surprised to learn that much of the old housing was inhabited by wealthier local Emirati people until the 1950s. The Bedouin tent style housing dominant in the area until the discovery of oil contrasted dramatically with the massive skyscrapers students could see down the river.

Like Dubai, neighboring Abu Dhabi has experienced massive financial growth. The Abu Dhabi Investment Authority (ADIA), one of the firms visited by Baker Program students, has over $800 billion in assets under management worldwide. When ADIA first came into existence in 1967, it was "operated out of tents." As Abu Dhabi accumulated wealth in the late 20th century, it also began to see the need to diversify its assets beyond oil. Real estate became one of the main mechanisms employed, leading to investment both domestically and internationally. For the future, Abu Dhabi has invested heavily into creating more artistic and culture-driven activities than has Dubai. The Louvre Abu Dhabi, Ferrari World, and Sheikh Zayed

Grand Mosque have all been unveiled in the past 10 years and draw millions of tourists annually.

Dubai also used real estate as a method of diversifying and began its development of a central business district (CBD) around the Dubai World Trade Centre (DWTC). Built in 1978, the 39-story DWTC was the first true skyscraper in the country. Since then, a CBD emerged around the DWTC that compares to some of the world's most impressive collections of buildings. The Burj Khalifa and Dubai Mall provide numerous dinner venues overlooking the CBD. Buildings such as the Cayan Tower, Burj Al-Arab, and Princess Tower are within view. While all of these iconic buildings were developed in the same area, much of the CBD can be found on a trip down the lively Sheikh Zayed Road or a ride on the Red Line of the Dubai Metro. "I'm surprised at how modernized the transportation options are in Dubai," said Jiwon Park, third year Baker/MBA. "While the city is much more sprawled out than Manhattan, it seems just as easy to get around with all the taxis, buses, and subway stations."

The booming economy and growth of the main CBD has led to other, smaller business districts in Dubai. Two of these are the Dubai International Finance Centre (DIFC) and the Dubai Design District (D3). At the DIFC, members of the IFC spoke about the goals of the financial hub. The tax-friendly DIFC was created within the main CBD to help spur business and encourage international investors to come to Dubai through the use of its own independent legal and regulatory framework. D3 is the business district located just outside of the main CBD built to spur innovation and encourage creativity and entrepreneurship. At D3, Dubai Holding stressed its core tenet of spurring innovation.

The CBD in Dubai has become an excellent example of the power of real estate development when stakeholders

align. Baker students greatly enjoyed their experience in the "Manhattan of the Middle East" and received a better understanding of the rapid rise to prominence of the city built in the desert.

DUBAI: EXPOSITION 2020

Author: Jennifer Spritzer

Dubai will have the honor of hosting Expo 2020 from October 20, 2020 through April 10, 2021. This universal exposition is designed to showcase the achievements of the United Arab Emirates as well as other nations. The theme of Expo 2020 is "Connecting Minds, Creating the Future," placing an emphasis on how opportunity, mobility, and sustainability affect humanity worldwide (Expo 2020, 2018).

The economic impact of hosting a universal exposition is huge, with job creation, technological innovations, real estate, and tourism all benefiting. According to a study by Oxford Economics, Expo 2020 will create over 277,000 jobs, with many potentially becoming permanent due to the expanded economy following the exposition (Al Nisr, 2013). Expo 2020 is also expected to add approximately $40 billion USD into the area's economy and attract 25 million tourists during its six-month run. In preparation for this surge of tourism, the United Arab Emirates has been working nonstop to create and improve real estate to support and amaze these visitors, as well as showcase the sub-themes around which this exposition is based.

To support this demand for new and quickly built real estate, the nation has created new construction materials and technologies. In keeping with the theme of sustainability, the UAE has implemented strict new construction standards, such as the use of green concrete, which is produced without releasing or creating CO2. The emirate has also implemented the use of three 'quick-fix' sustainable solutions in buildings: insulation, solar heating, and LED lighting. One impressive project is the creation of the world's largest concentrated solar power project, which is expected to generate 1000 megawatts of power by 2020 and 5000 megawatts by 2030 (Nagraj, 2016). The Mohammed Bin Rashid Al Maktoum Solar Park will reduce carbon emissions by 6.5 million tons annually as part of the emirate's goal of increasing the share of clean energy in Dubai's power output to 7 percent by 2020, 25 percent by 2030, and 75 percent by 2050 (The Associated Press, 2017). Last September, the consortium comprised of Shanghai Electric and Saudi Arabia's ACWA was awarded a $3.9 billion contract to build and run the power plant.

In addition to ramped up construction and sustainability efforts, Dubai is also creating impressive showcases of real estate and architecture. In true Dubai fashion, the emirate is building the world's largest commercial tower named "Burj 2020" in Jumeirah Lake Towers. The 115-story tower will house a retail mall, grade A offices, a 5-star hotel, restaurants, health spas, conference facilities, 237 residences, and a 360-degree observation deck on the top floor (ProTenders, 2018). This project is being developed by Dubai Multi Commodities Centre (DMCC) as part of the 4.2 million square feet (1.3 million square meters) planned Burj 2020 District.

Many existing hotels are also being improved or expanded in anticipation of Expo 2020, and new luxury hotels are set to be completed in time for the exposition. The Jumeirah Group is making changes to its luxury hotels prior to the exposition, such as the recently completed over-the-sea terrace and completely updated interiors in the iconic Burj Al Arab. The terrace was constructed in pieces in Finland and shipped to Dubai by boat. It extends the reach of the Burj Al Arab by approximately 330 feet into the Persian Gulf, allowing guests to enjoy pool and cabana amenities onsite as well as at other luxury hotels on Jumeirah Beach. With the addition of the terrace, guests of the Burj Al Arab can now enjoy a freshwater pool or saltwater infinity pool as well as butler-serviced air-conditioned cabanas at the comfort of their own hotel.

As of September 2016, the value of active hospitality projects in the United Arab Emirates was $71.6 billion, with 543 developments currently under construction (The First Group, 2017). The government's projections for the influx of tourism stated that Dubai will need an additional 40,000 hotel rooms by the exposition, in addition to the 100,000 plus existing hotel rooms. Kerzner International is building The Royal Atlantis, a stunning hotel and residential project

set to be completed this year. Located next to Atlantis The Palm, this resort will include 800 hotel rooms and suites, 250 luxury apartments, and luxury amenities such as infinity pools, gyms, and private gardens. The building will be 46 stories tall. In addition to including even more luxury amenities than Atlantis The Palm, The Royal Atlantis features a masterful display of architectural design.

Over the years, world expositions have demonstrated impressive feats in the areas of technology and real estate. Dubai is certainly not looking to disappoint with Expo 2020. It is clear that we can expect to see bigger and better showcases of innovation in construction materials, new projects, and architecture as we move towards 2020, and the United Arab Emirates will undoubtedly astonish the world with its undertakings.

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DUBAI: THE TRANSFORMATION OF A LANDSCAPE

Author: Ali Daye

When the Baker Program visited Dubai for its annual international trek, a sense of welcoming was ever present. This was no surprise as Dubai has sought to open itself up to the world since the 1990s when the ruling Maktoum family made decisions that would chart the future course for the Emirate.

Like many of the Persian Gulf nations, Dubai has oil, though not to extent of its richer neighbors Abu Dhabi and Saudi Arabia. Because of its lack of substantial oil reserves, the rulers of Dubai made the decision to utilize its revenue from what oil it did have to make sustainable investments in infrastructure. They also focused on emphasizing the city's location along the Gulf Coast to develop it as an international tourist destination (Millington, 2017). Baker students were able to see the result of these decisions first hand as they toured several iconic properties in Dubai.

Baker students' introduction to the Dubai hospitality sector came from a tour of the Jumeirah Beach district and meeting with executives from the Jumeirah Group. They are the hospitality arm of Dubai Holding, the global investment company who's majority stake is owned by Sheikh Mohammad bin Rashid Al Maktoum, the ruler of Dubai. It was founded in 1997 with the goal of helping Dubai transform into a major tourist destination (Bush, 2017). They have created iconic properties with first-class service. The first of these properties was the Jumeirah Beach Hotel (JBH), which at the time of its construction was one of the only hotels along Jumeirah Beach. At the time of its development its wave shaped design was seen as revolutionary. The penchant for using avant-garde design would become a mainstay in Dubai's hospitality industry. After establishing itself with the Jumeirah Beach Hotel, Jumeirah developed the Burj Al Arab, who's sail shape would define it as one of the world's most iconic modern structures.

Within just two decades of its founding, the Jumeirah Group has become a major player in the world hospitality industry. With the JBH, the Burj Al Arab and the additions of the Madinat Jumeirah and Wild Wadi Waterpark, all within short distances of each other, they have created a world-class hospitality district along Jumeirah Beach. Today, these properties contribute to Dubai as the world's fourth most

visited city with over 16 million visitors in 2017 (Millington, 2017). Company executives told students that Jumeirah properties account for 10% of Dubai's hotel inventory.

By meeting with executives from Jumeirah, Baker students were able to help define its success. The management team shared some of the building blocks of the Jumeirah DNA. Establishing themselves as a high-end brand competing with brands like Four Seasons and Bulgari, they have made premium service a core value. Ideas such as always greeting guests before they greet you and never letting your first response be a "no" are hallmarks of Jumeirah customer service. These values have contributed to Jumeirah's rapid growth in such a short time. Their portfolio now includes properties in other Gulf states such as Bahrain, Abu Dhabi, and Kuwait, and outside of the Gulf in Frankfurt, Shanghai and London. Today the company has 20 properties with over 6,000 keys. Touring the Jumeirah properties (JHR, Burj Al Arab, and Madinat Jumeirah), Baker students were afforded the opportunity to see the inner workings of this major hospitality group, connecting the program with its Hotel School roots.

Another major aspect of Dubai's hospitality industry that Baker students had the opportunity to see was the Dubai Palm Jumeirah Island, a man-made island in the shape of a palm tree that extends into the Persian Gulf. Since its construction, it has become a key location for beachfront hotels and residences. The Baker Program's tour of the island was orchestrated by Kerzner International, the firm behind the Atlantis and One & Only brands. In addition to the One & Only hotel, several other high-end hotels are located around the island including the Waldorf Astoria, Kempinski and W. These are testaments to Dubai's burgeoning tourist industry.

The team from Kernzer welcomed the Baker Program with open arms. Students received a tour of the One & Only

as well as the Royal Atlantis construction site—Kerzner's newest addition to the Atlantis brand. The Royal Atlantis is an 800-room modernist interpretation of Atlantis's traditional design but still incorporates hallmark Atlantis elements—namely the signature Bridge Suite. The Atlantis is a massive structure with over 1,500 rooms. It sits at the center of the Palm Crescent almost like a crown jewel and is another example of Dubai being defined by it iconic structures.

Jumeirah and Kerzner are only two examples of the work that is going on in Dubai and what students got to see. Because of the policies enacted by the rulers of Dubai in the 1990s, the sense of welcoming is now deeply rooted in the city's culture. Over a relatively short period of time, Dubai has transformed itself from a small fishing village along a desert coast into a city that attracts visitors from all over the world. Like the many hospitality companies that do business in Dubai, the city is built on servicing the many needs of its visitors. With this focus, Dubai has been able to expand to include services and activities that do not exist anywhere else in the Gulf, such as indoor skiing, skydiving, and obstacle races.

From this trip, Baker students got to see how the direction of real estate can be charted based on policies enacted by senior leadership. In the case of Dubai, the decisions made by the ruling Maktoum family have allowed Dubai to flourish as a major destination hub. The city is an example of how real estate can transform the landscape of a place.

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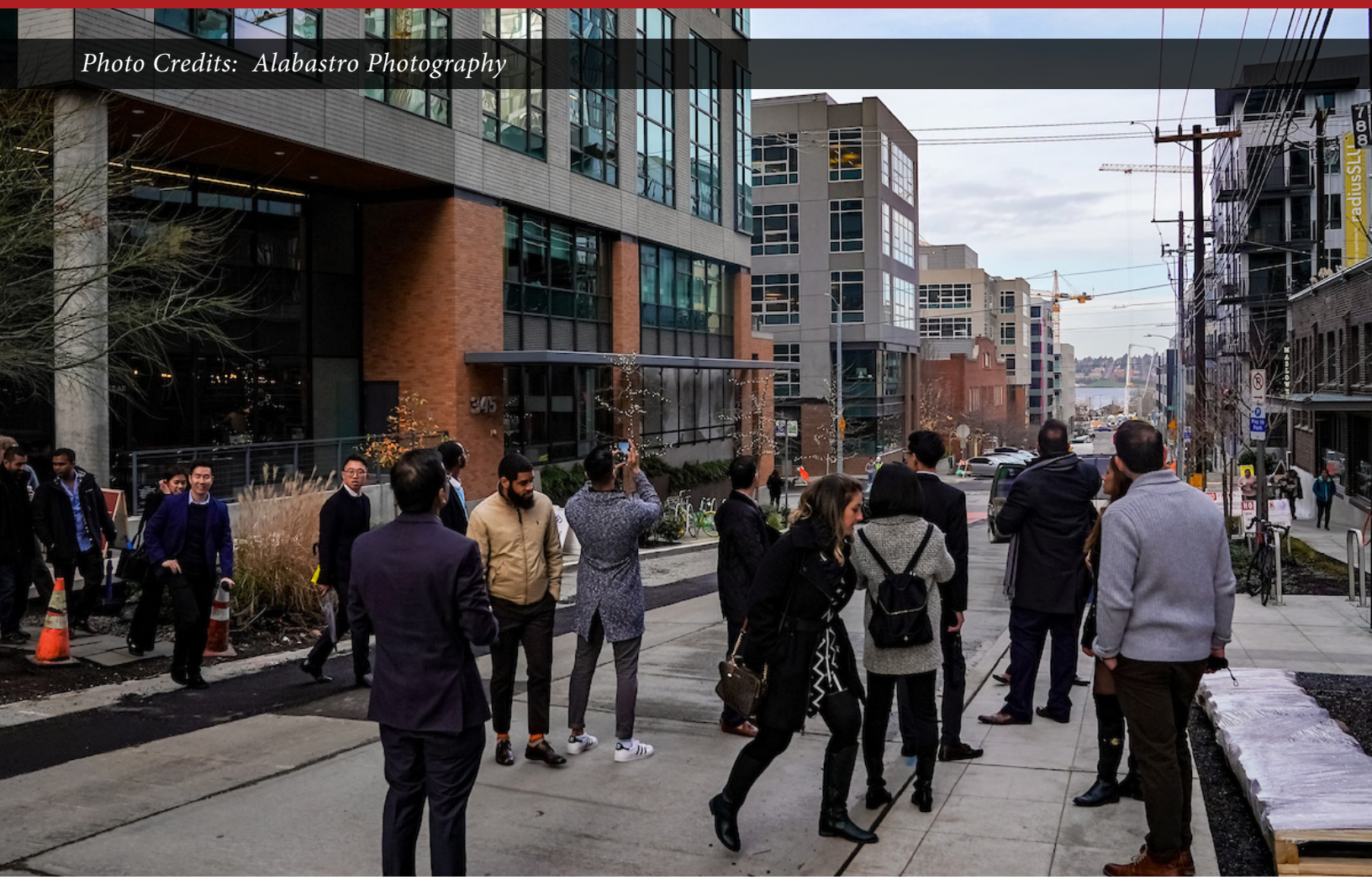
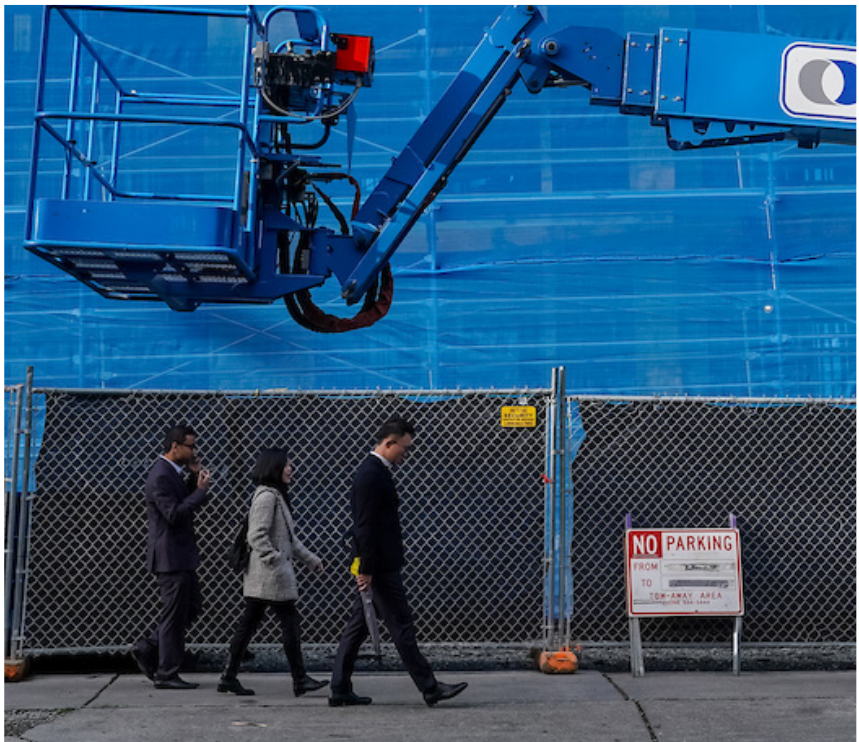
Domestic Trek: Seattle, Washington

Photo Credits: Alabastro Photography





Sleepless Seattle Innovation: Demonstrating Recent Changes in Real Estate

Author: Chris Trahan

1. INTRODUCTION

New ideas and untraditional perspectives can provide opportunity in unlikely places. This statement was exemplified in the Baker Program's latest trip to the Seattle/Tacoma area. The intent of the trip was to explore how technology merged with real estate can bring value to the world while disrupting traditional expectations.

The site visits began with a visit to the NewCold storage facility.

2. NEWCOLD

"Don't mind the gap between the door and the stairs, but watch your step. Its negative five (Fahrenheit) in this room. The building physically shrunk because of its temperature." Explained David Richardson, President and CEO of Netherland based NewCold USA, as he led the way into one of the facility's cold storage chambers.

It was the facility's first day to receive a pallet from its primary customer, Trident Seafoods, the largest seafood company in the United States. Trident moved its operations to Tacoma to occupy most of NewCold's warehouse containing 25 million cubic feet of storage. The facility is one of the largest cold storage facilities in the United States, but the size was not the principal reason the property was attractive. Within the 140-foot-tall building's fireproof low oxygen environment stands a mechanically complex system of lifts, robotic arms, and storage platforms that take up most of the facility's indoor space. This system is what makes the industrial facility revolutionary to storage.

Operated by sophisticated software, a system of automated cranes and conveyor belts serves to offload cargo from software integrated, mechanized double-decker trailers that each hold 44 pallets. Cargo is unloaded onto conveyor belts and is then sorted and stored in the above holding bays. The facility operates with fewer than 30 people, mostly engineers. Mr. Richardson highlighted the facility's advanced software, as it directs the cranes and conveyor belts to sort its storage in preparation for the next distribution and delivery even after the staff goes home in the evening. "We are extremely efficient at this facility."

Despite real estate typically favoring traditional methods over, the example of NewCold's adaptation of technology and real estate counters the conventional. The NewCold visit provided an opportunity to reflect on how technological breakthroughs can not only be disruptive to supply chain, but also can have lasting impacts that create real estate opportunities.

3. SUSTAINABLE LIVING INNOVATIONS

Sustainable Living Innovations (SLI) 47 + 7 building in Seattle was the next destination. Founded by architects Arlan Collins and Mark Woerman, SLI seeks to reduce

construction time, minimize costs, and incorporate energy efficient systems throughout their buildings. The company achieves its goals through its construction methods and patented systems while claiming to develop sustainably, with appropriate environmental stewardship, social development, and economic progress (Chai-Lee, 2017).

SLI Executive Vice President of Strategy, Don Reed, visited the Cornell Baker Program in October 2017, in the program's Distinguished Speaker Series and indicated that the company's proprietary, cutting edge manufactured systems integration in multifamily urban infill would be disruptive to traditional construction. The erection of its first high-rise in Seattle, the 47 + 7 building, proved to be as shocking as it was inspiring. "The steel, the walls, and the floors are premade offsite. It saves on construction time and we know the exact quantity of every building material, even down to each screw." Said Rick Osterhout, Executive Vice-President of SLI.

Students learned that site-work, utilities, foundations, garages, podiums, etc. are constructed like components of a typical building, however, there are few similarities in the rest of a building's construction. SLI uses a system whereby floor panels, wall panels, and structural steel are crafted off site. These ultra-durable components are then installed as each prefabricated floor slab is erected inside a steel exoskeleton. The exposed steel frame is not welded because each piece is connected using bolts. Steel allows for building more floors per total height of the building because it is lighter and more efficient, and steel beams that support floors are not required to be as deep as those of concrete (NBM & CW, 2013). These SLI components allow their buildings to go up fast. After excavation, buildings like the six story 47 + 7 development can be built 50 percent faster than standard buildings of the same size.

Mr. Osterhout invited his visitors to interact with the components up close. The experience was remarkable.

He then demonstrated the unit's wide sliding walls and ultra-wide porch window. He also informed them that the company's approach to construction allows for a reduction in energy systems by 70 percent and water usage by a minimum of 33 percent. Mr. Osterhout also informed the group that the SLI building weight is 50 percent less than traditional buildings, allowing similar high-rises to be built in more locations than high-rises with comparable volume.

SLI has great ambitions, and is currently developing its first high-rise in downtown Seattle, scheduled to be erected within 12 months. The company is also developing mid-rise buildings in San Francisco and is looking to use this model to expand to the east coast.

4. MICROSOFT

Late Friday, Baker students arrived at the Mecca of Microsoft, the company's headquarters located in Redmond, Washington. Nestled in the Puget Sound region, the campus boasts over an impressive 8 million square feet of office space and is set to undergo a breathtaking expansion to host an additional 8000 employees. Susan Wagner, Senior Director of Real Estate and Facilities, and Mike Ford, General Manager of Real Estate and Facilities, led the tour through an open lobby with wood accents, trees, experimental light fixtures, coffee machines with exotic blends, and a floor layout not too different from an experience at WeWork.

In several halls, students saw sketches, equations, cartoons, team objectives, jokes, and recipes written throughout the facility's many sliding walls, doors, and pop up surfaces. It was easy to find a dry eraser just about anywhere in the facility. As they got closer to the conference room, some noticed signs with arrows: "Xbox to the right. Skype to the left. Treehouse straight ahead." Ms. Wagner indicated that part of their scope in managing corporate facilities is to be creative as she rolled out visually stunning plans to

redevelop existing and stale facilities into cutting edge, collaborative work spaces in Microsoft facilities beyond the Redmond headquarters.

Mr. Ford then discussed Microsoft's range of products and how their roles consist of continually anticipating the needs for space domestically and globally and coordinating between their leased and owned space. He used LinkedIn as an example of how his role is to accommodate their need for space like so many other extensions of Microsoft. "For instance, consider LinkedIn. You do have LinkedIn, right?"

Mr. Ford and Ms. Wagner fielded all sorts of questions ranging from global real estate strategy and planning to Microsoft's Hololens capability to view the campus's expansion in a virtual world. Mr. Ford ended his statements with a Bing search for the Microsoft outdoor meeting spaces his team invented saying "By the way, you have seen the Treehouse, right?" The treehouse was inspected shortly after the conference room meeting, and it was obvious how Mr. Ford and Ms. Wagner's team created a space that was not only great for Microsoft's publicity, but also had great utility for the company's employees.

Innovations in robotics at NewCold, in lightweight construction at Sustainable Living Innovations, and in corporate and personal communication at Microsoft signal the changes taking place in real estate. This includes not only the way in which properties are conceived and built, but also managed and sold. Looking for change in Seattle provides exciting glimpses of the future.

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Amazon's Impact on the Seattle Office Market

Author: Dustin Dunham

1. INTRODUCTION

The 2019 Baker Program Class trip to Seattle was an eye-opening experience. Among the biggest surprises was the dominance of Amazon within the city. As we met with developers, alumni and even Uber drivers, everyone was talking about the company's impact on the growth of the community.

According to CoStar, Amazon is the dominant space user in the Seattle office market, accounting for almost 45% of all the gross leasable class A office space. Amazon occupies more office space than the city's next 40 biggest employers combined.

2. VULCAN REAL ESTATE INTRODUCTION – SOUTH LAKE UNION DISCOVERY CENTER

Vulcan Real Estate, the real estate investment arm of billionaire Paul Allen's private investment company was the first stop. Lori Mason Curran, the Director of Real Estate Strategy, introduced the South Lake Union area of Seattle and discussed its portfolio and what is happening in the broader area. It did not take long to see Amazon's clear impact on the office market in the area.

Looking at a large-scale model of the city at Vulcans facilities, Ms. Curran pointed out some of Amazon's first buildings scattered around the South Lake Union area. Almost no one could have predicted just how quickly Amazon would grow and how difficult it would be to find or create space to meet the company's needs. Amazon's office properties in the late 2000's consisted primarily of mid-rise office structures around the South Lake Union neighborhood. In total, over 40 of these structures in downtown Seattle, Bellevue and South Lake Union were redeveloped or built to suit. It was difficult to bring on the million or half million square feet needed every year to keep pace. In 2005, Amazon's leaders had an initial meeting to discuss adding even more office in the South Lake Union area and considered building the downtown campus for the first time.

Ms. Curan mentioned that currently Amazon has around 14 million square feet of office in the Seattle area for 40,000 local employees, about 205 of whom walk to work daily. Amazon added a fourth streetcar with funds to operate it for 10 years and built bike lanes to separate bike traffic from cars. To assist food shopping along the routes, the first Amazon Go location was introduced. This is a cashier-less grocery store that uses facial recognition technology and your Amazon account to charge for what ever items you choose to take out of the store. This means no checkout and no lines. The 1,800 square foot Amazon Go test site was launched to the public the day after the program left Seattle, but 6 more are reportedly opening. Amazon is leading the way with hopes that the technology changes the way people interact with retail shopping.

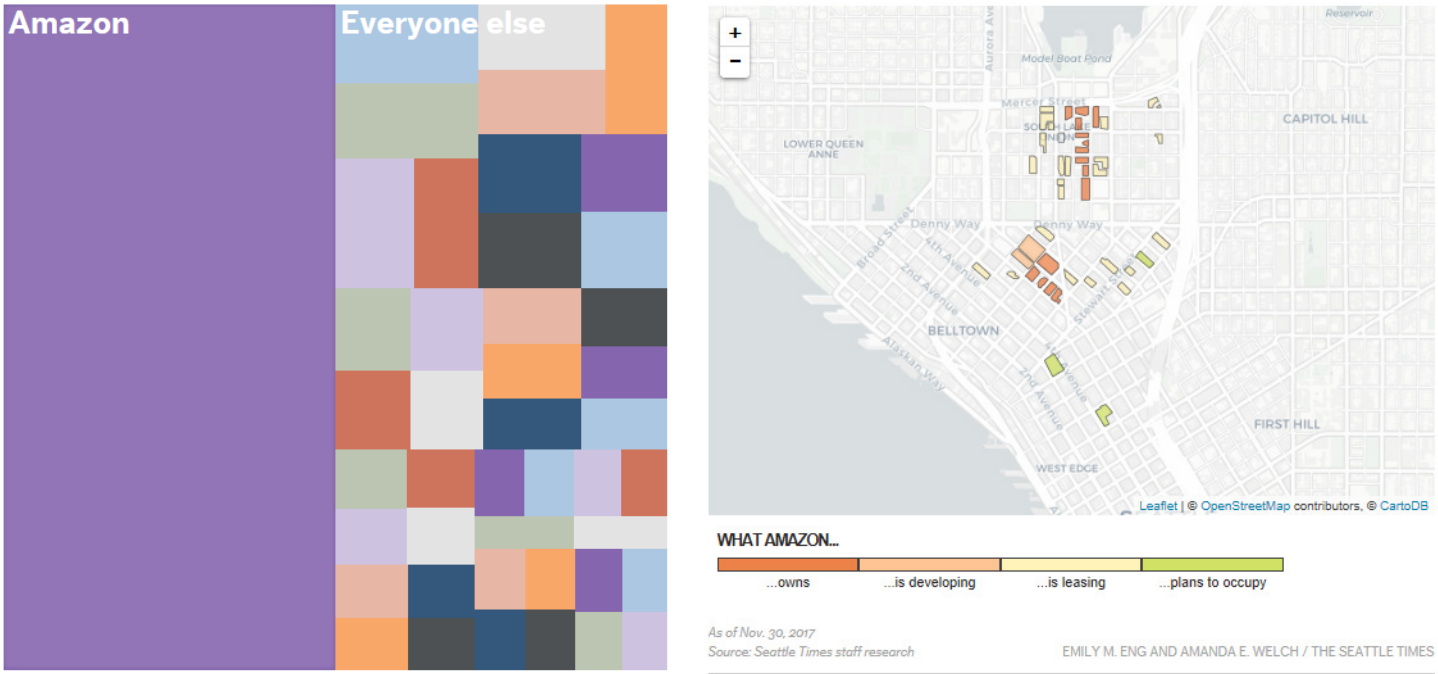


Figure 1. Amazon's Seattle footprint. Source: https://www.seattletimes.com.

3. SKANSKA USA COMMERCIAL DEVELOPMENT – 400 FAIRVIEW

Alumnus Stephen Porter, Manager of Development at Skanska USA Commercial Development led a tour of his company's new 400 Fairview building, a mixed-use office and retail building located in the heart of South Lake Union. In contrast to much of the new space coming to market, Skanska's new building targeted a diverse office tenant mix rather than looking to Amazon to occupy their project.

Skanska wanted to create a building that was a positive and inclusive addition to the greater neighborhood. It wanted a structure that wasn't just for the office workers or a typical all glass office building but something that brought people in from the community. It partnered with a local architectural firm, SkB Architects, and focused on building an open place that welcomed the community inside it's ground floor. The high ceilings and open concept environment combined with locally based coffee and dining options gave the building a warmth that office tenants seemed to embrace. The large glass warehouse style doors are inviting and the smell of the fresh baked goods and coffee create a space that's appealing to office workers wanting a coffee break.

Unlike other developers, Skanska can use its large balance sheet to build buildings of consequence and not just maximize profit per square foot. Mr. Porter pointed out that this scale of mixed-use development with local ground floor retailers is unique on the West Coast and has attracted a different type of tenant. Tommy Bahama is a major tenant and the building serves as their corporate headquarters. Rather than build more square footage for Amazon like many developers have focused on, Skanska began the project with other future tenants in mind but that doesn't mean they don't necessarily feel the impact of Amazon's growth. The area has a large footprint of tech talent due to companies like Amazon and Microsoft being located nearby and other companies are moving to Seattle to capitalize on the rising talent pool in the city. Companies like Facebook (already up to 2,000 employees in the Dexter Station location) and Google (occupying a 600,000 square foot building in South Lake Union that will be finished in 2019) have begun acquiring office space The Seattle economy is now being stoked by demand from a range of other companies like technology firm F5 Networks Inc., which leased more than 500,000 square feet in the city in the second quarter. The Puget Sound's office vacancy rate was 11.3% at the end of the quarter, compared with around 16% in 2012, according CBRE Group Inc. As these other companies come to Seattle, projects like 400 Fairview are positioned to absorb them as tenants.

Figure 2. Amazon real estate growth. Source: https://www.cnbc.com.

4. WRIGHT RUNSTAD & COMPANY: RAINIER SQUARE TOWER

The Baker Program met with Wright Runstad & Company to talk about another large mixed-use development going up in Seattle. As the developer working on behalf of the land owner and capital provider, University of Washington, Wright Runstad & Company is building a mixed-used retail, office and luxury apartment building that will standout in the skyline of Seattle when it's completed in 2020.

First year Baker student Julian Karel said, "It was interesting to see the public/private partnership from the inception of the idea for Rainer Square all the way through to zoning and the city changing the height of the sloping glass out to the property line." The city changed the sloping profile of the building so as not to obstruct views of the neighboring Rainier Tower pedestal.

The Rainer Square Tower project's 722,000 square foot office component was pre-leased by one tenant, Amazon. At a cost of an estimated $600 million, this is one of the biggest projects in Seattle, the second tallest building in the city and underscores Amazon's dominance in the office market.

The growth of Amazon has impacted Seattle's office market in several different ways and there's no slowdown in sight. The addition of Whole Foods and Amazon Go to Amazon's business model will continue to impact how Seattle, and the rest of the world interacts with Amazon.

Real Estate Industry

Cornell Baker Program in Real Estate

35th Annual Cornell Real Estate Conference Recap

Authors: Tiya Jain and Sean Mashian

MORNING PANELS

On October 13, 2017, the 35th Annual Cornell Real Estate Conference took place at the Pierre Hotel in Manhattan. Over 300 people attended the conference, including students, faculty, and industry professionals. The conference theme was "Mega Trends Impacting the Real Estate Industry." The conference focused on how changes in how we live, work, shop and travel impact real estate.

After an engaging introduction from David Rupert, President of Griffin Capital and Board Member of the Cornell Baker Program in Real Estate Advisory Council, Jiwon Park, Baker/MBA '18, introduced the discussion of the 2017 Hodes Weill Institutional Real Estate Allocations Monitor.

Doug Weill, Managing Partner at Hodes Weill, went on to present findings from the Allocations Monitor. For instance, companies have now passed the 10% threshold of their cumulative assets targeted to allocate to real estate. This increased from a 9.9% target in 2016 to 10.1% in 2017; however, companies have shifted from being moderately optimistic about the industry to being slightly pessimistic. One indication of this is that 60% of companies are now deploying debt strategies–up from 50% in 2013. Overall, students and professionals alike benefit from hearing allocations monitor results. "Analyzing capital flows is the secret to understanding where the market is headed," said Peter Romano, a second year Baker Program student.

Following the presentation was the "Institutional Perspective: Real Estate Allocations and Mega Trends Impacting Global Investing" panel with Tom Arnold, Global Head of Real Estate at Abu Dhabi Investment Authority (ADIA), and moderated by David Hodes, Managing Partner at Hodes Weill. The topic of the US investments market was mentioned, including how some secondary markets stood to benefit from the current economic environment. The discussion then moved to technology in real estate and how it may be a disruptive force in the coming years. Mr. Arnold wrapped up the panel with words of advice for students, including how students should pursue entrepreneurial endeavors.

Next, a one-on-one discussion of "How and Where We Shop," was moderated by Laura Pomerantz, Head of Strategic Accounts at Cushman & Wakefield, and Richard Baker, Executive Chairman of the Hudson's Bay Company (HBC). During the discussion Mr. Baker consistently dismissed the notion that "retail real estate is dead." He

pointed out that over 85% of shopping occurs in physical stores and that the main issue is that the US is massively overbuilt in the retail sector. He believes that the problems are both structural, from over-building, and cyclical. Mr. Baker anticipates that suburban strip centers near large metropolitan cities will benefit greatly. He noted Stamford, Connecticut, as an example city that acts as a suburb to New York. Strip centers in suburbs like that, argues Mr. Baker, currently have very little to no vacancy. After talking briefly about how he sees brick and mortar becoming a supporting asset to online sales, Mr. Baker answered questions from the audience on a number of topics.

Following Mr. Baker's panel came "How and Where We Work" with David Fano, Chief Development Officer at WeWork and moderated by Jeffrey Horowitz, Global Head of Real Estate, Gaming and Lodging at Bank of America Merrill Lynch. The panel discussed how we are rethinking the use of office space, from both a productivity and efficiency standpoint. Mr. Fano talked about how WeWork hopes to change the idea that real estate is permanent and transform it into an asset class that is flexible like social media. The company also makes sure that all the amenities that are provided are actually being used, and if not, helps find new ways to allocate its capital. To do this, WeWork hires community managers to monitor sites and see what aspects are being utilized. Mr. Fano believes that WeWork is in the community business, not the real estate business, and strives to help the company live by that ideal.

An additional panel focused on a one-on-one discussion on "How Trends in Tech are Changing the Way We Design and Build." The conversation was between Kai-Uwe Bergmann, Partner at Bjarke Ingels Group, and David Kaplan, Senior Partner at FXFOWLE. The deep and engaging conversation centered on what the future of society means for real estate. Mr. Bergmann detailed how Audi came to him asking how they should change their reputation with the youth, as they noticed nearly all renderings done by architects nowadays promote walk-ability and no longer have cars in them. Mr. Bergmann advised them to rebrand themselves as a "mobility" company, not a "car" company. For example, one provocative discussion concerned roads. Over 15% of most cities are roads, but with the advent of the driverless car, Mr. Bergmann estimates only 5% of roads will be needed to supply cars in the coming future. What will the other 10% become? Will it go to real estate development, or become parks and nature?

AFTERNOON PANELS

The 2nd half of the 35th Cornell Real Estate Conference was an engaging session consisting of a speech by Industry Leader of the Year Award recipient Jonathan Rose, followed by two major panels. Mr. Rose spoke about his recent book 'The Well-Tempered City' which covers the major trends affecting cities and urbanization. People are moving into the cities resulting in a rising middle class that is consuming much more. This is good for economic growth but environmentally unsustainable. At least 98% of the resources that enter a city, leave the community within 6 months as waste. Mr. Rose exhorted that cities should become more resilient to weather climate change and give greater attention to droughts and heat waves, income inequality, educational and health disparities, aging, housing insecurity, migrations, and many other challenges. Mr. Rose suggested several solutions to deal with the complex web of issues facing cities in his talk.

The first panel encapsulated the current trends on 'How and Where We Live.' The panel was moderated by Alan Riffkin, Managing Director at Lazard. The panelists were esteemed real estate professionals namely:

- Chris Bledsoe, Co-Founder & CEO, Ollie;
- Brad Greiwe, Co-Founder & Managing Partner, Fifth Wall;
- Jim Woods, Head, WeLive; and
- Doug Yearley, CEO, Toll Brothers.

The discussion centered on the current trends in demographics and home ownership that are reshaping the single and multifamily housing sectors. The panel provided an opportunity to hear from leading housing developers on the surprising evolution of the products they are building, the amenities they are adding and subtracting, and where they are building in response to shifts in consumer demand.

There has been a change in home ownership patterns amongst millennials due to late marriages and subsequent moves to suburbs. The average renter is now 35 years old and spends over 30% of his or her income on rent. There has also been a shift in apartment layout preferences. Open spaces are preferred, with nicer kitchens and closet areas but overall smaller apartments to accommodate lower rents.

Brad Greiwe spoke about how real estate technology companies such as Opendoor are impacting the market space. Technology will transform how we value our assets. Technology is also impacting space configuration. Ollie is offering transformative furniture that has various uses. There are several platforms to help find a roommate, but the key impediment is affordability in cities. The solution to this problem is finding innovative ways to utilize space and shrink usage. In fact, micro units are doing well not only in Tier One cities but also in Tier Two cities. Live, work, play is a major trend that is driving demand in the urban core, due to the experience seeking preferences of millennials. According to some of the panelists, the American dream, e.g. the life in the suburbs, is still alive but it is taking Millennials longer to achieve it.

The next panel covered 'Mega Trends in the Real Estate Job Market,' a session highly anticipated by the 100+ Baker

Program students in attendance. The panel was moderated by Lynn Zuckerman Gray, Founder & CEO, Campus Scout.

The panel featured successful real estate professionals namely:

- Katie Brenzel, Reporter, The Real Deal;
- Jordan Cooper, Partner, Cooper and Cooper;
- Andy Levin, Head of Business Development, Ollie;
- Rebecca Parelman, Project Director, NYC Economic Development Corporation; and
- Dan Shallit, Director of Development, Starbucks.

This panel was aimed at understanding how the Real Estate Job Market will adapt to changes in the way we live, work and shop. During this session panelists shared their personal stories of success in the real estate industry. One important piece of advice shared was to seek the right cultural fit with employers rather than chase monetary gains. Another opinion that echoed strongly in the room was the need for diversity. Firms must employ the best talent in the industry, which indicates that candidates with diverse backgrounds are essential.

Closing remarks from Paul Rubacha, Co-founder and Principal, Ashley Capital, encouraged all Cornell alumni to be more deeply involved with the Baker Real Estate Program.

Survey Highlights

INTRODUCTION

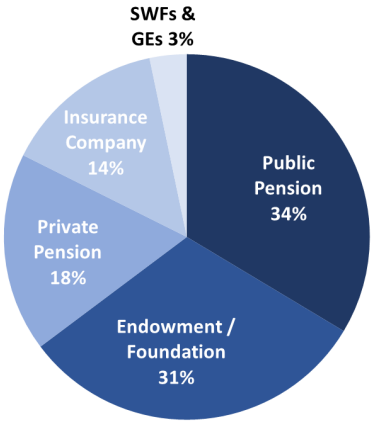
Cornell University's Baker Program in Real Estate and Hodes Weill & Associates are pleased to present the findings of the fifth annual Institutional Real Estate Allocations Monitor (the "2017 Allocations Monitor"). The 2017 Allocations Monitor focuses on the role of real estate in institutional portfolios, and the impact of institutional allocation trends on the investment management industry. Founded in 2013, the Allocations Monitor is a comprehensive annual assessment of institutions' allocations to, and objectives in, real estate investments. This report analyzes trends in institutional portfolios and allocations by region, type and size of institution.

The 2017 Allocations Monitor includes research collected on a blind basis from 244 institutional investors in 28 countries. The 2017 participants hold total assets under management ("AUM") exceeding US$11.5 trillion and have portfolio investments in real estate totaling approximately US$1.1 trillion. Our survey consisted of 25 questions concerning current and future investments in real estate, portfolio allocations to the asset class, investor conviction, investment management trends and the role of various investment strategies and vehicles within the context of the real estate allocation (e.g., direct investments, joint ventures, private funds). We also included questions regarding historical and target returns as well as environmental, social and governance ("ESG") policies.

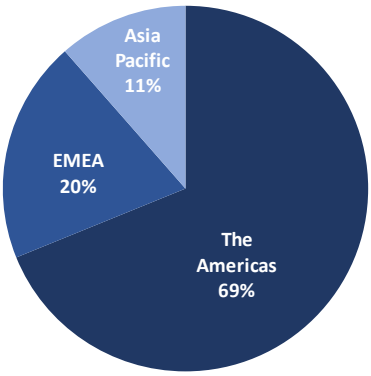
A full copy of the report is available online at:

http://www.hodesweill.com/research/allocations-monitor/

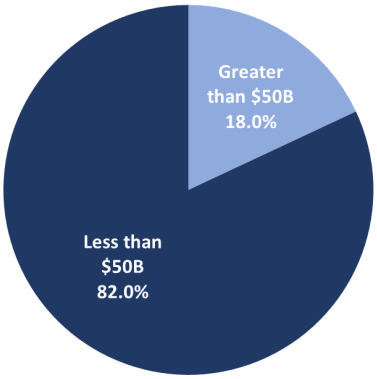
Breakdown of Participants By Type of Institution



Breakdown of Participants By Location of Institution



Breakdown of Participants By Size of Institution



1. It's official… the target allocation to real estate in institutional portfolios has now surpassed the 10% threshold.Average target allocations to real estate increased to 10.1% in 2017, up 20 bps from 2016 and up approximately 120 bps since 2013. Approximately 44% of institutions now have a target allocation in excess of 10%, up from 18% and 27% in 2015 and 2016, respectively.

2. However, the annual pace of increase in target allocations appears to be moderating. The pace of increase in target allocations has moderated from 30-40 bps per year over the past four years to 20 bps in 2017. Further, approximately 24% of institutions expect to increase their target allocations over the next 12 months.

3. Actual allocations continue to lag target allocations, as institutions remain meaningfully under-invested. While 92% of institutions reported that they are actively investing in real estate, portfolios remain approximately 100 bps underinvested relative to target allocations. Approximately 60% of institutions are under-invested relative to target allocations, up from 50% in 2016.

Exhibit 3: Weighted Average Target Allocation to Real Estate, All Institutions

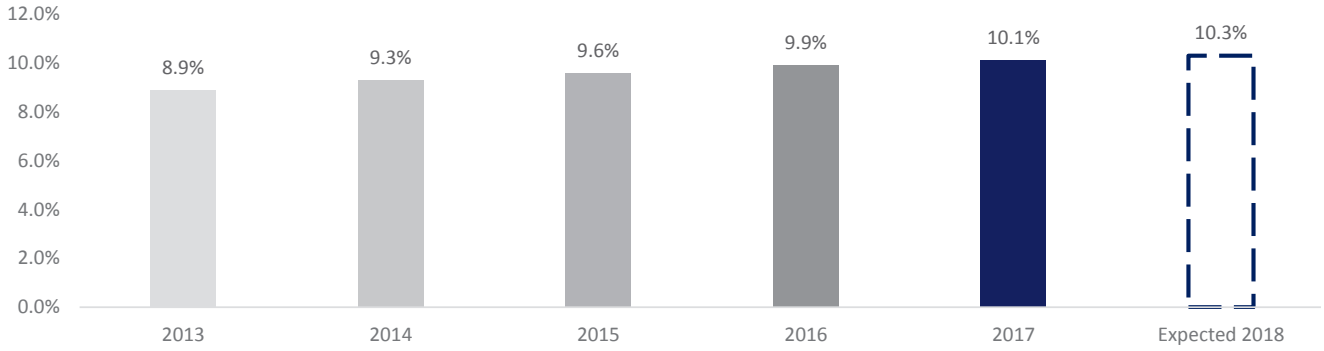


Exhibit 4: Range of Target Allocations (2016 vs. 2017), All Institutions

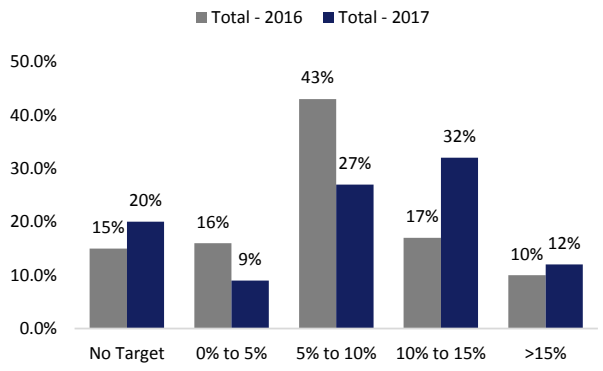
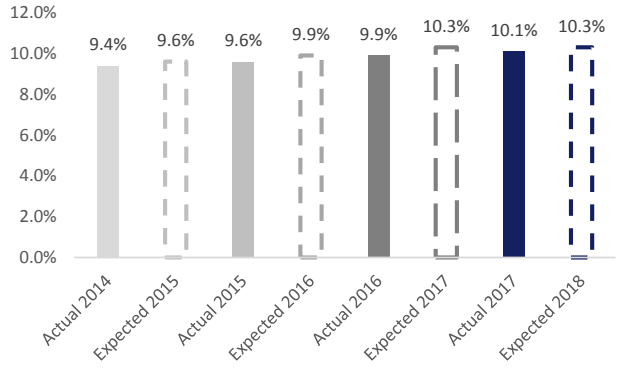


Exhibit 5: Actual vs. Expected Target Allocations, All Institutions



4. The average investment performance for institutional real estate portfolios decelerated to high single digits in 2016. Real estate portfolios generated an average annual investment return of 8.6% in 2016, down from 11.0% in 2015 and the prior five-year average of 10.4%. Investment returns were slightly in excess of target returns (by approximately 20 bps) and remain well in excess of global return indices for real estate. Institutions in APAC edged out their peers in the Americas, and get this year's trophy for the highest average annual return at 9.3%.

5. Institutional conviction for the asset class has declined significantly year-over-year. Led by institutions in APAC, market sentiment has declined over the past 12 months from "moderately optimistic" to "slightly pessimistic". Between 2016 and 2017, our "Conviction Index", which measures institutions' view of real estate as an investment opportunity from a risk return standpoint, declined from 5.4 to 4.9. The combination of rising target allocations, continued underinvestment relative to target allocations and declining conviction is resulting in a perception of a "weight of capital" for the asset class.

6. Value-add strategies remain the strong preference for institutions, followed by opportunistic and core. Investors continue to favor alpha-generating strategies for property investments. As an alternative to core investing, institutions are showing increased interest in debt and credit strategies. Approximately 60% of institutions report that they are actively investing in debt strategies (up from 52% in 2016).

Exhibit 9: Percent Invested vs. Target Allocation, By Location of Institution

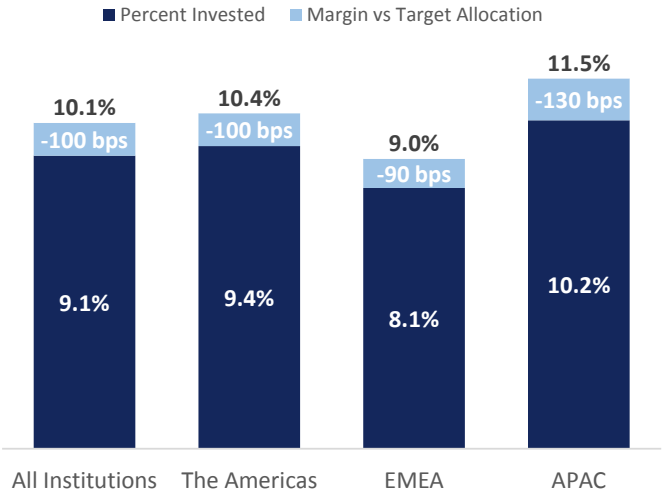
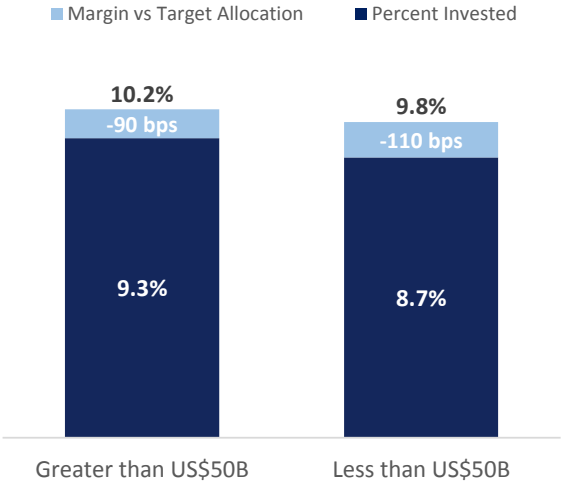


Exhibit 10: Percent Invested vs. Target Allocation, By Size of Institution



The average investment performance for institutional real estate portfolios decelerated to high single digits in 2016

	Target Returns		Actual Returns					
	2016 Target Return	*2017 Target Return*	*Actual 2012*	*Actual 2013*	*Actual 2014*	*Actual 2015*	*Actual 2016*	*Actual 5-Year Average*
All Institutions	8.4%	8.2%	9.6%	10.8%	11.8%	11.0%	8.6%	10.4%
By Type								
Public Pension	7.9%	7.6%	10.3%	10.0%	11.7%	11.6%	9.0%	10.5%
Endowment & Foundation	9.6%	9.5%	9.3%	13.9%	13.0%	10.9%	8.1%	11.0%
Private Pension	7.8%	7.9%	9.1%	10.5%	12.6%	11.2%	8.8%	10.4%
Insurance Company	7.8%	7.5%	6.8%	7.3%	8.3%	9.6%	8.6%	8.1%
SWFs & GEs	8.8%	9.6%	14.4%	11.4%	11.4%	10.0%	8.8%	11.2%
By Location								
The Americas	8.5%	8.5%	10.6%	12.5%	12.6%	11.7%	8.7%	11.2%
EMEA	8.0%	6.9%	5.9%	6.2%	10.4%	9.5%	7.9%	8.0%
APAC	8.4%	8.8%	9.4%	9.3%	9.5%	10.0%	9.3%	9.5%
By Size								
Greater than US$50 billion	7.7%	7.7%	10.2%	10.1%	11.1%	11.2%	9.8%	10.5%
Less than US$50 billion	8.5%	8.3%	9.5%	10.9%	12.0%	11.0%	8.4%	10.3%

Exhibit 18: Conviction Index, By Location of Institution

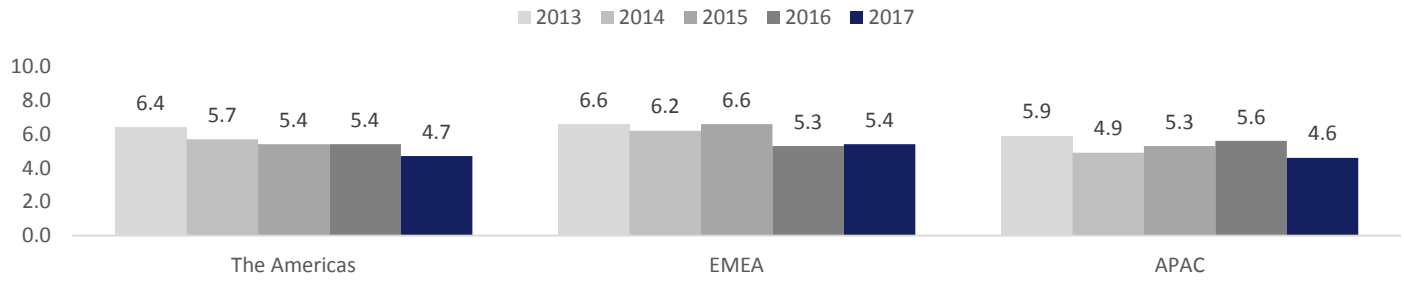
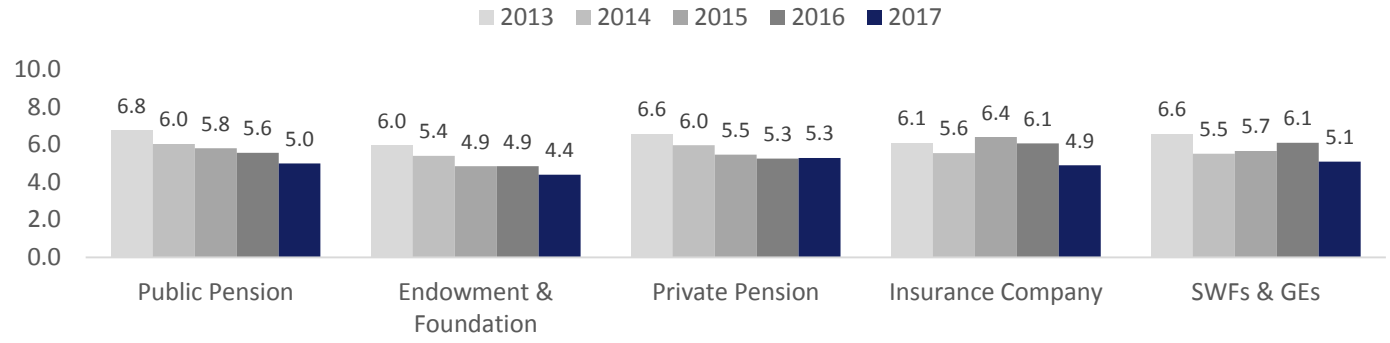


Exhibit 19: Conviction Index, By Type of Institution



7. Third-party managed AUM continues to trend upward. Institutions are allocating the substantial majority (approximately 84%) of their new investment allocations to third-party managers. This trend, in combination with rising allocations and capital appreciation, is driving strong growth in industry-wide AUM. This is the case, in particular, for Smaller Institutions (i.e., institutions with AUM less than US$50 billion) that do not have the resources to internalize management functions, as well as for institutions that are allocating investments cross border.

8. Institutions continue to favor allocating to existing manager relationships. Approximately 64% of new allocations are expected to be awarded by institutions to existing manager relationships. As a result, a small number of large-cap managers continue to garner more than 50% of new allocations. Emerging managers are at a disadvantage, as less than 20% of institutions are willing to invest with first time managers.

9. Demand for real estate private funds continues to rise. Approximately 87% of institutions are actively investing in closed-end private funds, up from 79% in 2016. Closed-end funds are the preferred product type for most institutions, followed by open-end funds in which 55% of institutions are actively investing. Approximately two-thirds of the Larger Institutions (i.e., institutions with greater than $50 billion of AUM) are actively investing on a direct basis, in joint ventures and/or separate accounts.

10. Environmental, Social & Governance (ESG) policies are an increasingly important objective for institutions. The percentage of institutions with formal ESG policies has increased to 36%, led by EMEA based institutions at 70%. Importantly, 31% of institutions report that their investment processes are now influenced by ESG considerations. We look forward to sharing additional insights and our perspective on the industry with you more directly in the near future. Again, we would like to express sincere appreciation to everyone that participated in this year's survey.

HODES WEILL & ASSOCIATES

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2017 Institutional Real Estate Allocations Monitor

Research Articles

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You Need to Be in Williamsburg:

A case study of RedSky Capital's RedBridge Development

Cornell Case Studies

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INTRODUCTION

By the spring of 2012, the Williamsburg neighborhood of Brooklyn had already seen a dramatic transformation from an historically industrial riverfront district to one of the trendiest residential areas in New York's five boroughs. The lingering effects of the Great Recession continued to stymie retailer confidence on a broad basis, but sophisticated retailers were once again beginning to plan expansions. RedSky Capital's Ben Bernstein and Ben Stokes had been talking with the owner of a portfolio of contiguous storefronts encompassing an entire block along Bedford Avenue for five years, forming a strategy to redevelop the properties. RedSky's dream for the site wouldn't have come to fruition without a bold vision to bring the first Apple store to Brooklyn or negotiations with Apple's high-power corporate real estate team in Cupertino, California.

Williamsburg's industrial heritage dates to the mid-19th century, when many of the nation's largest industrial firms (including Pfizer Pharmaceuticals, Standard Oil, Corning Ware, and Amstar and Domino Sugar) planted roots in the neighborhood. The construction of the Williamsburg Bridge in 1903 allowed for the creation of a dense residential population base, including immigrants from around the world. By 1961, Williamsburg was home to over 93,000 manufacturing jobs. However, this was short-lived, with the decline in American industrial production during the following decades that resulted in a decrease to just 12,000 manufacturing jobs by the early 1990s (Brooklyn Library).

Over the past 25 years, the neighborhood has seen a dramatic transformation from its quiet industrial, working-class roots to a trendy young residential base (Harris, 2010). The transition began in the early 1990s, as artists seeking reprieve from Manhattan's rising real estate prices found a home in the empty industrial buildings in Williamsburg. Galleries, shops, and restaurants followed the artists to cater to the new population.

As this momentum continued, the city re-zoned 19 waterfront blocks in 2005 with the intent to create or preserve open spaces, parks, light industry, and affordable housing. The most apparent result was the development of luxury (primarily glass) residential towers that transformed the nature of the Williamsburg waterfront. This new development caused another significant demographic shift to occur. The creative class that helped form the neighborhood was pushed out by escalating rental rates (Harris, 2010), and affluent urbanites moved into the neighborhood. As of 2012, roughly 25% of Williamsburg residents were earning over $100,000.

The result of these demographic shifts was that Williamsburg saw the greatest increase in residential rental rates among New York City neighborhoods during the two decades from 1990 to 2010 (NYU, 2015). Apartment rental rates in the Williamsburg/Greenpoint sub-borough area have increased by 78.7% over the 20-year period, compared to a 22.1% increase across the broader New York Metropolitan Area. The next highest increase among neighborhoods not classified as "higher income" was 53.2% in Central Harlem.

Project Quick Facts	
Project Name	RedBridge
Project Type	Mixed-Use Retail & Residential
Developer	RedSky Capital
Architect	Marin Architects
Location	Williamsburg, Brooklyn, NY
Addresses	237-247 Bedford Avenue 159-179 N. 3rd Street 156-170 N. 4th Street
Rentable Area	87,909 SF
Acquisition Price	$64,000,000
Redevelopment Costs	$83,700,000
Current Valuation	$301,300,000
Yield on Cost	7.65%
Website	redskycap.com/property/237-247-bedford-ave/

This residential transformation has led to a retail renaissance in the heart of Williamsburg. Retail rents along Bedford Avenue between Metropolitan Avenue and North 8th Street have risen by 477% (CPEX, 2016) between 2006 and 2016, as an influx of national retail brands competed for prime spaces. Bedford Avenue now ranks as the highest retail rent district in the MSA outside of Manhattan, with average asking rent of $393 per square foot between North 4th Street and North 8th Street (REBNY, 2017). This is an amazing feat considering average asking retail rents were just $50 per square foot in 2011 (Cushman & Wakefield, 2016).

Understanding Williamsburg's renaissance would not be complete without the story of Bedford Avenue's retail catalyst: Brooklyn's first Apple Store.

1. A CATALYTIC SITE

There are three main thoroughfares through the Williamsburg neighborhood: Bedford, Berry, and Driggs. These streets run north/south from Greenpoint to the north and through Williamsburg. Bedford Avenue is the longest artery through Brooklyn, coming in just under 11 miles long from Greenpoint to Sheepshead Bay.

RedSky Capital began talking to the owner of the three lots at 235-247 Bedford Avenue in 2007. The primary tenants at the time were a pizza store, pet store, pharmacy, and a Bagel Store. The property was attractive to the partners because the buildings spanned an entire city block, and there were only a handful of properties on Bedford Avenue between North 3rd and North 8th Streets with the ideal street frontage for retail stores. Only a few locations could provide at least 3,000 square feet of retail space for a single user, and RedSky developed a plan to acquire and merge spaces to create opportunities for retail tenants in this size category. Most buildings on Bedford Avenue had retail at grade and apartments above, but the buildings at 235-247 Bedford Avenue were permitted to have commercial uses on the second floor which would generate higher rental rates than the existing use.

With a plan in place, RedSky Capital and its partners closed on the acquisition of 235-247 Bedford Avenue in April 2012 for $64.0 million. RedSky immediately began to buy out the leases of the existing tenants on the second floor so they could begin renovations and ultimately lease retail spaces to large users as they had planned. The next step was to convince these users to come to Williamsburg.

2. REDSKY'S APPLE DREAM

From the beginning, RedSky co-founder Ben Bernstein had a lofty vision to bring Brooklyn's first Apple Store to Williamsburg at the corner of Bedford Avenue and North 3rd Street. Convincing Apple to locate a store in Brooklyn was no small feat. Bernstein frequently flew to the Bay Area and back over the next six months, waiting intently in Apple's offices to meet with the executives he needed to persuade.

> ***"If you're going to be in Brooklyn, you need to be in Williamsburg. If you're going to be in Williamsburg, you need to be on Bedford. And if you're going to be there, you need to be in an iconic space. This is an iconic space."***

These are the words Bernstein was finally able to pitch to Apple executives in Cupertino, and the negotiations continued in Dallas with Apple's brokerage team. In October 2012, RedSky had its breakthrough moment and signed a letter of intent with Apple. The process, however, wouldn't be complete until RedSky had an executed lease in hand. Apple was a tough negotiator accustomed to developers "giving away the farm" for an Apple store in their project. Bernstein and Stokes knew Bedford Avenue gave them leverage and finally, after a year of exchanging lease drafts, the Apple lease was executed in October 2013 and redevelopment commenced.

In a shift from Apple's typical modern design, Marin Architects designed a building that fit in with the historical industrial context of Williamsburg. The existing building did not meet Apple's requirements due to the structure's low ceiling heights, brick veneer covering, and a lack of central air. New construction was necessary, and the design was created in the image of the original structure. The final result was a two-story brick building with arched windows to allow an abundance of natural light into the space.

The interior of the space was designed by Bohlin Cywinski Jackson, architects who are intimately familiar with Apple's requirements after designing six Apple stores in New York City. They used the arches to create transition spaces between rooms. A local metal worker designed industrial-style pendant lights. Other design highlights included exposed interior brick, polished concrete floors, and exposed timber ceilings with visible steel beams and ductwork.

3. REMAINING PLANS FALL IN PLACE

As RedSky focused on bringing Apple to the project, the remainder of the space needed an upgrade as well. The immediate focus for the rest of the project was on how to utilize the 39 apartment units on the second floor, including 13 units on the second floor of the building that would become the Apple store. Further, 37 of the 39 second-floor apartments at the time of acquisition fell under the Loft Law, which protects residents in the city living in commercial or industrial spaces with unsafe conditions. The Loft Law requires the owner of the property to bring the building up to code. This tenant protection typically makes residents less receptive to moving. RedSky underwent a lengthy negotiation process with tenants that involved offering financial incentives to existing tenants to vacate the space above the future Apple store. Funding was also required to bring the apartments up to code, since the buildings had not been renovated since 1988.

With Apple signed and the scope of the residential transition settled, the partners turned their attention to the storefronts along North 4th Street, known locally as Williamburg's Restaurant Row. RedSky sought to take advantage of the restaurant culture along this corridor and approached fast/fresh casual restaurants to lease these spaces. RedSky renovated and executed leases with Umami Burger and Sweetgreen for the two storefronts along North 4th Street, both of which moved into these spaces in October 2014.

Along Bedford Avenue, Corcoran Real Estate had occupied one of the ground floor units in 247 Bedford Avenue for years. In order to renovate the existing building for Apple, the developer reached a temporary lease agreement to relocate Corcoran north to 241 Bedford Avenue. When Apple's new building was completed in 2016, Corcoran was moved back and now resides in 245 Bedford Avenue.

This left two storefronts along Bedford Avenue to fill. In 2015, the partners contacted the French cosmetics firm Sephora to occupy a space on Bedford Avenue. Sephora subsequently executed a lease and construction is underway with a delivery date of early 2018. RedSky is currently in conversations with a retailer to fill the last space along Bedford Avenue. The intent is for this tenant to take possession of the property in early 2018 and be open in time for the 2018 Holiday Season.

Finally, RedSky shifted its focus to the last piece of the puzzle along North 3rd Street by replacing an existing laundromat and inking leases with Flywheel and by CHLOE in 2016. The existing Foodtown grocery store and the residential units on the second story of this space remained in place.

4. VISION LEADS TO FINANCIAL PERFORMANCE

RedSky Capital acquired the RedBridge portfolio in April 2012 for $64.0 million ($728 per square foot), which was financed with a $45.0 million first mortgage from Loancore Capital. In-place net operating income at the time of acquisition totaled $2.1 million, equating to a capitalization rate of 3.3%. RedSky projected $19.0 million in redevelopment costs at the time of acquisition, resulting in total costs (including acquisition) of $83.0 million. With underwritten blended market rents of $175 per square foot for ground floor retail space at the time of acquisition, the partners projected stabilized net operating income following redevelopment to be $6.7 million equating to an 8.1% yield on cost. Based on a 4.25% exit capitalization rate, RedSky projected a stabilized value of $157.0 million.

Acquisition Underwriting	
Purchase Price	$64.0mm
Projected Redevelopment Costs	$19.0mm
Total Projected Cost	$83.0mm
In-Place NOI at Purchase	$2.1mm
Projected NOI at Stabilization	$6.7mm
Projected Exit Cap	4.25%
Projected Value at Stabilization	$157.0mm

Current Underwriting	
Purchase Price	$64.0mm
Projected Redevelopment Costs	$83.7mm
Total Projected Cost	$147.7mm
Projected NOI at Stabilization	$11.3mm
Yield on Cost	7.65%
Projected Exit Cap	3.80%
Projected Value at Stabilization	$301.3mm
Fully Funded Construction Loan	$126.0mm
Equity Contribution	$21.7mm
Equity Multiple	6.02x

The partners immediately began the repositioning of the asset through the vision previously presented, including the addition of Apple's Brooklyn flagship store as the anchor to the project. As part of the redevelopment, RedSky has invested an additional $70.7 million to date in closing, financing, and construction costs, bringing total investment in the property to $134.7 million. The property is currently encumbered by $113.0 million in construction debt financing from Citi, ACRE, and SquareMile, which will reach $126.0 million once the construction loan is fully funded. Equity investment to date totals $21.7 million.

The developer is projecting $13.0 million in redevelopment costs to complete the project, bringing total cost upon completion (including acquisition cost) to $147.7 million. Further, market rental rates have doubled since acquisition and capitalization rate compression has pushed the developer's underwritten exit capitalization rate downward from 4.25% to 3.80%. The result is a total projected stabilized net operating income of $11.3 million, which equates to a 7.65% return on cost and a projected stabilized value of $301.3 million. Based on these projections, the developer would realize a 6.02x equity multiple.

The developer has created significant value in its investment in three primary ways. First, the addition of key anchors including Apple and Sephora have dramatically

improved demand for space and have pushed rental rates upward throughout the project. Second, these additions of creditworthy tenants have also driven down underwritten capitalization rates and driven up underwritten value. Third, the developer timed the market to perfection, acquiring the property during a time of market-wide rental rate increase and capitalization rate compression. The key leasing transactions on Bedford Avenue have transformed the street into one of the premier retail streets in Brooklyn. The combination of timing and precise strategic business plan execution have led the developer to project extremely desirable returns. RedSky has no plans to exit the investment, but has placed itself in an excellent position to recapitalize following stabilization.

5. IMPACT ON NORTH WILLIAMSBURG

Apple created a precedent for major retailers along this strip of Bedford Avenue, both in terms of store viability as well as exterior and interior design. The Williamsburg Apple Store is unlike the typical glass cube Apple Store that exists on many prominent thoroughfares throughout the United States. Apple utilized the bones of the existing structure to guide the design of the whole building. While this inherently makes the building itself less iconic, it is quite discreet and appropriate for a site such as this in Williamsburg. The site, nonetheless, still garners a great deal of foot traffic every single day.

RedSky Capital is now one of the largest landowners in Williamsburg, and is credited with bringing many brands to the area, including Apple, Sephora, and later Urban Outfitters. The firm also plans to continue land assemblage in the area, creating more great spaces for world-renowned retailers. Following this development, several additional major retailers have opened in Williamsburg, including Whole Foods, Equinox, HSBC, Lululemon, J. Crew, Ralph Lauren, Aesop, Estee Lauder, Vans, Madewell, Muji, Gant, Levi's, and Starbucks. The addition of many credit tenants and international brands in Williamsburg in the last 24 months has turned the neighborhood into one of the hottest retail markets in New York and the entire country. Developers have taken notice and the neighborhood has seen an influx of multifamily housing, office spaces (including WeWork), and hospitality facilities move into the area. Furthermore, technology companies such as Livestream, Vice Media, and goTenna are all based in Williamsburg.

6. REDSKY CAPITAL TODAY

Since the founding of RedSky Capital in 2006 by Benjamin Bernstein and Benjamin Stokes, the company has strategically targeted and invested in burgeoning markets. Building on their success with the RedBridge portfolio, RedSky has established a Brooklyn portfolio in excess of $1.0 billion, making it one of the largest and most successful investors in the borough. RedSky expanded into the South Florida market in 2013 and has transacted on over $500 million to date in the Design District, Wynwood and West Palm Beach. RedSky offers its investors a multi-cycle platform built upon a long-term hold strategy that results in the creation of significant value and high compounded returns through optimizing the use of existing space and expense reductions. The company prides itself on its in-

depth ability to operate efficiently after the initial acquisition phase.

The foundation of RedSky's success is their ability to identify markets with high growth potential in which to invest. The partners' belief was that "safe, desirable, cool New York" had to expand outwards, because going up was only going to be more expensive. The partners drove through the areas surrounding Manhattan and recognized that Brooklyn had a vibe similar to that of Manhattan a decade earlier. The borough had vibrant architecture, a robust parks system, and subway access to Manhattan. RedSky made a very big bet on Brooklyn and it paid off tremendously: today, RedSky is one of the largest landlords in the borough.

RedSky has been called "the ace assembler" by The Real Deal. In a market as tight as New York, the developer maintains that three attributes are critical for a successful assemblage: patience, tenacity, and the right capital partners. These three elements tie together, as assemblages often occur over a multi-year period and will result in many closed doors along the way. The capital partners involved must be willing to accept the long-term nature of the approach. RedSky also stresses that the first buy is critical. Real estate must be purchased at a low basis in case the investor is left overpaying for other parcels, and with enough scale to develop independently in case none of the adjacent parcels come into play.

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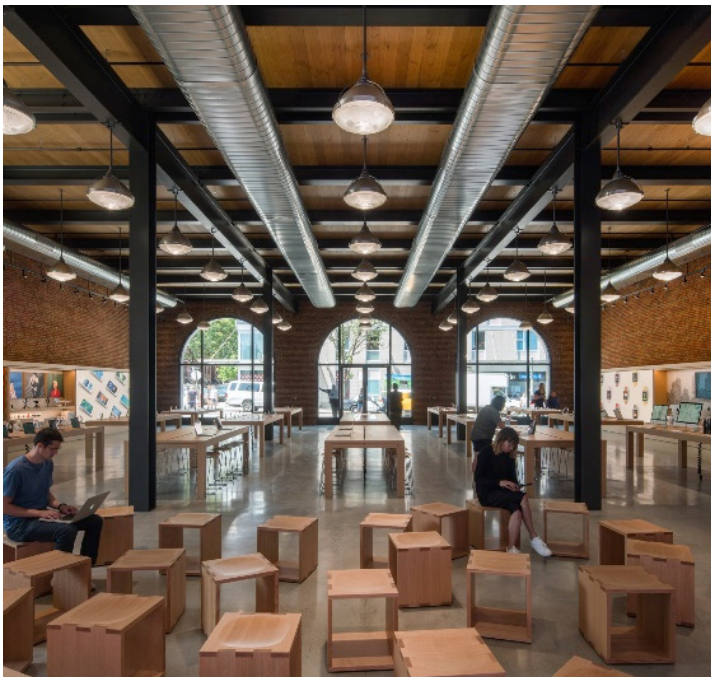

Match Made in Heaven: Investment benefits of coworking spaces in historic sacred places

Author: Daniel Wright

Daniel Wright will graduate in 2018 from the Baker Program with a Master's in Real Estate, urban planning concentration. He holds a Bachelor's in Architecture from the University of Utah and an MBA from Brigham Young University. Prior to Cornell, Daniel spent 10 years in the real estate industry as a developer and asset manager. He is interested in a career focused on town centers through urban redevelopment or traditional neighborhood development.

INTRODUCTION

Coworking has experienced exponential growth and established a global identity in the short period of a single decade. While the terms "coworking" and "shared work space" existed prior to the market collapse in 2008, their presence as an asset class and worldwide network had not developed fully. Philadelphia has seen firsthand the rapid expansion of coworking spaces with companies like WeWork and Benjamin's Desk (1776) opening multiple locations with thousands of square feet in the space of a few years. These and other coworking companies continue to see growth with some seeking to expand into more suburban areas once a CBD flagship has been established. With growing membership and a need to be near members (either directly or through transit), where are the locations in Philadelphia where coworking companies should consider investing? As coworking demand increases, Philadelphia also has an increasing inventory of vacant historic sacred places—currently at thirty-nine buildings equaling approximately 500,000 square feet (Partners for Sacred Places, 2017). This paper will first define coworking and the coworker, give statistics on coworking growth, identify key real estate needs, and finally propose historic sacred places as an alternative for coworking expansion.

1. COWORKING DEFINED

WeWork has a valuation of $20 billion (Bertoni, 2017), Blackstone purchased Office Group valued at £500 million, and Brookfield and Onex are looking at a deal to purchase IWG PLC with a market cap of £2.48 billion (Grant, 2018). Why such interest in coworking? How has Philadelphia been impacted by this phenomenon?

To get a firsthand look at these questions, I ventured unannounced into coworking spaces in downtown Philadelphia. My expectation was an open plan layout, contemporary interior design, a variety of work spaces, and hipsters sipping coffee at a large table with apple paraphernalia omnipresent. While this expectation had some accuracies, I was not prepared for the community dynamics: a place of age, gender, race, and income diversity. I was kindly welcomed at the front counter, offered coffee or water, and given a tour of the "neighborhood." Some members were public, some private. A few with larger companies and some working as freelancers.

Coworking has been explained as "a specific way of organizing people around work that, by its own nature, facilitates collaboration, characterized by the co-location of economic actors, leading in some cases to the emergence of a highly-collaborative community" (Castilho & Quandt, 2017). Some even look at the concept as a "social economy solution to an information coordination problem" (Waters-Lynch & Potts, 2017).

Figure 1. Coworking space, Philadelphia. Source: Wright, D. (2018).

Overall, coworking seems to be a refined version of a paradigm shift in the workplace that has been occurring for several years. The ultimate driver of these spaces is the desire for individuals to connect. The Global Coworking Survey reported results in Figure 2 reflecting this desire.

By creating an infrastructure for connection, coworking companies have provided healthier environments where individuals report increased happiness and productivity (Spreitzer, Bacevice, & Garrett, 2015).

Around 67%, are under the age of forty, while 28% are under the age of twenty-nine (Deskmag & GCUC Alliance, 2015). These ages indicate that this young group is engaging in a culture that will provide a foundational perception of the workplace moving forward. This will shape their expectations for the work environment as their careers develop.

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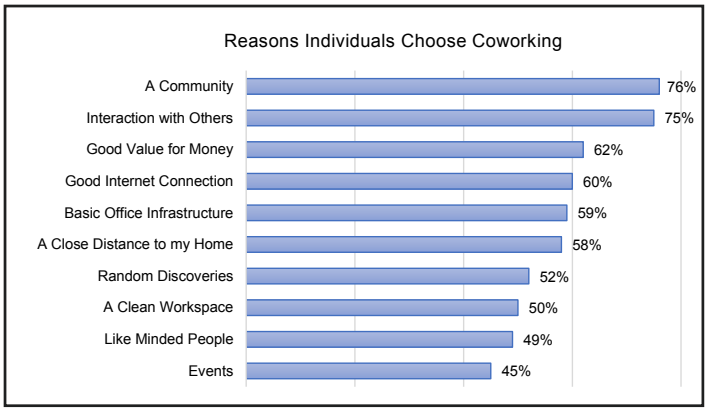

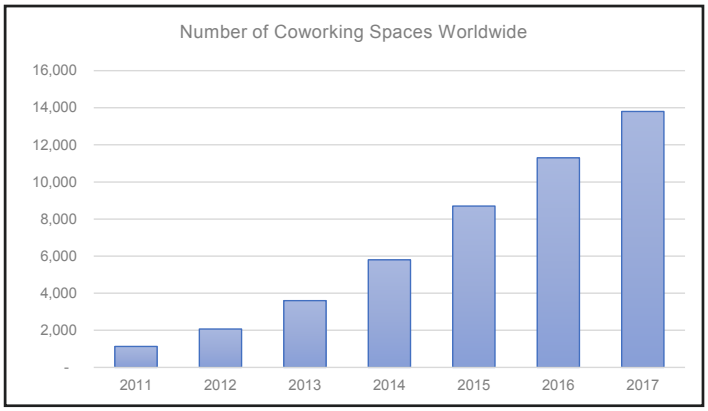

Figure 2. Reasons for Coworking. Source: Deskmag, 2016 Global Coworking Survey.

Historically, coworking space has been composed of freelancers and entrepreneurs. This, however, is changing as corporations such as IBM begin to lease from shared office spaces such as WeWork (Putzier, 2017). This trend is likely to continue. As reported by curbed.com, WeWork believes the majority of large companies will have shared office space by 2020 (Sisson, 2017). Curbed quotes Josh Emig, WeWork's head of research, as saying:

"Larger companies are trying to flatten hierarchies, pay more attention to teams, and function like innovative startups. Companies are coming to us asking 'how can we tap into this phenomenon?'"

The growth of corporate leases helps lower risk, improve financing, and increase returns. It is yet to be seen how this impacts the coworking culture or if corporate leases evaporated in a recession.

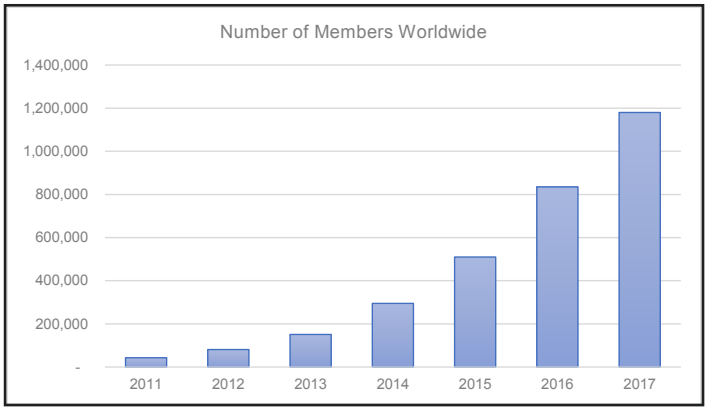

Figure 3. Coworking Worldwide. Source: Deskmag, 2017 Global Coworking Survey.

A. Coworking Growth

The convergence of funding, post-recession expansion, millennial maturation, and technological advancements over the last decade has established coworking as a legitimate asset class (Cheok & Shafeeq, 2017). Companies such as WeWork, Regus, and MakeOffice have given substance to coworking; thousands of other coworking entities worldwide have made the class ubiquitous. Figure 3 illustrates the growth of coworking on a global scale.

Philadelphia has experienced similar growth. In 2016, WeWork leased 113,170 square feet. Benjamin's Desk leased 24,221, and The Yard leased 24,000 square feet (Romero, 2017). This growth has continued with 527,000 square feet of coworking space reported in the Philadelphia CBD at end-of-year 2017 (Romero, 2017) This is an exponential increase from the 370,589 square feet reported in April 2017 and the mere 50,000 square feet in 2013 (Romero, 2017; Central Philadelphia Development Corporation, 2017). Curbed Philadelphia has identified coworking as number three for things to watch for in Philadelphia real estate in 2018 with flexibility and amenities as key factors (Cushman & Wakefield, 2016).

There are over 31 coworking companies in Philadelphia with at least 38 spaces and more scheduled to come online in 2018. The three largest companies are WeWork with four locations, Benjamin's Desk with five locations, and Make Offices with a location at City Center. Most of the growth from these three companies, as well as other coworking companies, has occurred in the last three years. These locations are depicted in Figure 5.

The average lease term for coworking space by the coworking company is five years (with many set to expire in 2019-2020) (Choi, 2010). The space is sub-leased on a per month basis based on desk or office type. Figure 6 shows example lease structures for coworking spaces in Philadelphia.

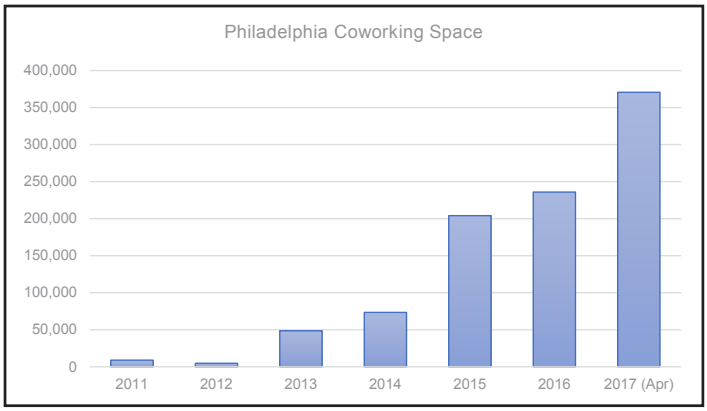

Figure 4. Philadelphia Coworking Space (square feet). Sources: Cushman & Wakefield YE2016, State of City Center 2017, Curbed Philadelphia.

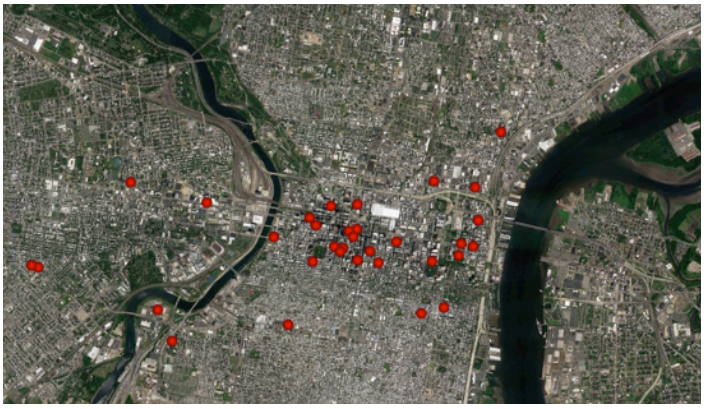

Figure 5. Map of Coworking Locations. Sources: Cushman & Wakefield, Google Maps, Coworking company websites.

B. Coworking Real Estate Needs

To help define the real estate needs of coworking companies, I conducted interviews with Chris Cooley, coworking consultant and founder of Cowork University, and Jerre Riggs, Real Estate Director for Benjamin's Desk (1776).

The following list is a summary of their points.

- Understand who the members are (or will be) and where they come from
- Plan spaces to be different to fit the needs of various members
- Locate spaces which are close to: residential areas, transit, coffee shops, bars, and restaurants
- Minimize reworking the real estate space
- Seek opportunities to expand coworking into the suburbs with easy transit back to the CBD
- Ensure the building has access to natural light and acoustics match the activities
- Program for a variety of working spaces in an open, flexible space. These include hot desks, dedicated desks, and closed office spaces.

It is significant to note from Figure 7 that nearly half of coworkers arrive by a means other than a car. This could be due to the demographic or location or both. Either way, 41% are getting to work by bike or walking. This means that a nearby residential component is especially important in order to attract potential coworking members.

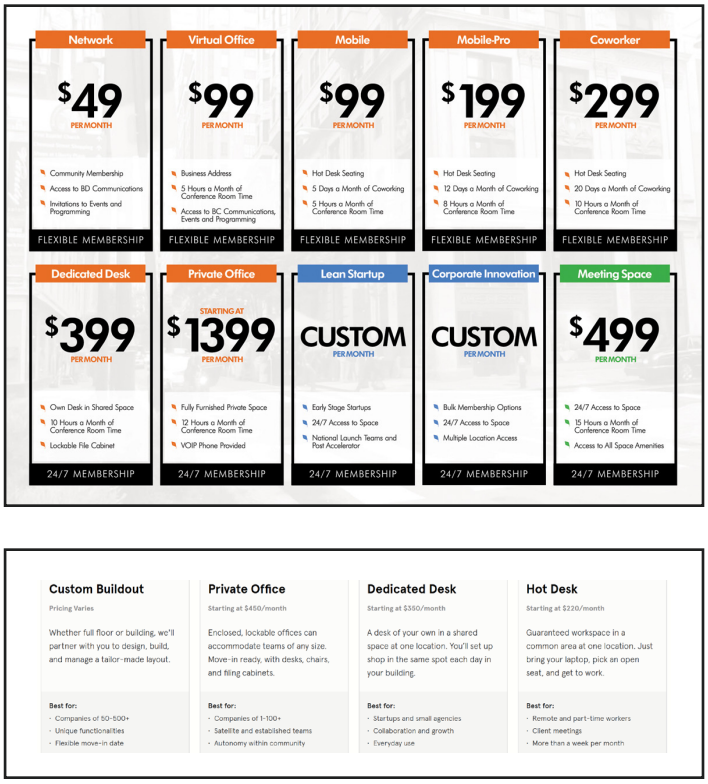

Figure 6. Coworking Lease Structures. Source: various coworking companies.

C. Coworking Summary

This paper has described the immense growth in the coworking space accommodating a continually increasing demand. It has identified key aspects for identification of potential sites and buildings for these spaces. With a need to locate near amenities, housing, and transit, and to utilize a building with space that can accommodate a variety of office types, this paper will next address a building type which may provide supply opportunities for this expanding demand.

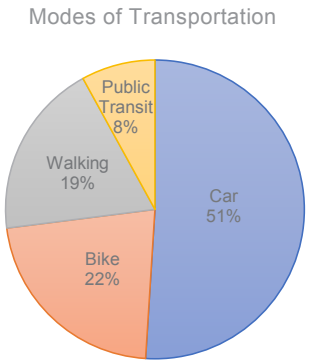

Figure 7. Mode of Transportation. Source: Deskmag, 2016 Global Coworking Survey.

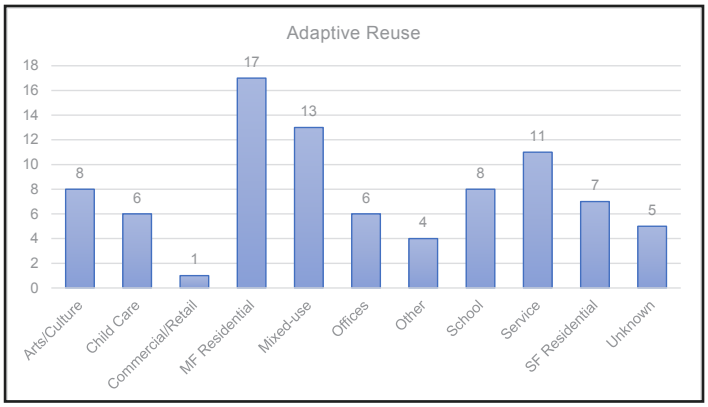

Figure 8. Uses for repurposed historic sacred places. Source: Partners for Sacred Places.

2. HISTORIC SACRED PLACES

The average size of church congregations is shrinking, impacting the ability for churches to maintain their buildings. There has been a general decline in religiosity as well as denominational shifts from traditional protestant denominations to non-denominational, evangelical churches (The Pew Charitable Trusts, 2017). Many of these non-denominational churches address a variety of community needs and play the role of community anchor in the suburban fringes attracting congregants from urban areas where churches tend to be more traditional.

This adjustment from urban church attendance has led many churches to sell their buildings due to insufficient funding. A report by the Pew Charitable Trusts identified 10% of the 839 historic sacred places in Philadelphia as being occupied by a use other than religious (The Pew Charitable Trusts, 2017). Figure 8 illustrates these uses.

While the examples of adaptive reuse show some success in utilizing these unique and challenging structures, there are currently 39 historic sacred places that are vacant—this equates to approximately 500,000 square feet. If a feasible use is not found for these buildings, they will likely be demolished—the fate of 23 historic sacred places between the years of 2011 and 2015 (Curbed Philadelphia, 2017).

The locations of the buildings with adaptive reuse and those that are vacant are shown on the map in Figure 9.

Are there significant differences between the buildings that are occupied and those that are vacant? Figure 10 is a comparison of various characteristics of both types of buildings and the site. Values are highlighted where there is a clear difference between occupied and vacant buildings. The information comes from data supplied by Partners for

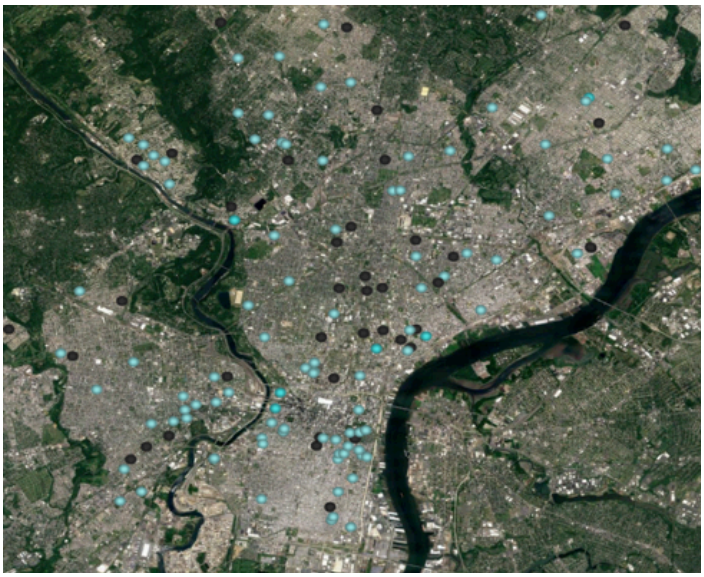

Figure 9. Map of Adaptive Reuse and Vacant Historic Sacred Places Locations. Source: Partners for Sacred Places, 2017.

Sacred Places and demographic information from ESRI that is within a quarter mile of each of the historic sacred places.

As one would expect, the occupied buildings have a higher market value and are located in the Central Business District. Having a tower on an historic sacred building appears to indicate an issue with nearly half of the vacant buildings having towers and only a quarter of the occupied buildings have one. This is interesting because both occupied and vacant buildings have a similar percentage of types of building layouts, so the tower potentially plays a role.

Parking is a key driver for the ability of a building to maintain occupancy. It is relevant for any asset class and plays a role in the municipal approval process. The challenge many historic sacred places face in receiving approval for another use, is local community activist groups. Often the argument comes down to lack of parking or increased traffic.

Median Values	Adaptive Reuse	Vacant
Number of Historic Sacred Places	86	39
Market Value	**1,243,800**	**637,900**
Dominant Location	**Central City**	**None**
Age	117	112
Years from Last Sale	18	13
Site Area (Square Feet)	12,600	10,000
Building Condition Score	0.15	0.32
Tower Above	**26%**	**41%**
Parking	**42%**	**26%**
Statistics from 1/4 Mile Radius		
Population	4,299	5,048
Household Income	39,381	40,556
Total Households	1,679	1,636
Household Size	2.28	2.54
Median Age	34	33
Owner-occupied Housing	815	805
Vacant Housing	222	142
Household w/ Graduate Degree	**253**	**167**
Total Businesses	**105**	**89**
Diversity Index	45	62
Employment	1,871	1,823
Building Layout		
Asymmetrical	15%	13%
Basilica	5%	10%
Cruciform	13%	13%
Hall	17%	13%
Row	1%	0%
Stacked Rectangle	42%	51%
Building Part of Complex	**33%**	**49%**
National Register	**16%**	**3%**
Dominant Tapestries	**Life Mode 3,8**	**Life Mode 12,13**

Figure 10. Comparison of Adaptive Reuse and Vacant Buildings. Source: Partners for Sacred Places, ESRI ArcGIS.

A recent example of this is the redevelopment proposal for St. Laurentius Church in Philadelphia in which community groups have fought the rezone and redevelopment of the property as multifamily units with lack of parking as a key argument (National Parks Service, 2017). This is not unusual. The author had a conversation with an owner of Ennis Nehez who redeveloped an historic sacred place into a shared office space. Community opposition was a key issue in redeveloping the property—parking was at the heart of the concern.

Half of the vacant buildings are part of a complex compared to a third of occupied buildings listed in the data. This may be due to the fact that the sacred places in complexes are often much larger than stand-alone buildings. Additionally, it could be due to the fact that it is easier to lease a single building. Just 3% of the vacant buildings are on the National Register of Historic Places. This may be indicative of the neighborhood's or owner's attitude toward the building. Regardless, it reflects some element that may give context for the vacancy of a place.

The dominant tapestries, as defined by ESRI, are helpful in defining the demographics surrounding these buildings. They give general traits of individuals within a quarter mile radius and provide some insight into potential uses suitable to the area. These are defined in Figure 11.

Adaptive Reuse	Vacant
Life Mode 3: Uptown Individuals	Life Mode 12: Home Town
• Young, hard-working, well-educated • Single, averse to marriage and home ownership • Like city life • Environmentally conscious • Internet dependent	• Single householders; stay close to home • Close-knit urban communities of young singles (many with children) • Owners of old, single-family houses, or renters in small multi-unit buildings • Religion is often the cornerstone • Thrifty • Nearby jobs
Life Mode 8: Middle Ground	Life Mode 13: Next Wave
• Millennials in the middle: single/married, renters/homeowners, middle class/working class • Urban market mix of single-family, townhome, and multi-unit dwellings • Well-educated • Online all the time: use the Internet for entertainment • Leisure includes night life (clubbing, movies), going to the beach, some travel and hiking	• Young, diverse, hard-working families • Multigenerational families with children are typical • Long commutes to jobs, often utilizing public transit to commute to work • High spending, focus on children and personal appearance • Top market for movie-goers and fast food

Figure 11. Dominant Tapestry Segments. Source: ESRI.

The adaptive reuse buildings are generally located in areas with millennials, singles, and well-educated, technologically savvy individuals. The vacant buildings are located in diverse neighborhoods with hard-working multi-generational families.

A. Financial Considerations for Adaptive Reuse of Historic Sacred Places

It is important for coworking spaces to create a unique identity, often with a local flavor reflected in the tenant base. Historic sacred places can provide instant brand recognition with their timeless architecture and features. Rehabbing these buildings can be much more than a preservation mission; it can be an important value creator that leads to higher profits. To get to the profits requires an understanding of the costs associated with adaptive reuse as compared to new construction. The book Rehabbed, Retired, Reborn compares construction elements for rehabilitation of an old building versus new construction (Simons, DeWine, & Ledebur, 2017). Costs that are generally lower for rehab are site prep, foundation, building shell, windows, doors, and elevator installation. Costs generally lower for new construction are acquisition and demolition.

As with any real estate transaction, this highlights the importance of buying the property at a low purchase price. Often the beneficiary is the second or third purchaser of an historic building where significant renovation has occurred at the expense of the previous owner's profitability and the property sells at a discount.

It must be made clear, though it should be obvious, that historic sacred places are not created equal. Sacred buildings are all different in programming, size, and design. Every neighborhood varies. To "copy and paste" without accounting for these considerations is a mistake. Likewise, coworking spaces must be tailored to the specific building and site with a clear knowledge of the demographic needs of the area.

B. Historic Tax Credit

Thanks to the Senate, the Historic Preservation Tax Credit was retained in the 2017 federal tax law, though with some modifications to timing and transition which details are forthcoming. This incentive is a 20% income tax credit for the rehabilitation of "certified structures," with the new law stating this is to be taken over a five-year period (Pennsylvania Departmnet of Community and Economic

Development, 2017). The State of Pennsylvania allows for a maximum of $500,000 of total tax credits per fiscal year to a qualified tax payer (Simons, et al, 2017).

3. THE COWORKING HISTORIC SACRED PLACE MATCH

Historic sacred places match well with coworking. These buildings often have characteritics to meet the needs of coworking spaces such as having access to transit, being near amenities and housing, and consisting of a variety of interior spaces. Of the thirteen church buildings currently listed on Loopnet, the average walk score is 87 out of 100, the average transit score is 70 out of 100, and the typical zoning is residential with adjacent commercial uses. In addition to these locational alignments, coworking is ideally suited to optimize the space of an historic sacred place. With minimal infrastructure, coworking utilizes private desks that are extremely flexible and can be placed in open

			
	Nehez Valerie	**Corporate Facilities, Inc**	**CWA Local 13000**
Address	3580 Indian Queen Lane	2129 Chestnut Street	2124-2128 Race Street
Current Uses	Interior Design	Furniture Design	CWA AFL-CIO
Year Built	1872	1883	1855
Land Area	5,143	14,720	5,600
Bldg Area	10,800	17,000	13,936
Last Sale	10/29/2008	10/27/2005	11/11/1986
Sale Price	$1	$3,800,000	$1,470,000
2018 Value	$1,701,900	$3,939,700	$2,647,800
2018 Value/SF	$158	$232	$190
1/4 mile Radius			
Avg. Income	$77,738	$50,574	$111,210
Population	6,237	5,270	4,979
Households	3,260	2,460	3,007
Owner-occupied Housing	1,594	1,246	1,847
Vacant Housing	180	244	231
Total Businesses	527	113	437
Employed	4,474	2,791	3,139
Tapestry	8-Millenials in the middle, mixed housing	3-Young, intelligent, urban singles	3-Young, intelligent, urban singles
Number of Comps	1	15	9
Avg. Sale Price	$900,000	$17,297,697	$6,942,222
Avg. Price/SF	$56	$151	$325
Zoning	CMX-1	CMX-4	RSA-5
Adjacent Zoning	RSA-5	CMX-4	RSA-5
Distance to Rail (miles)	0.24	0.06	0.3
Distance to Bus Stop	0.2	0.06	0.06

Figure 12. HSP's with Adaptive Reuse of Office. Sources: ESRI, Philadelphia City, REIS, Google Earth.

spaces that capture a value premium in addition to private spaces and public areas.

A. Key Challenges of Coworking and Adaptive Reuse of Historic Sacred Places

Coworking

- If the demographic does not support the coworking model, the space will fail
- It is difficult to establish and maintain "community"
- Barriers to entry are increasing with the established tenure of large coworking companies
- Designing a space to facilitate conversations between a variety of people is difficult

Historic Sacred Places

- Deferred maintenance costs
- Getting a project approved within certain neighborhoods can be long and arduous and directly impact costs as the building deteriorates
- The programming of the building may be challenging

4. EXAMPLES

A. Examples of Adaptive Reuse in Historic Sacred Places in Philadelphia

While there are no current examples of coworking in an historic sacred place in Philadelphia, there are some examples of adaptive reuse worth noting. Below are three examples of office as an adaptive reuse in Philadelphia.

The Nehez Valerie building is a relevant case example. It was sold because the church no longer had a congregation to support the building. It was purchased in 2008 after a couple of years of planning and negotiations. A portion of the building was originally intended to be residential but the 2008 market crash eliminated residential financing. To fill the building, the owners created a shared workspace, including yoga and therapy studios in the seven-foot basement. The biggest issue in getting approvals was neighborhood activists concerned about the lack of parking. It has thrived as a shared office space and currently has full occupancy.

A recent publication on the adaptive reuse of historic religious and school buildings, outlines observations of the likelihood of an office use in an historic religious or school building (Simons, et al, 2017). It details a research project directed by Robert A. Simons, distinguished professor at Cleveland State University. The project observed 220 religious properties across the United States with identifiable use outcomes for 144 of the properties, 8.3% being office and 34% being multifamily residential.

- The following are characteristics when office was more likely than apartments to be the adaptive reuse.
- When conversion occurred during years of lower interest rates
- In the case of smaller buildings
- Building located near highways, inner cities, or downtowns
- Buildings in areas with lower vacancy rates

5. COWORKING IN HISTORIC SACRED PLACES

Philadelphia doesn't have any current examples where historic sacred places have been renovated to be used as coworking spaces. There are, however, examples in other places. Below are three examples.

Example 1. Whitney Cultural Commons. Source: www.whitneyvillecul-turalcommons.org

A. Example 1: Whitneyville Cultural Commons

Location: 1253 Whitney Ave, Hamden, CT 06517

Whitneyville combined several uses to be a successful model. Coworking combines with social and cultural events to use the space the majority of the time while allowing the church to continue to worship on Sunday. This was a community asset that a husband and wife purchased to preserve community events while helping profitability through coworking.

Example 2. St. Lydia's. Source: http://stlydias.org/co-working/

B. Example 2: St. Lydia's

Location: 304 Bond Street, Brooklyn, NY 11231

This is an historic building in Brooklyn that was renovated to function as a church and coworking space. Church includes a waffle worship service for families.

Example 3. The Mix. Source: www.themixcoworking.spaces.nexudus.com

C. Example 3: The Mix

9125 Diceman Drive, Dallas, Texas, TX 75218

This is a 1940's church facility of 60,000SF where 14,000 SF is utilized for coworking space.

These three examples show the variety of options available for both the historic space and the coworking use—rural to urban, Connecticut to Texas, individual buildings to a complex.

6. NEXT STEPS

This paper has looked specifically at historic sacred buildings. Further research is important to understand the larger picture for real estate investment where coworking can provide an anchor for future development beyond just the building. Often there are nearby assets also available for redevelopment that provide a mutual benefit. Examples include outparcels and housing. The coworking community is looking for urban spots that provide a tenant base in residential property and amenities in commercial properties. Historic sacred places are often located in areas to capture both benefits.

The challenges associated with the adaptive reuse of historic sacred places are not unique to Philadelphia. There are thousands of these vacant buildings, not only in the U.S. but internationally. Coworking has proven to be a scalable model and can be, in fact it is has proven to be, adapted to thousands of communities worldwide. Combining historic sacred places and coworking should be explored in other communities as both demand and supply continue to grow.

For real estate investment, valuation of coworking space should be further explored. This includes defining its asset class and determining the most appropriate way to account for cash flows (historical versus expected).

7. CONCLUSION

The match of coworking and historic sacred places is an opportunity worth exploring in Philadelphia. Coworking has established itself as a model for workspace moving forward. Historic sacred places are uniquely designed to capture a portion of this opportunity. Understanding how to use these buildings and capture a community anchor, will benefit Philadelphia neighborhoods while providing an investment return.

Research has identified several benefits associated with adaptive reuse: employment, city center revitalization, heritage tourism, property values, small business incubation, smart growth, and recycling costs (Mizra-Avakyan, 2013). In addition to these community benefits, adaptive reuse of an historic sacred place can provide direct real estate investment value. Redevelopment of an historic sacred place can provide a value capture not only in the building but also in surrounding properties. Investment in an historic sacred place can provide a catalyst to redevelopment in an inimitable way. They are recognizable, distinguishable, brandable, in key locations, historically significant, and composed of unique multi-purpose spaces.

There are thirty-nine vacant historic sacred places in Philadelphia. There is an explosion of demand for coworking space to accommodate the working desires of an ever-growing demographic. This paper has studied the potential for this match. Applying the marriage of this supply and demand can yield profitable results and be a boon to community and economic development.

8. ACKNOWLEDGEMENTS

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Multifamily REITs: Colombia's opportunity to attract foreign capital

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INTRODUCTION

The real estate market in Colombia has been very active during the past decade. Government spending through a free housing initiative and the stable and favorable political environment have incentivized capital flow into the country. All asset classes have benefited from the investments. Commercial real estate developments have taken advantage of this economic growth, but the residential market has been the strongest as an average of 230,000 units have been built and sold every year since 2013. Colombia still has room for residential expansion. Housing shortage is close to 4 million homes and it is estimated that 35% of the population are renters. This paper explores the history of the mortgage system, explains the current investment vehicles for real estate, and proposes an alternative to inject liquidity and stimulate housing production. The focus of the investments should be on operating the assets rather than selling them. The business model of building and renting out units has been overlooked in the country, with a potential rental market of 14 million people.

1. UNDERSTANDING THE MARKET

The Colombian real estate market has been dynamic for the past 12 years. Commercial real estate has expanded as GDP grew at a 4% rate until 2014, 3% in 2015, and 1% in 2016 (Banco de la Republica, 2016). The slow but steady economic growth (Srini, 2017) has strengthened the case for Colombia as a good alternative among other emerging markets. Recent social and political events, such as the peace treaty with Colombia's oldest rebel group, suggest that this could be the right time to invest.

The real estate market has been active on several fronts. The hospitality industry has expanded with the major hotel chains in the principal cities (Procolombia, 2014). The logistics sector has also had some growth, taking relative advantage of Colombia's strategic geographical location (Procolombia, 2014). Colombia has access to both Pacific and Atlantic Ocean ports and is at the midpoint of the Americas. This asset class will have room to grow further as Colombia's infrastructure matures. Retail has grown through shopping centers in large and some intermediate cities. A total of 12 new centers opened between 2015 and 2016 (El Tiempo, 2015).

Colombia's housing market presents shortage in quantity and quality across the board (DANE, 2015). Important efforts have been made to close the gap. Developers have put in place an average of 230,000 new units of housing each year since 2013 (Revista Dinero, 2015), but the rate of growth is decreasing. The primary reason for the low building rate of 6 units per 1,000 inhabitants (Revista Dinero, 2015) is correlated to the government's effort to build 100,000 houses. The initiative aimed to give housing free of charge to the most vulnerable sector of society (Ministerio de Vivienda, n.d.). This program comes as other government-funded programs were aimed to support

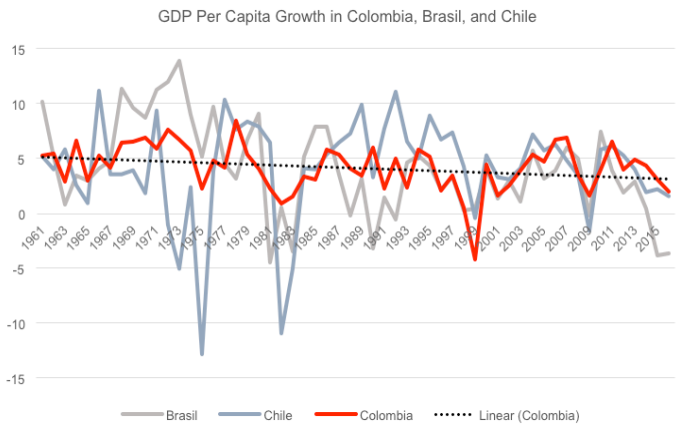

Figure 2: GDP per capita. Colombia's GDP growth has been slow but increasing since 1999. Colombia's economic policy has been historically conservative being more resilient to external phenomena. Source: World Bank, Brito, J.(2018).

the qualified first-time buyer. A subsidized interest rate and reduction of down payment are the two common forms of government support still in effect today.

Housing has the greatest opportunity for investment and long-term growth. The market size and the lack of capacity for ownership make rental properties an untapped opportunity, ensuring stable cash flows after development. Developers have focused on primary markets (Bogotá, Medellin, Cartagena, and Cali) and only recently have turned to emerging cities like Popayan, Villavicencio, Neiva, Santa Marta, and Valledupar (Revista Dinero, 2015). The housing serves the top and the bottom tier of the socioeconomic spectrum, leaving a 4 million home deficit in the middle class and lower middle class.

Colombia's population is 48 million people, 70% of whom are urban dwellers (World Bank, n.d.) with 35% of this urban population living in rental properties (Revista Dinero, 2016). Statistics show that only Santo Domingo and Quito in Latin

American have this percentage of renters (Ramos, 2015). Renters include everyone from the blue-collar workers to the upper-middle class. The market includes 34% of the total population earns one “minimum monthly wage” ($230 USD), and 29% that earns around $460 USD to $690USD. Another 15% earns between $920 USD to $1,380 USD (Finanzas Personales, n.d.). The remaining 22% comprise the extremes. The Minimum Wage (SMLV) is established every year by mutual consent of the labor unions and the business associations mediated by the government. About 6% earn above the described brackets and 16% earn below. This is the segment of the population that has received the most attention in residential development.

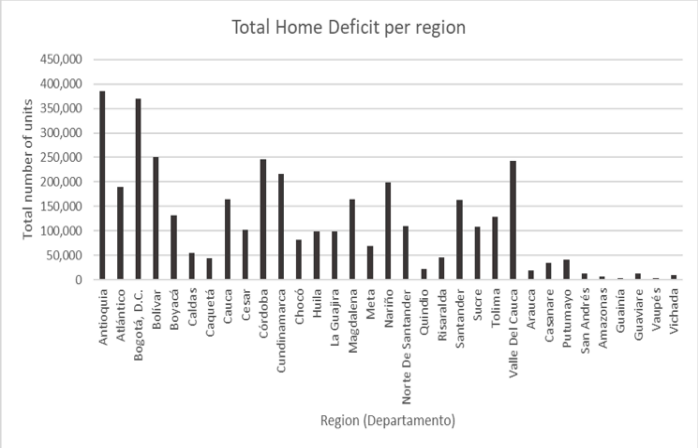

Figure 3: Home Deficit. In 2005 the estimated need was 3.8 million homes. The division is presented in regions. The major deficit is in the biggest regions and trends down as the regions get smaller. Source: Dane data.Brito, J. (2017).

Figure 4: Paloquemao. Example of traditional low-income housing in Bogotá. The free houses offered today resemble this model, normally a five-story walkup building with some space for amenities. Source: Pardo,J. (2018)

An estimated 78% of the population—mostly blue collar, lower middle class, and middle class—faces difficulty entering the financial system due to their income and/or the nature of their labor contracts, putting them outside the range of eligibility for major housing subsidies and limiting the possibility to obtain a home mortgage from a private institution.

The mortgage system is a pivotal feature in home buying. To understand an investment opportunity in the Colombian housing market today, it is necessary to understand the evolution of the housing policies, the development plans, and the mortgage system.

2. DEVELOPMENT PLANS, ZONING, AND HOUSING POLICIES

Colombia’s general development plan has its roots in the 1960s. Latin American countries had united around the Alliance for Progress (Gonzales, 1994). This alliance was designed by the administration led by U.S. President John F. Kennedy to align the economic interest of his country with those of Latin American countries. Some of the important aspects of the alliance were palns to aim for more equitable income distribution, land reform, and economic and social planning (John F. Kennedy Presidential Library, n.d.). Urbanization trends, slow economic growth, and violence in some regions led rural residents to move to cities looking for better opportunities. The urban sprawl and the failure to realize the benefits of the proposed US political and economic interventions led the Latin American countries to build their own agendas. The Latin American Institute of Social and Economic Planning (ILPES), formed in 1962, provided the blueprint for Latin American city development.

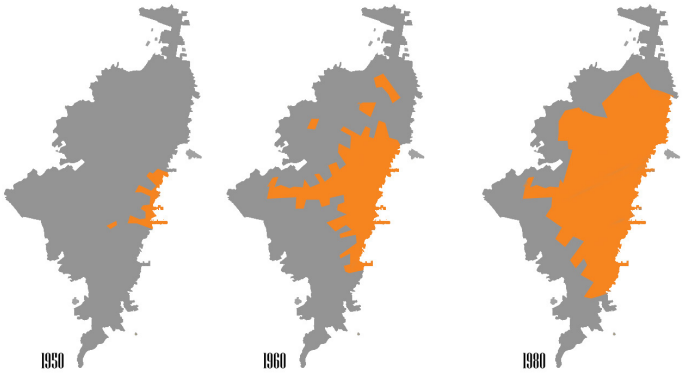

Figure 5: Bogotá’s Oil Spill Growth. Bogotá’s “oil spill” growth shows the rapid and uncontrollable urban sprawl. Decades of poor planning and political problems lead to population gathering among the outer rings of the city and, more recently to the periphery. Source: Brito,J. (2018).

Figure 6: Ciudadela Colsubsidio. Colsubsidio housing complex. Designed in 1980 by architect German Samper. This 140,000-housing unit development was sponsored by a worker's compensation fund and built in Bogotá. This project set the trend for the '80s and '90s in urban developments tackling affordability and quality. Source: Fabra,S. (2014).

In the 1960s, Colombia's farmers were unable to sell their goods in the international markets. The upsurge of the war between the two political parties (Liberal and Conservative) and the formation of different rebel groups fueled a mass migration of people to the cities. Bogotá, for example, grew from 715,250 people in 1950 to 1,697,311 people in 1960 and 2,855,065 people in 1970 (Instituto de Estudios Urbanos, 2017). Before 1990, Colombia based its development plans on the opinion of experts from around the world, but with no systematic governmental approach towards development and growth. The country grew rapidly but with no clear direction (Gonzales, 1994).

Colombia developed a new government-sponsored development plan with the new 1991 Constitution. The new framework set out the basis for 9-year development plans made by every state (Congreso de Colombia, 1994). This gave the people initiating the development plans three government terms to execute and revise their schemes. It is important to note that the word "revision" is included in the constitution. It indicates that there is the constitutional guarantee that the plans adapt but not change completely in every 9-year period. The contradiction arises when developments that span for longer periods, infrastructure for example, end up competing with the 4-year presidential tenure. Every new president sets the educational, institutional, development, and infrastructure goals that are modified based on the elected official political agenda. This has created a conflict between the country's plans and the development of cities. Development becomes a political instrument for future governors, mayors, and presidential candidates. Housing becomes a very valuable commodity to attract voters.

3. HISTORY OF THE MORTGAGE SYSTEM

Although the general details of the entire financial system are beyond the scope of this paper, it is necessary to review briefly the mortgage system since the 1950s until the 1980s, when the current system was set in place. The modern mortgage system in Colombia should be understood through the eyes of one institution, the Central Mortgage Bank (BCH).

Colombia's mortgage system was born in 1926, funded by foreign capital and put in place by a few financial institutions (Urrutia & Namen, 2010). This mortgage system had a short life span as their dependency on foreign capital made it vulnerable to the 1929 financial crisis. The financial institutions went bankrupt after 1930. Through a 1932 decree, the central government created the Agrarian Credit Savings Bank1 and the Central Mortgage Bank (BCH)2 (Urrutia & Namen, 2010). The BCH was the only institution funded by the government willing to lend for a 10-year period, something not present in the financial system of the time. By 1972 the BCH was the leading home lending institution for all types of projects. The bank helped put in place 756,363 homes in Bogotá before 1993.

In 1972 the Colombian banking system decided to switch its currency adjustment mechanism (monetary policy) to the Constant Acquisition Power Unit (UPAC)3. This mechanism aimed to adjust money against CPI4 so it would not lose face value with inflation and time. This change also reinforced the idea that people would be encouraged

1 Caja de Crédito Agrario

2 Banco Central Hipotecario – Central Mortgage Bank

3 Unidad de Poder Adquisitivo Constante

4 Consumer Price Index

to save more money, and this would maintain the liquidity of the financial system.

In 1974, the new government started to rethink the adjusting mechanism and decided to change to Fixed Term Deposits (FTD)5 (Banco de la Republica). This change proved to be detrimental for the BCH and the mortgage system. CPI correction was aligned with the users' purchasing power, but the FTD correction was adjusted by the financial system and did not consider the CPI. During this period, Colombia had an inflation rate of about 20% that directly affected directly the CPI; the new correction method was linked through Fixed Term Deposits that soared higher than CPI at the same time. This mismatch in the adjusting mechanism caused loan amounts to double or triple, making the payments higher and ultimately causing a mass default.

In 1999, the constitutional court determined the refinancing practices of the BCH were illegal and the government had to intervene. The court stated that due to the change in the adjusting mechanism, it was impossible for users to repay their debts and this contravened the constitution (Urrutia & Namen, 2010). This caused private financial institutions to step in to fill the gap and become the primary source for mortgage lending in the country.

4. THE FINANCIAL SYSTEM TODAY

The private lending institutions took over the mortgage lending system and started to work closely with the government to incentivize home ownership. The new 1991 government adopted a free market economic policy that caused an inflow of funds from international markets. Independent financial institutions started lending more mortgage money and loans grew a staggering 165% between 1990 and 1997 (Urrutia & Namen, 2010). Mortgage lending abruptly stopped in 1999 when the real estate bubble burst. Foreign capital withdrew and the oversupply of space was unable to be absorbed. This crash caused mortgage lending to stop almost completely until 2005. The reactivation of lending in 2005 was spearheaded by private banks through conventional loans (Urrutia & Namen, 2010).

A new period of financial prosperity began in 2005 and continued until 2009 when another financial crisis occurred. By early 2009, the government was interested in helping finance housing and construction since this was the traditional way to maintain economic growth and be countercyclical to the economic crisis. The government promoted a subsidy system, still in place today, helping potential owners by subsidizing monthly payment for the first 7 years of a home loan. The subsidy can amount to up to 5% of the loan interest. This makes the mortgage system viable for many families.

In recent years the subsidy has gone to 0% down payment and included a free housing initiative. Both programs are politically popular but often encourage economic downfall. The 0% down payment has systematically increased default rates amongst a population that does not have the financial stability to make monthly payments (Urrutia & Namen, 2010). The free housing initiative presents the same problem as people who have absolutely no means and are now forced to pay housing taxes and basic utilities (water, electricity, gas). They are forced to rent out the property, which is illegal, or have had to forgo the property.

5. MARKET DYNAMIC AND SIZE

The primary source of information to understand the mortgage system dynamic in Colombia is the National Department of Statistics (DANE)6. DANE provides a quarterly report on the mortgages and tracks the delinquency rates for those loans, number of homes financed, and construction statistics.

In 2016, 30,368 homes are subject to financing. This includes both social housing and the private housing sector (VIS and NO VIS7). Splitting 60%-40% between new and used, the financial system has deployed around $550 million USD on housing loans in the second quarter of2017. Metrics for the second quarter of 2017 show that 14,564 NO VIS homes have been financed with $423 million USD. By comparison, VIS loans account for 15,822 homes and US $127 million USD.

The most recent DANE report also follows the mortgages in a four-year period, from the first quarter of 2013 to the fourth quarter of 2017. The first important metric is that the mortgage system has grown by 3% from the first quarter of 2013 until the first quarter of 2017. Approximately $12.2 billion USD is commited to the mortgages in the first quarter of 2013; as of fourth quarter 2016, there are about $18 billion

5 Depósito de Tasa Fija

6 Departamento Nacional de Estadistica

7 VIS stands for Social Housing. Social Housing has specific rules around size and price. Anything that does not fit into the criteria established by the government, is not legible to receive financial benefits from the government.NO VIS would comprise any housing not covered by the specific VIS rules and benefits, but could still be part of certain government-oriented policies such as subsidies to the interest rate

USD. Separating the mortgages by housing type (VIS/NO VIS)8 the growth in both types of development has been 3%. Still, the amount of mortgage backing for VIS is much smaller than the number for NO VIS. The numbers show that VIS mortgage only accounts for 30% of all outstanding mortgages.

Private credit institutions account for the greatest number of loans. These institutions accounts are 83.4% of all loans originated in the first quarter of 2017. The next biggest player would be Nacional Savings Fund9 with 10.6%. It is evident that the market relies very heavily on private institutions. This dependency opens the door for alternative funding of projects and, looking at this through a conventional capital stack, the Colombian market lacks subordinate and mezzanine debt lenders that take an active role in the real estate development process.

The delinquency rate is tracked through DANE records. In Colombia, the delinquency rate is measured by first payment delinquency, and shows a consistent 2% to 3% during a four-year span. This is consistent with Colombia's conservative economic policies and financial institutions. High entry barriers and high interest rates might be reasons why delinquency rates are so low. On the other hand, this conservatism and high entry barrier has helped Colombia withstand global economic fluctuations better than other countries in the region. The national growth rate of about 5% to 8% has been consistent for the last four presidential terms and has been resilient to global macroeconomic factors such as the 2010 financial crisis.

The loans are originated in the major cities and metropolitan areas. Bogotá accounts for 42.2%, Antioquia for 12.3%, and Valle del Cauca for 8.1%. These three have the biggest population centers in the country (Bogotá, Medellin, and Cali) and represent the main sources of production. Bogotá as the financial center, Medellin as manufacturing hub, and Cali as the major agribusiness hub directly exported through the Buenaventura Port. All other mid-size regions account for less than 5% each. This helps understand the concentration in the Colombian real estate market. The midsize regions receive little attention because the capital and the bulk of the housing need is found elsewhere. The delinquency rates are higher in Bogotá and scale down as the amount of loans deployed get smaller.

DANE also indicates the pipeline of new projects. Looking at a study for the years 2012-2017, we can understand better the number of units added and the dynamics between VIS and NO VIS housing becomes clearer.

The most insightful metric is the project pipeline for VIS and NO VIS homes. The VIS housing supply has an average annual variation of -4.2% since 2012. During the same period, the NO VIS supply has an annual variation of +5.5%. This metric suggests two things. First, the housing shortage for the lowest income population has been systematic and will continue to expand if the government halts the cash flow or the incentives to developers. Second, the extremely high entry barrier of the banking system has completely isolated the segment of the population that needs to finance its housing needs. The dissolution of the Central Mortgage Bank in the 1990s expanded the shortage of lower and lower middle-class development projects, not fully serviced by government incentives or financial institutions.

On the other hand, developers have found niche markets, especially for the upper middle and high-class individuals, who are able to bypass the high entry barrier of the financial system and become homeowners. The first quarter of 2017 statistics show 3,460 million square meters (11 million square feet) being built in the VIS market and 17,487 million square meters (574 million square feet) being built for NO VIS housing. These numbers translate to NO VIS building representing 68.5% of new supply. Looking further it is clear that the 2016 distribution of the loans against building permits approved indicate that 39% of new housing permits are for low and low-low socioeconomic status that fit into the VIS category. It is important to note that 22% of permits are for lower middle class, 22% for middle class, and 17% for upper middle class and high class (DANE, 2016).

The market is highly segmented on the two opposite sides of the spectrum. On the one hand, higher income individuals have found a market to obtain their first home and, in many cases, rental properties. On the other side of the spectrum, extremely low-income residents have been awarded free housing through programs that have proven inadequate both socially and economically. The middle class, especially lower middle class, has gotten less development during these years. This demographic constitutes about 13.8 million people in middle class and 16.5 million in the lower

8 IBID.

9 The FNA is the institution created by the government to manage the severance of all legal workers. Every month, employers withhold a percentage of the employee's salary and deposit it to the FNA account. The money can only be withdrawn if the employee is going to buy/fix a house or pursue an education in an institution of higher learning.

middle class (Finanzas Ya, 2016). Currently, about 3 out of every 10 people live in rental properties (Torres, 2012) and earn between 1.5 and 2.5 times the minimum wages10.The household size is approximately 3 people per household, but it is not consistant through the county and varies from region to region.

6. CONSTRAINTS FOR DEVELOPERS

Like the constraints for the potential home buyers, the developers in Colombia have very high entry barriers to finance almost any type of development. The development model centers on conventional bank loans and selling of units instead of renting them. Condo development, as defined by the US market, is the most common alternative for developers.

Developers start with a parcel of land that belongs to the development entity and have done the entire permitting process before units are offered. This means that the competent authorities have validated the design of the building or buildings, have acknowledged the structural design as compliant, and have cleared zoning limitations after having suggested changes to the original design to comply with current laws and regulations. The process also involves the acknowledgment of entitlement and availability of basic utilities. It is important to understand that this process does not involve the community in any way.

At the beginning of sales, the developer partners with two possible entities: welfare funds and/or financial institution. Financial institutions will back up the deal in two ways: as a fiduciary agent and as a construction lender. The bank as a fiduciary agent is a system put in place by the end of 1990 aimed to protect home buyers from investing in projects that could potentially fail (Medina Vargas & Vasquez Torres, 2014). Developers, before the law, could start construction with just a few units worth of sales and no financial backup to finish the entire project. Developers would aim to continue sales after starting to successfully complete the building. When the project became financially distressed, construction stopped and no cash was left to return to the original investors. The remaining asset to foreclose was an incomplete building, with limited salvage value, leaving investors empty handed.

Currently, the developer may only start the construction process if he has the complete amount to finish the project and the construction loan has been deployed (Medina Vargas & Vasquez Torres, 2014). The threshold is put in place to ensure that the asset will be completely built.

This process often forces developers to access loans through personal guarantees to the bank and has the additional constrain of having to sell units before he can even begin construction. This is the primary reason that there is very little development for rent, in what in the US market is referred to as apartment buildings. Hence, the capital stack in Colombia is very limited. There is a senior loan followed by equity. The senior debt is primarily done by financial institutions. The pension funds are not direct players in the capital stack. Their allocation has been limited by government and is roughly divided into 36% public debt, 24% foreign stock market, 17% local stock market, 11% local debt market, 6% private funds, 3% foreign private debt, and 3% at free will (Buitrago, n.d.). Only in recent years have some foreign investors stepped in and contributed financing mechanism but without a holistic approach regarding capital allocations from foreign capital. This limits most developers, unable to find alternative financing methods.

Finally, it is important to understand that in a condo oriented market, there is a lack of operators. This will be further explored in the next section, but the lack of market for apartment buildings has inherently caused a lack of companies doing property and asset management.

7. REITS: AN ALTERNATIVE TO FOSTER CHANGE

Proposing alternatives to foster new and better development is a critical part of this paper. As mentioned before, the constraints for both the potential home buyers and for the developers of these products indicate that there is a need for new incentives. An alternative to consider are REITs, which have been successful in the US, allowing people to efficiently and easily diversify their portfolios with real estate. In recent years, the implementation of REITs in Mexico (FIBRAs) have capitalized more than $13 billion USD (Martinez, 2017).

The Colombian context has offered similar alternatives throughout the years. Trusts, Real Estate Mutual Funds, Mezzanine Debt Fund, International Fiduciary Right (FIDI)11, Collective Real Estate Investment Fund (FICI)12,

10 Colombia has SMLV which stands for Current Minimum Legal Wage. It is set annually through the negotiation of the unions and the industrial sector and is mediated by the government. Currently, the SMLV is set at about $250 dollars a month.

11 Figura Internacional de Derecho Fiduciario (FIDI)

12 Fondo de Inversion Colectiva Inmobiliario (FICI)

and Private Capital Real Estate Funds (FCP-I)13 are products offered for individuals and institutional investors to invest in commercial real estate through a private equity structure. The legal framework for FCP and FICI is in Decree 2142/13, Trusts are regulated by the commercial code, and mutual funds were established by law in 2003 (Congreso de Colombia, 2017). The complexity in structuring, regulations, and different stakeholders have provided equity to less sophisticated developers.

The two most relevant investment vehicles would be the Real Estate Investment Funds, FICI and FCP. The FCP is limited to professional and institutional investors with a minimum investment amount of 600 times Minimum Monthly Wage (SMLV)14, around $150,000. Investors gather funds and evaluate an offering presented by the developer-partner as a bundle. This could be land, buildings or debt that cannot be individually selected by the investors. They buy, hold and sell the investments according to the investment vehicle rules and regulations set upon with the structuring entity and, at disposition of the assets, equity is distributed through an equity waterfall. Upon returns on investments, taxation law allows for the original investment to be tax free and earnings will be charged with 39% capital gains tax (Cortes & De Bedout, 2016).

The FICI Structure is similar to the FCP structure with regards of the applicable law and the opportunity to invest in both equity and debt. The difference is that FICI are funds also aimed at individual investors, with no minimum investment amount, and with the obligation of investing 75% of their equity on real estate related activities. The tax benefits are less appealing for the individual investor. After equity is distributed through the waterfall, original equity and earnings are taxed at 39%. It is important to understand that both FICI and FCP could be introduced to the stock exchange and be traded in it but only a hand full have attempted this (Cortes & De Bedout, 2016).

The funds have focused primarily in industrial properties, shopping malls, condo sales, and land ownership but are not active in the rental housing market (Cortes & De Bedout, 2016) (NAREIT, n.d.). Even though these funds sell themselves as REITs, the truth is that they are far from offering the financial benefits that a REIT offers. The long holding periods directly affect the liquidity of the fund, the investors cannot actively trade and the funds are not benefited by consistent capital injections. The market needs to offer a dynamic investment vehicle that can quickly, and in a less restrictive manner, allocate funds where the market needs and on the property type that will produce the highest returns. REITs will offer a better solution for a growing market, with high occupancy rates and with good market fundamentals.

8. STRUCTURING GROWTH

REITs offer a well-rounded investment vehicle that can allow for different institutional investment as well as a new offering in the stock market. REIT structure ensures 75% of funds will be allocated into real estate projects and will ensure liquidity to all asset classes. Furthermore, distributing 90% of its earnings will incentivize allocations from investors unwilling to tie capital for several years before they receive profits (NAREIT, n.d.). The model is attractive for both institutional and individual investors since earnings are recaptured without selling shares.

The REITs have a less restrictive allocation criteria, different from the current fund structures that limit the way the management company decides when, where, and how to invest. The less constrained investment criteria can improve funding in all real estate asset classes and improve market dynamics. REITs will have the ability to strategically allocate investments in, for example, smaller developments in alternative markets that would have not been able to access bank loans or appear in the investment portfolio offered to a fund.

These funds will also have the chance to offer different interest rates when lending, competing with the rates of banks and improving the financial alternatives for all. Value-add developers, currently not very active in the market, will find new lending opportunities either with mezzanine debt or loans to reposition assets. All these improved market dynamics will also encourage companies to operate the assets to ensure consistent cash flow, critical for REITs and their commitment to stock holders. Finally, taxation structure for the REIT and the distributed earning will be a tipping point. No corporate taxes to the REIT and no capital gains tax from distributed earning can prove instrumental to all investors.

9. CHALLENGES

REITs in Colombia will face several challenges in their implementation. One possible challenge will be that the Colombian market will offer a limited availability of asset, property and portfolio managers that can properly operate

13 Fondos de Capital Privado Inmobiliario (FCP-I)

14 Salario Minimo Legal Vigente (SMLV)

residential rental properties. There will be a need to import foreign know-how or pivot current hotel asset and property managers into residential management. Another potential challenge will be on the ability to provide liquidity to work force housing developments, identified previously as the population segment with the largest potential demand for rental housing. Structuring tax incentives such as Low Income Housing Tax Credits (LIHTC) is an interesting opportunity, already present in the US Market. This structure would incentivize developers to build and eventually sell the tax credit to larger institutions contributing to the overall market dynamic.

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Rental Housing in Bogotá, Colombia: Challenges and opportunities for creating more multifamily properties

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INTRODUCTION

This article examines the rental housing market in Bogotá, Colombia and the challenges in developing multifamily rental properties. A description of the factors that affect the development of this asset class is followed by recommendations to overcome the existing problems. Even though more than half of the population live in rental housing, there is almost no supply of rental housing projects at a large scale in Bogotá. Four reasons explain why this type of property has not been developed: (1) lack of financing; (2) laws that protect the tenants, making eviction a long and complex process; (3) market rents do not cover the cost of development; and (4) lack of firms capable of designing and operating rental housing projects. On the other hand, for sale housing projects have easier access to financing, can justify the high value of land, and gain the advantage of the mortgage system with governmental subsidies for mid to low-income segments.

1. REGIONAL CONTEXT

The housing deficit in Latin America is a principal challenge for social and economic development. One-third of households in the region live in inadequate houses. More importantly, the need for affordable housing has been estimated to be around 10 million new units (IDB, 2012). This issue is exacerbated because individuals are living longer, an increasing number of young people are entering the workforce, and couples are separating. The current annual supply provides just a quarter of the units needed each year to accommodate the accumulated deficit and the formation of new households (Ruprah, 2009).

Colombia has a lower rate of home ownership compared to other countries in the region. The percentage of homeowners in 2014 was 36.6%. Only Bolivia has a lower rate. Ironically, Colombia was one of the first countries to implement public granting entities successfully to provide public mortgages. The Caja de Credito Agrario and the Banco Central Hipotecario were created in 1931 and 1932, respectively, facilitating the early growth home ownership. In contrast, in other countries public granting entities didn't become prominent until the 1960's and 1970's. At present, the Colombian government is still promoting homeownership through subsidies and free housing programs. Since the election of President Juan Manuel Santos in 2010, 100,000 free units have been completed and a program, called "Mi Casa Ya," has provided subsidies for low and middle-income families to acquire homes.

2. BOGOTÁ, A CITY OF RENTERS

According to The National Administrative Department of Statistics (DANE, 2017), Bogotá has a population of eight million with stable growth of 1.5% per year over the last 20 years. Regardless of the public policy that has encouraged home ownership since the 1930's, the rental housing rate in Bogotá remains high at 52.4% (approximately four million homes) with just 37.3% owning their own dwelling. (CAMACOL, 2014). The city has the highest percent of renters among the principal cities in the region (Figure 1). The rental housing small-scale is provided by individual owners, typically of the same social class as their tenants (IDB, 2014). The typical household head that rents in Bogotá is a young employee that pays an average of COP $350,000 (around USD $120) monthly rent. Nearly 80% of the households that rent in the city are employed, and half of the renters are between 25 and 40 years old. It is important to highlight that, even with the low number of students that rent, around 1%, several large-scale student housing projects were developed in 2017, and there are more in the pipeline. For example, a 1,800-bed project in the city center was completed in January 2017.

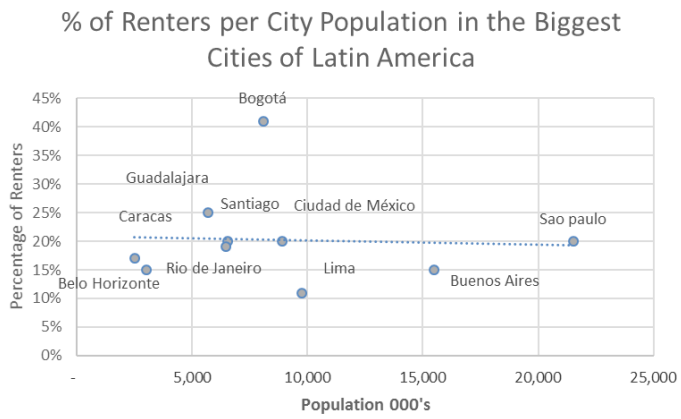

Figure 1. Renters in the Biggest Cities in Latin America. Source: IDB (2012).

3. FINANCING

In developed countries, there is a strong, functioning market for construction, redevelopment, and acquisition loans for rental. The loan terms vary from 20 to 40 years, and the interest rates are usually in the single digits (IDB, 2012). Unfortunately, this is not the case in Latin America. The markets that do have these

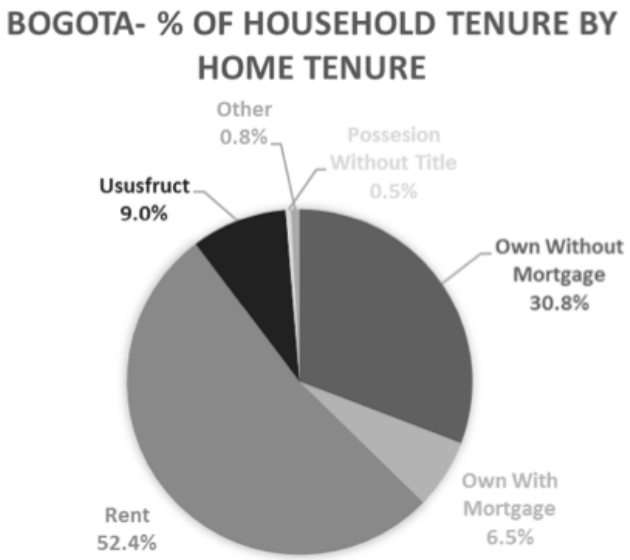

Figure 2. Household tenure. Source: CAMACOL (2014).

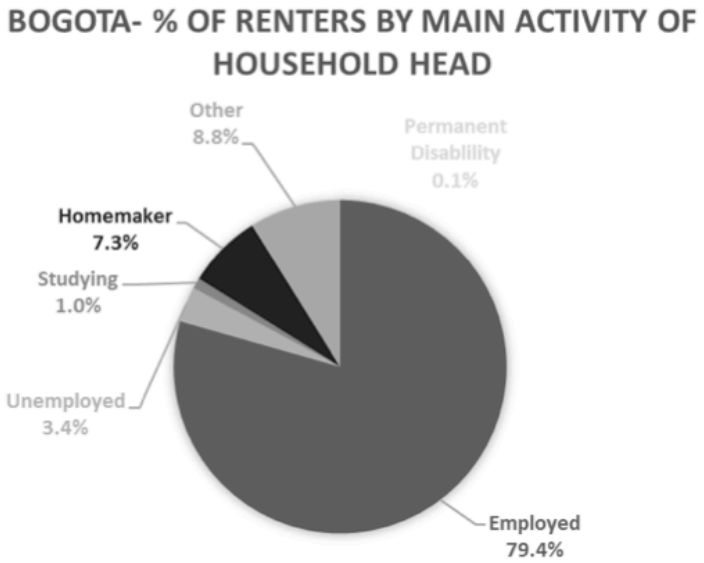

Figure 3. Main activity of households. Source: CAMACOL (2014).

types of loans, and those that are available, are characterized by the short amortization periods and high interest rates.

Banks in Colombia do not have a range of products to support financing the development of rental housing. One reason may be the lack of housing projects. Banks have funded office buildings, shopping centers, and student housing facilities. Another reason might be that banks do not understand the product. The one-year lease, the lack of pre-leasing and the difficulties in evaluating tenant-credit are characteristics that raise questions when seeking financing.

Pension funds are one of the principal investors in real estate in Colombia. However, public and private pension funds in Colombia invest less than 1% of their total assets into real estate. Recently, pension funds have been allowed to allocate 10% of their portfolio to alternatives assets. This will facilitate additional investments in real estate and private equity.

Regarding private equity funds, different international and local players have been operating in the country since 2005, but there are no cases where the funds have invested in rental housing developments. Most of these are opportunistic funds seeking a 25% pre-tax IRR and 2.0 equity multiple. Low and middle-income housing (for sale), office, industrial and mix-used projects are the principal investments.

In 2007, a REIT called "Patrimonio Estrategias Inmobiliarias" (PEI) was created. By June 2017, PEI had 127 properties, 8.5 million square feet of gross leasable area (GLA) and a 4.6% vacancy rate. PEI, however, does not have any residential properties. Recently, PEI purchased a 154,623 square foot student housing project—this may be the first effort to finance rental housing.

The Sociedad Hipotecaria Federal (SHF) was created in Mexico in 2014 to provide funds for rental housing. This program offers up to 20-year loan terms with a 4-year grace period and a loan-to-cost of up to 80%. As of May 2017, this project had financed 15 projects, representing 2,600 units. This program gave subsidies on the interest rate to projects that met efficiency requirements.

4. LEGAL FRAMEWORK

The legal framework has been one of the principal obstacles to the development of rental housing. Historically, the tenant´s rights have been favored over the landlord's rights. This environment creates risky and expensive operations for rental properties. The legislation has protected the eviction and repossession of rental units as well as rent increases.

To address these concerns, in 2003 the national government approved the Law 820 which is known as the "Renter's Law." This law deals with affordable rental housing development subsidies and changes in the repossession process of the property. The bill has various implications that can be grouped into three primary segments: the legal framework to build affordable rental housing and incentives to spur their construction, a new process to facilitate the repossession of the property, and the establishment of the rent prices and deposit conditions.

To mitigate some tenant risk, the law created a standard and accelerated property restitution process and made

terminating the rental contract easier. One of the essential changes was the ability to terminate the agreement and evict the tenants if they stop paying their obligations. Prior to this law, landlords had to pay for these obligations after the tenant left the unit. In terms of eviction, the judicial process is faster than before, but the eviction process has not been substantially improved.

Regarding the rent and deposit, the law favors the tenant. The law states that the lease cannot be higher than 1% of the commercial value of the unit, and the increase cannot be higher than the Consumer Price Index (CPI) increase from the previous year. The law prohibits the landlord from collecting a deposit.

To mitigate these risks, landlords in Bogotá work with specialized insurance companies to reduce the risk of tenant default. These companies evaluate potential tenants based on pay stubs, personal warranties, and credit history. They require at least two cosigners to share financial responsibility. In case of late payment or default, the insurance pays up to 36 months of rent. In the extreme case of eviction, the insurance company pays legal fees for the process. The case of Gresytar in Mexico is a successful case in terms of tenant risk. The company entered into the Mexican market in 2012 and since that moment faced only one eviction process on the 2,300 units operated by the company. For Thomas Livelli Jr, managing director of the Andean Region, the tenant evaluation is key to mitigating the risk.

5. LOW RENTS

The low rents in Bogotá are one of the obstacles for rental housing. The high prices of homes are a consequence of the lack of land and the city's population growth due to the employment options that are available. The home prices in Bogotá experienced a significant appreciation during the last ten years, as shown in Figure 4. The monthly gross rental yield in the city is between 0.52% and 0.77% (around 6.2% to 9.2% annually) (Perez, 2015). With these low yields, it is difficult to develop a large-scale product with even a minimal profit above the cost of the land, the construction and the operation expenses.

Public intervention can help boost rental housing. After World War II, public presssure affected the supply and the demand for rental housing. Initially, the policies targeted the supply by creating subsidies and tax exemption programs for the developers. In the 1990s, the programs impacted the demand side through subsidies for the renters. Today,

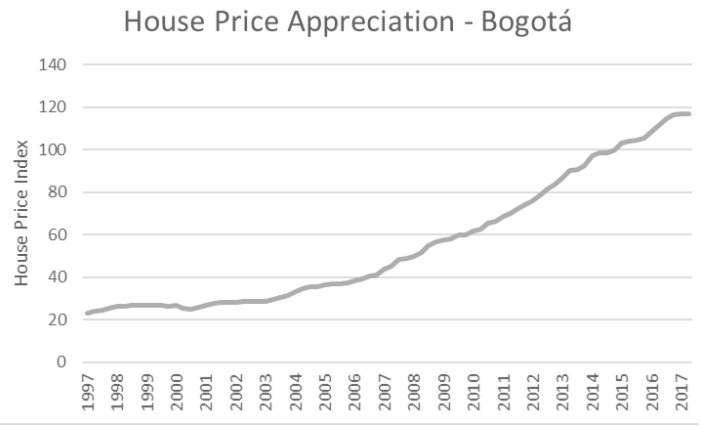

Figure 4. House Price Index. Source: DANE (2017).

there is a mix of both approaches. Chile is one country that has a subsidy program to help the medium and low-income population that cannot afford to pay rent. The program gives up to 170 Chilean Unidad de Fomento (UF), around $7,000 USD for a maximum period of eight years.

In Colombia, one intent of Law 820 of 2003 was to encourage the development of rental housing for the low-income population. To accomplish this, it authorized a tax exemption on rental income for ten years for companies that develop and operate rental housing. Few projects of this kind were developed, however, and the tax incentive was eliminated by the Tax Reform Law 1819 in 2016.

To compensate for the low yield in the market, an efficient operation of the properties is essential to reduce operational expenses. The design plays an essential role in the operation and returns of a multifamily development. A high-rise building, with a large number of units, helps to achieve an economy of scale, reducing the impact of the fixed costs on the building's operation. The design of the units and the HVAC systems are also essential to improve the operational efficiency of the project. International companies, with experience in the development and management of rental housing, can facilitate the process. That is the case of Round Hill Capital, which manages over 100,000 units in Europe, that is looking for opportunities to operate, invest and develop multifamily in the country.

The lack of land to develop in the city is being addressed by the local government, which is adding undeveloped land through different projects around the city. One of these initiatives is the "Plan Zonal del Norte" which is adding 2,014 hectares. Just this project will have space for 132,000 new homes. With the expansion of the land supply, it can be expected that developers will find development sites at a more accessible price, being an excellent opportunity to

Figure 5. Local government's vision for PZN. Source: El Tiempo (2017).

evaluate multifamily developments.

6. DESIGN AND OPERATION

The operation of a multifamily project is very intense due to short lease terms and high turnover. Lease terms are usually one year long while office and retail have five to ten years leases. In the US, the turnover is around 50%, meaning that half of the building will be leased every year (Perez, 2015). Therefore, the role of the property manager is critical to the success of the operation. Unfortunately, in Colombia, there are few firms with experience in multifamily design and operation. The student housing projects in Bogotá operate under various models such as working with local hotel operators, creating in-house management, and partnering with an international player. A student housing project by Grupo Valor and Paladin Realty Partners, 33 DC, utilizes this last model. They partnered with Asset Campus Housing, a student housing operator with over 118,500 beds under management in the US. Perhaps this partnership will provide experience that will translate into effective management for future rental housing projects.

7. RECOMMENDATION

Despite the public policy bias to promote homeownership in the country, Bogotá has created a robust demand for rental homes. The profile of the renters in the city creates opportunities for products that target the young population. Also, the large percentage of renters who are employed decreases the tenant risk. These conditions create opportunities to increase the rental housing supply by formal investors. Bogotá presents an attractive market for investment because of the high percentage of renters, but the government must address the issues discussed in this paper to facilitate financing and decrease tenant risk.

Regarding public policy, the government should provide not only options to buy but also to rent. Saunders states that the best strategy is to promote a tenure-neutral system in which people can choose whether to rent or buy without a confusing and contradictory system of control and subsidies affecting their decision (Saunders,1990). Sadly, the public policy in Colombia is not aligned with Saunders' idea. Governments should create an appropriate environment for development of rental housing, attracting large-scale private investors. The case of SHF in Mexico is an attractive model to consider, facilitating the financing for rental housing projects.

The legal framework could be improved by eliminating rent controls and improving the execution of the eviction process. Fortunately, mechanisms like insurance reduce the risk of accepting a tenant that will not pay and, in case of no payment, the insurance covers the rent for an extended period.

The new student housing projects are providing a model for effectively operating rental housing. Despite the different challenges associated with this type of investment, local and international players are starting to evaluate this alternative.

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Figure 6. 33DC Mixed-use project, Asset Campus Housing. Source: Comerciales (2017).

Seoul Office Market: Occupancy characteristics and their impact on market stability at a global level

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ABSTRACT

While other major cities in the global real estate market experienced a stiff downturn after the Global Financial Crisis in 2008, the Seoul office market remained very stable. Focusing on steady rent growth, this paper examines the characteristics of seventy-three office buildings in the city. The result shows three distinct features: (1) the office market, especially the manufacturing sector, is more diversified than that in other global cities, (2) the office space is chiefly occupied by local companies with a small number of foreign financial firms concentrated in the city center, and (3) Chaebols, the large family-based industrial conglomerates, constitute the most notable portion of major office buildings.

1. INTRODUCTION: THE SYSTEMATIC RISK OF REAL ESTATE INVESTMENT IN GLOBAL CITIES

The 'Global City' theory, first suggested by John Friedmann in 1986, has since been widely developed in academia as well as in the business world. The core concept of the global city, established by Saskia Sassen in 2001, is that, as a result of globalization, high-level financial and producer services are concentrated in certain large cities to benefit agglomeration economies. Consequently, the head offices of many multinational corporations and qualified producer services locate in New York, London, Tokyo, and a few other global cities. There have been attempts made by research agencies to rank these cities in terms of their level of global influence. Although there is a considerable amount of debate in how to measure the influence of a city, several cities are always near the top of the list.

Global cities also attract much of the international real estate capital because of their economic volume and influence in the world economy. According to Jones Lang Lasalle (2014, 2015, and 2016), many of the top-ranked global cities are also the largest recipients of cross-border real estate investments and, consequently, are the most active cities in the global real estate market. New York, London, Tokyo, and Paris draw most of the cross-border real estate investment capital, though Asian cities such as Shanghai, Hong Kong, and Seoul are beginning to gain some traction.

Office markets in global cities are primarily occupied by multinational finance firms and producer service providers. An example of this are the skyscrapers on Wall Street, dominated by the headquarters of various multinational corporations, global banks, and other financial service firms. While these high-rise office buildings are dominated by global financial companies that pay higher rent, there is a systemic risk in these markets. Lizeri (1998, 2009) demonstrated the relationship between development and investment in office markets in international financial centers and the pattern of risk and return in the movement of the financial markets themselves. As part of the world economy, the success and viability of these firms is highly impacted by the condition of the world market, thereby affecting the office markets as well. The plunge of the world's preeminent office markets during the global financial crisis supports this, as real estate investors in major cities such as New York and London experienced critical losses in returns as well as a decline in property values.

Not all global city office markets, however, reflected this external shock in the same way. While Tokyo, Hong Kong, and Singapore experienced sharp downturns in average rents for their prime office space, the rents in Sydney, Shanghai, and Seoul did not change dramatically. In those office markets, the average rent values represent the actual demand for space. According to DiPasquale and Wheaton (1996), rents are determined in the short-term as compared to property value and the cap rate. So, can we assume that there were dramatic decreases in the demand for office space in Hong Kong and Singapore, while in Shanghai and Seoul firms maintained a steady need for working space?

If we compare the rent values of Seoul with other cities such as Hong Kong, the stability of the real estate market in the Korean city is noticeable. If we focus on the rate of annual change of real rent value, the contrast is even more dramatic. While Hong Kong's prime office real rent dropped 40% in the second quarter of 2009 compared with the previous year, Seoul office rent values increased in 2009.

What makes the Seoul office market so stable? In the short term, as mentioned, the rental value of office property is directly influenced by its users. So, investigating office tenants can be key to understanding this issue. This paper focuses on the occupancy characteristics of the office market and an explanation of the rent levels of its submarkets. Using data from offices that are grade A or above in Seoul, this article addresses the factors that might affect the future stability of this office market.

2. SEOUL OFFICE MARKET AND OCCUPANCY CHARACTERISTICS

Today there are about eighty prime office buildings in Seoul. The data used in this paper involves information from seventy-three offices in 2014. There are three major business districts in Seoul. The Central Business District (CBD) is the largest. The central government offices and major financial institutions are located in this area, as well as most of the domestic and global company headquarters and foreign embassies. In 2014, there were thirty offices of grade A or above in this district.

The Gangnam Business District (GBD) was developed in the late 1980's. Many manufacturing and IT companies chose to locate in this district. Near the Gyungbu Highway, the main freeway in Korea provides excellent accessibility to the main transportation avenues to other cities. The area can also be characterized as a luxury retail district. Combined with a relatively cheap rent level, this area has been the preferred office market for young entrepreneurs.

The Yeouido Business District (YBD), where the Korean exchange market is located, specializes in accommodating the financial industry, even as government financial institutions remain located in the CBD. After the establishment of the Korean Exchange on this island, the finance and insurance companies began to locate here.

The three districts all have distinct occupancy characteristics, with the CBD being the most diversified. Though financial and insurance activities have the highest proportion of occupancy (27%), other industries including manufacturing, construction, accommodation, and food service activities, information and communications, and professional, scientific and technical activities comprise a significant amount of office space usage.

The presence of several headquarters of huge construction companies accounts for the high occupancy of the construction industry (12%). The GBD also has a diverse tenant profile. Due to the proximity of the major transportation avenues and the relatively cheap rent, manufacturing, wholesale and retail, trade companies use more than 40% of the prime office space in the area. Information and communications and professional, scientific and technical activities also comprise a large portion of office usage in GBD. Meanwhile, the YBD has the most homogenous tenant base due to the area's specialized development focus. Almost 45% of the prime office space in the area is occupied by finance and insurance companies.

The Seoul office market differs from other global cities in terms of its tenant profile. While demand for office space in other international financial centers such as Hong Kong and Singapore comes from the financial, insurance, real estate, and professional producer services sectors, the

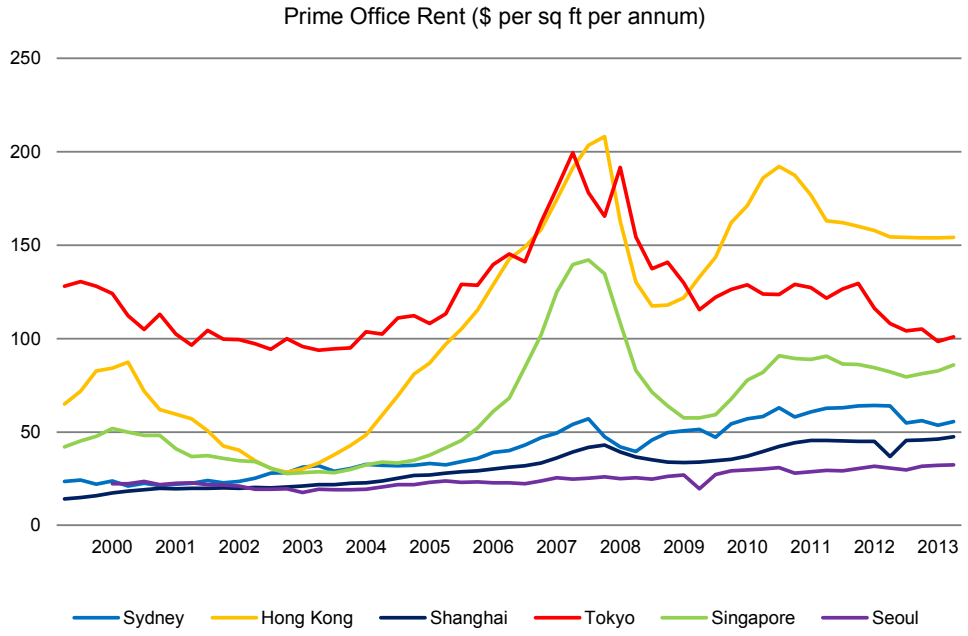

Figure 1. Prime office rent in Asian cities. Source: CBRE (2008~2013).

demand for office space in Seoul comes from a more diverse cross-section of industries. In London, for example, the finance, insurance and real estate (FIRE) sectors and business and professional services occupied 84.7% of the office space in 2006, (Lizieri and Kutsch, 2006). Meanwhile these industries occupy only 37% of the Seoul prime office market. The tenant dataset for Seoul comprises only offices that are grade A or above, so this difference might increase if we look at all offices in the central city.

3. LOCALIZED MARKET

One of the features of the Seoul prime office market is that most of the occupants are Korean companies, so when analyzing and forecasting the behavior of this office market, it is important to investigate the growth of these major companies and the economy of the country.

An analysis of office tenants by nationality shows that almost 70% of office space is occupied by Korean companies. Of the 67 million square feet of office space, Korean companies use about 47.4 million. By district, the CBD is the most commonly used by foreign companies, which occupy 33%, 29%, and 25% of office space in the CBD, GBD, and YBD, respectively. Of the 20.3 million square-feet of office space used by foreign companies, over half (10.3 million square feet) are in the CBD.

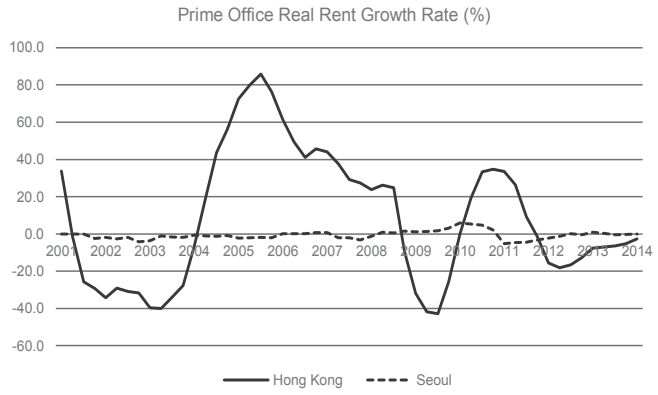

Figure 2. Prime office real rent growth rate, Hong Kong vs. Seoul. Source: CBRE (2008~2013).

One advantage of tenant analysis is that we can investigate the geographical distribution of specific tenant types. Given the low proportion of foreign companies in the Seoul prime office market, the actual location of foreign companies, especially within the FIRE industries, can provide important insights into the understanding of the Seoul office market as an international financial center.

Figure 6 illustrates the specific areas occupied by foreign FIRE companies within the seventy-three prime office buildings in Seoul in 2014. It shows those office properties that possess relatively high occupancy by foreign FIRE companies are located chiefly in the CBD. It also indicates that while foreign FIRE companies are mostly in the CBD,

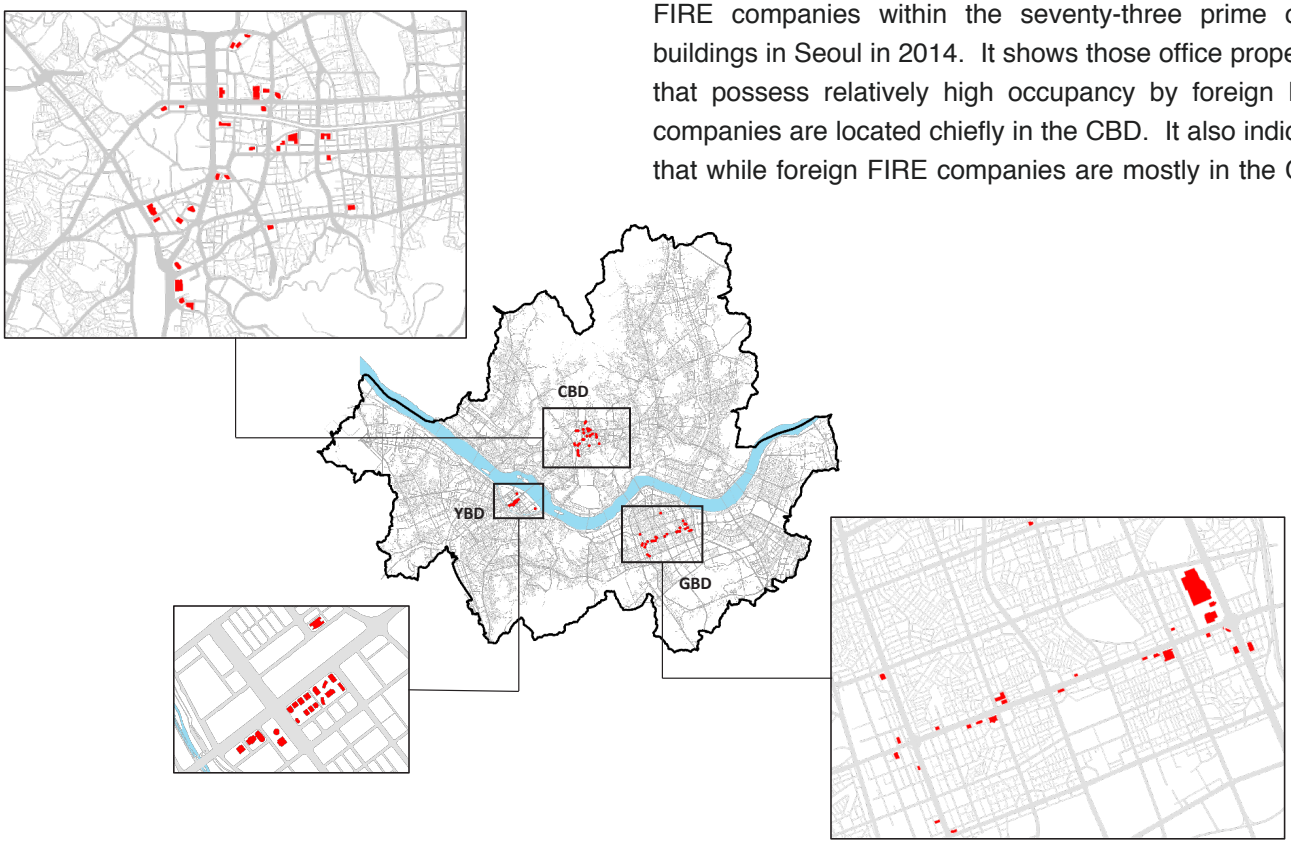

Figure 3. Location of the 73 Grade A of better office buildings in Seoul. Source: CBRE (2008~2013).

there are only three office buildings within which foreign FIRE companies occupy more than 30%.

Of the six buildings that are more than 20% occupied by foreign FIRE companies, five are located in the CBD and one in the GBD. The red building shapes in the enlarged figure represent those five buildings. While about 45% of prime office space in the YBD is occupied by finance and insurance companies, there are only two buildings that are occupied by foreign FIRE companies in that area. This means that most of the finance and insurance companies in the YBD are local companies. Indeed, most of the prime office buildings in the YBD are the headquarters of Korean finance or insurance companies. Two buildings in the YBD are each occupied by only one tenant—both are local investment and securities companies.

According to Berkoz (2000), the two most important factors influencing the location of finance, insurance, and real estate companies are the physical condition of the buildings and their surroundings, and the desire for a centralized location. The geographical concentration of foreign FIRE companies in Seoul can be explained by the accessibility to Korean company headquarters, central and city government offices, and foreign embassies. Also, the quality of the buildings seems to be a factor. While there were nine "prime" grade buildings in Seoul in 2014, two of five buildings that were highly occupied by foreign FIRE companies were prime grade buildings.

The distribution of foreign FIRE companies demonstrates that the Seoul office market is not highly connected to the global market regarding occupancy. A small number of international firms reside in a few qualified office buildings in the limited geographical area. The leasing development of International Financial Center (IFC) Seoul at YBD addresses this matter well. Originally, the development project of three iconic skyscrapers was aimed at multinational financial companies. After the completion in 2011 and 2012, however, the developer had difficulty finding target tenants. While the complex is currently stabilized in terms of the occupancy, most of the tenants are local manufacturing and IT companies.

4. THE INFLUENCE OF THE CHAEBOL ON KOREA'S ECONOMY AND REAL ESTATE MARKET

Another important factor that influences the Seoul office market is the existence of the "chaebol" in Korea. These groups are defined as large business enterprises that are composed of many corporations (Chang, 1988). They comprise a significant portion of the Korean economy and have businesses in almost all sectors. They benefit from the exchange of knowledge and information between group-affiliated firms. They often use internal trade for the

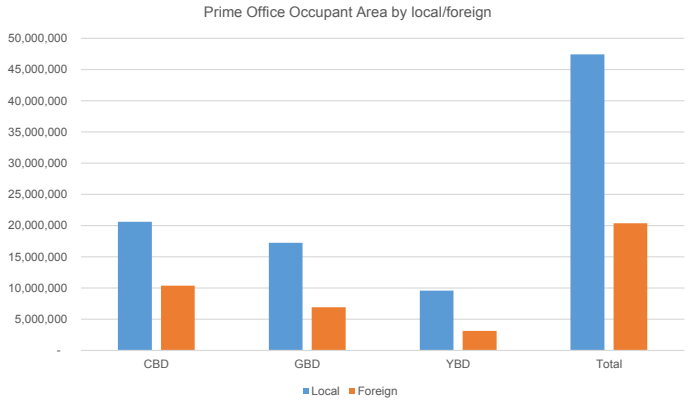

Figure 5. Occupying area local vs foreign. Source: CBRE (2008~2013).

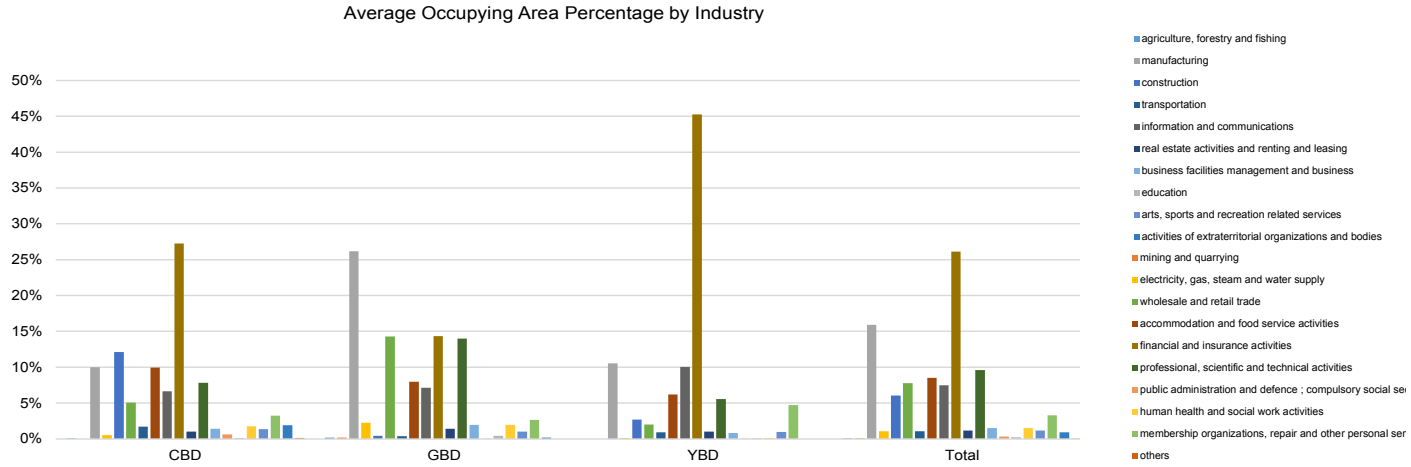

Figure 4. Seoul prime office occupying area by industry. Source: CBRE (2008~2013).

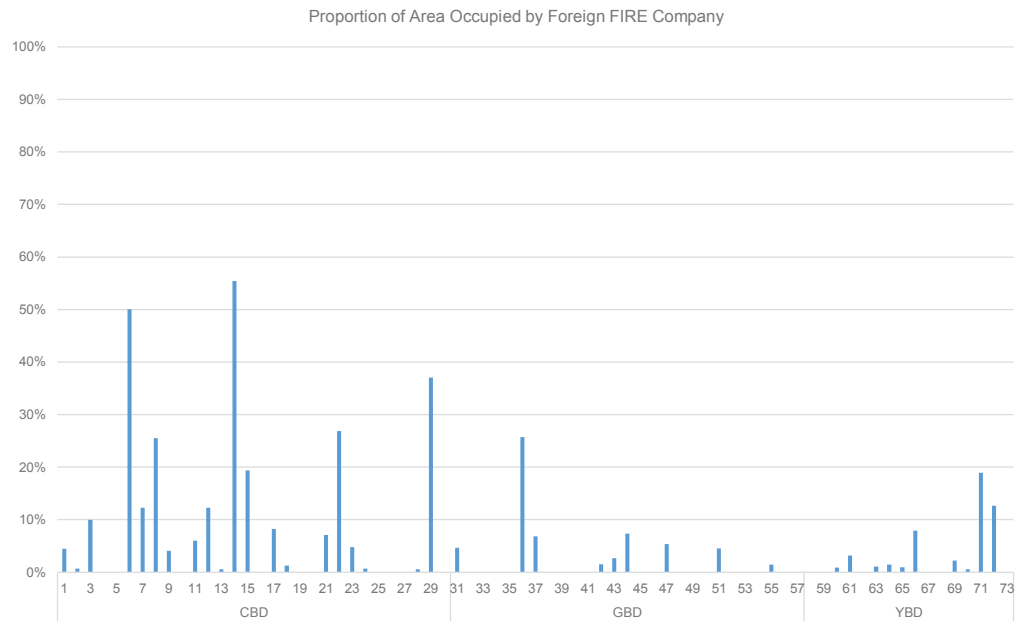

Figure 6. Proportion of Area Used by Foreign FIRE Company. Source: CBRE (2008~2013).

reinforcement of their economic power in Korea and the global economy (Chang and Hong, 2000).

Considering the importance of the chaebol in the Korean economy, their influence on the real estate market might be critical. In fact, a large portion of the office space examined in this paper is used by these groups and their affiliates. The chaebol and their affiliates occupy 13,638,122 square feet of office space, about 35% of all of the occupied space. Non-chaebol private companies and public companies use 61% and 4%, respectively.

When investigating the distribution of the chaebol at the property level, their power in their real estate market seems more noticeable. Twenty-six office buildings dominated by these tenants comprise more than 40% of the total space. Nine are in the CBD, eleven in the GBD, and six in the YBD. This corresponds to 30%, 40%, and 37.5% of office buildings in each respective district.

The ownership structure of the prime office buildings by the chaebol is quite complicated. In some cases, an affiliate owns an office building and uses most of the space. In other cases, the affiliate just owns an office building and leases the

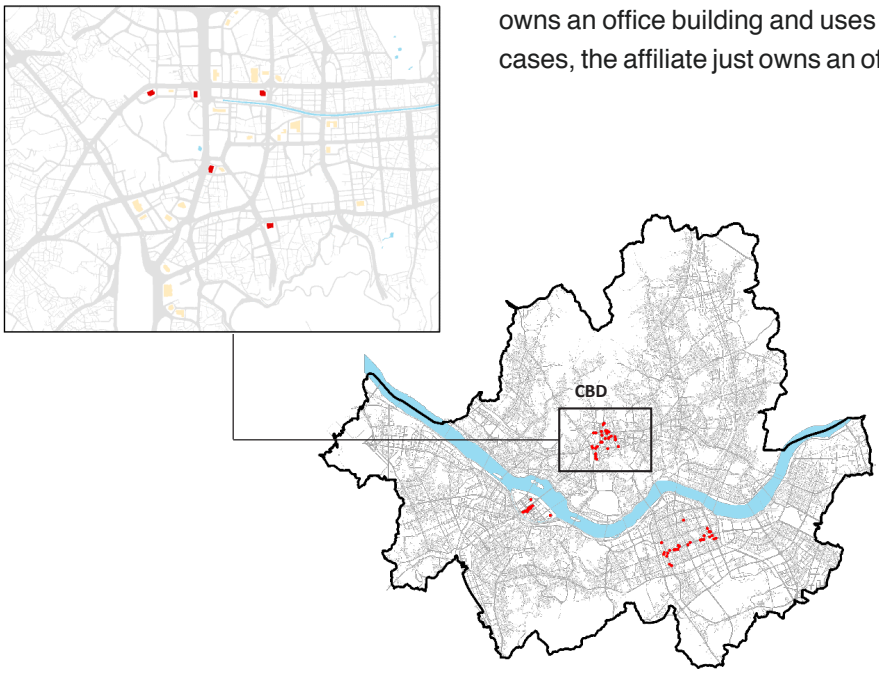

Figure 7. Five Buildings Occupied by Foreign FIRE Companies more than 20% in CBD. Source: CBRE (2008~2013).

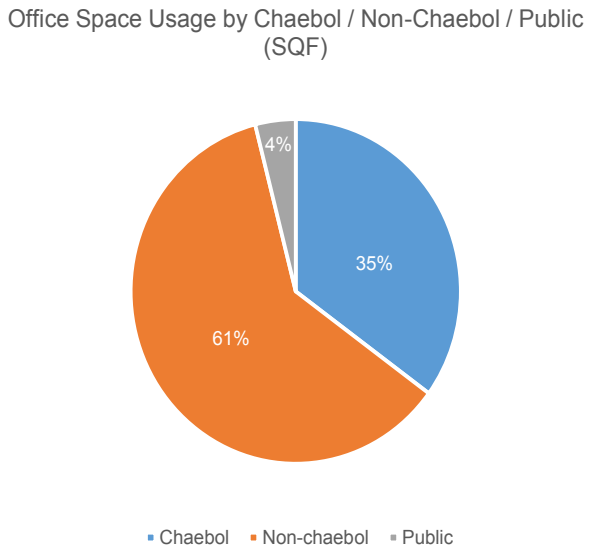

Figure 8. Overall Occupied Space by the Type of Firms (Chaebol, Non-Chaebol, Public). Source: CBRE (2008~2013).

space to other chaebol or non-chaebol companies. In the former case, the rent they are paying might be meaningless because there are affecting internal transactions within the groups.

The high occupancy rate of the manufacturing sector in the Seoul office market can be explained by the existence of the chaebol. Historically, these groups improved their economic power because of their dominance of the manufacturing, trade, and IT sectors. While other developed countries have been experiencing de-industrialization, manufacturing in Korea is still increasing. Based on their economic importance, the chaebols can afford the cost of occupying prime offices in core locations. There are seven buildings dominated by chaebols in the GBD, in manufacturing and trade. The economic power of the chaebol also explains the high occupancy of the construction sector in the CBD (12%). There are four buildings that are mostly occupied by chaebol construction companies. Based on their size and financial influence, these companies occupy core offices in the CBD.

According to Ministry of Knowledge Economy (2009), countries widely backed by the manufacturing sector like Taiwan and Korea showed higher resilience than service-oriented countries. After the financial crisis, Korea's manufacturing sector reported a $27.7 billion US trade surplus due to the price competitiveness caused by the depreciation of the Korean Won currency. The United Kingdom, largely relying on the tertiary industry, had a 33% decrease in exports and a 60.3 billion dollar deficit in the trade balance (Ministry of Knowledge Economy, 2009). Thanks to the considerable proportion of the manufacturing sector in their business, Korean chaebols avoided a critical recession even in 2008. The overall employment rate in Korea recovered fast to 60.2% in 2014 after experiencing the decrease to 58.7% in 2009. The office absorption area also turned positive in 2010 and maintained a stiff increase until 2011(Savills, 2015). While chaebol-dominated economic structures has several problems, such as the concentration of economic power, the structure played a crucial role in preventing the sharp downturn during the global recession.

5. CONCLUSION: OCCUPANCY CHARACTERISTICS THAT AFFECT THE STABILITY OF THE MARKET

The micro-level tenant analysis of the Seoul office market has several implications for explaining the stability of the market at a global level. First, it is shown that, unlike other international financial centers such as London, tenants in the Seoul office market are more diversified in terms of industry sectors, especially workers in manufacturing and construction sectors. Second, tracking the nationality of firms reveals that spaces are mostly occupied by domestic companies. This feature is one of the most important factors that differentiate the Seoul market from other global cities in Asia, especially Hong Kong and Singapore. The analysis of the number and location of foreign FIRE companies justifies this difference. Finally, the large portion of the office space used by chaebols' employees demonstrates the office market's resilience during the recession. Supported by the manufacturing sector, Korean chaebols managed to maintain their financial capability during the recession. Combining these features, the Seoul office market has performed in a stabilized manner. Given that global real estate investment in Seoul is sharply increasing, a detailed analysis of major real estate markets could provide further implications for the real estate practitioners.

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Steering Enterprise: How the real estate community and government can work together to modernize the country's maritime infrastructure

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Chris is pursuing a Masters in Real Estate from the Baker Program. Chris has a BA from Louisiana State University and a MPP from the University of Massachusetts. Appointed by a US Senator and two State Treasurers, Chris has held positions inside the US Senate, on the board of the Louisiana Housing Corporation, and served with the Louisiana State Bond Commission. Chris was also elected to the United States Electoral College. Chris will pursue a career in development and public advocacy.

INTRODUCTION

Industrial real estate in the U.S. is experiencing the one of the longest and strongest expansions on record. The expansion is being fueled by e-commerce companies such as Amazon, and the trend is likely to increase as retailers and logistics services focus on improving last mile delivery. Despite analysts' optimistic forecasts for industrial real estate, however, U.S. state and federal policy makers have not adequately invested in the country's maritime and intermodal infrastructure in preparation for either the increased traffic e-commerce has facilitated, or the expansion of the Panama Canal (Economist, 2013). Congress can aid the expansion by presenting a bill to the President that focuses on modernization and maintenance of maritime and intermodal infrastructure. The bill should modernize the country's existing port facilities, invest in intermodal transportation, provide education for rural river ports to guide local harbor administrators to adopt economic development methods through promotion and advertisement of regional economic integration and competitiveness, and expand the number of ports that are capable to host "mega-ships." This paper will outline why an initiative to modernize and maintain maritime and intermodal infrastructure is not only important to U.S. commerce and national security, but also essential to accommodating the needs of industrial real estate in the next decades.

1. LITERATURE REVIEW

Maritime and intermodal infrastructure handle physical distribution of imports and exports, from storage and warehousing, materials handling, unitization and packaging, and transportation from plants to distribution centers to end consumers (Bensonand, Whitehead, 1985). The relationship between supply chain to the needs of port users are extremely important (Ganesan, George, Jap, Palmatier, Weitz, 2009).

Industrial real estate benefits from the demand for warehousing and distribution space that imports and exports through maritime and intermodal infrastructure generates (McGowan, 2005). Industrial space has three primary divisions: manufacturing, R&D, and warehouse space (Mueller, Mueller, 2007). Locations for industrial space are defined as a 'spatial resource allocation problems,' whereby facilities serve a spatially distributed set of demands/ customers (Brandeau, Chiu 1989).

Maritime and intermodal infrastructure are crucial to U.S. logistics, and logistics represents 10 percent to 15 percent of OECD economies (Rushton, Oxley, Croucher, 2000). New trends in global trade are shifting logistics channels, and ecommerce is increasing competition and eroding margins, thereby putting pressure on vendors to improve inventory turnover and levels of customer service (Ellram, 1999). In anticipation of demand, retailers used to be passive recipients of products sent from manufacturers, but technology has allowed retailers to control, organize, and manage supply chain to efficiently react to and chase demand (Sribbins, 1994). As technology becomes more sophisticated, retailers and other companies constantly attempt to improve efficiency in last-mile delivery, technically defined as spoke terminal operations. This is done by enhancing their ability to collect and deliver freight over short distances using smaller capacity vehicles (Zapfel, Wasner, 2002).

Last-mile delivery consists of collection and delivery points that cover a specified geographic area connected through a distribution hub (Gue, Bartholdi, 2000). As companies shift toward last-mile delivery, the current industrial real estate expansion continues to widen, despite space and logistics constraints spoke terminal experiences (Greasley, Assi, 2012). In search for faster, cheaper, and flexible on-demand delivery service, logistic constraints are exacerbated when U.S. ecommerce companies emulate the increasingly popular same-day delivery operations of competitor Chinese ecommerce and logistics services such as companies like Alibaba and ZTO (Zhou, Lin, 2018).

Ports and surrounding industrial space play a crucial role in modern supply chains, whereby disruptions in equipment risk delays and have economic consequences for port and industrial space operators, as well as port and industrial space users (Mennis, Platis, Lagoudis, Nikitakos, 2008). Maritime and intermodal infrastructure require modern upgrades adhering to the highest standards of quality, aesthetics and functionality in order to attract businesses and investors (GOTT, 2008). Existing port designs that are not able to adapt to modern needs will suffer economically, and efficiency will decline (Pun, Nurse, 2010). During the last two decades, private finance and services have invested in maritime and intermodal infrastructure whereas the U.S. public sector has scaled back investment prohibiting maritime and intermodal infrastructure to accommodate country's freight transportation and distribution needs

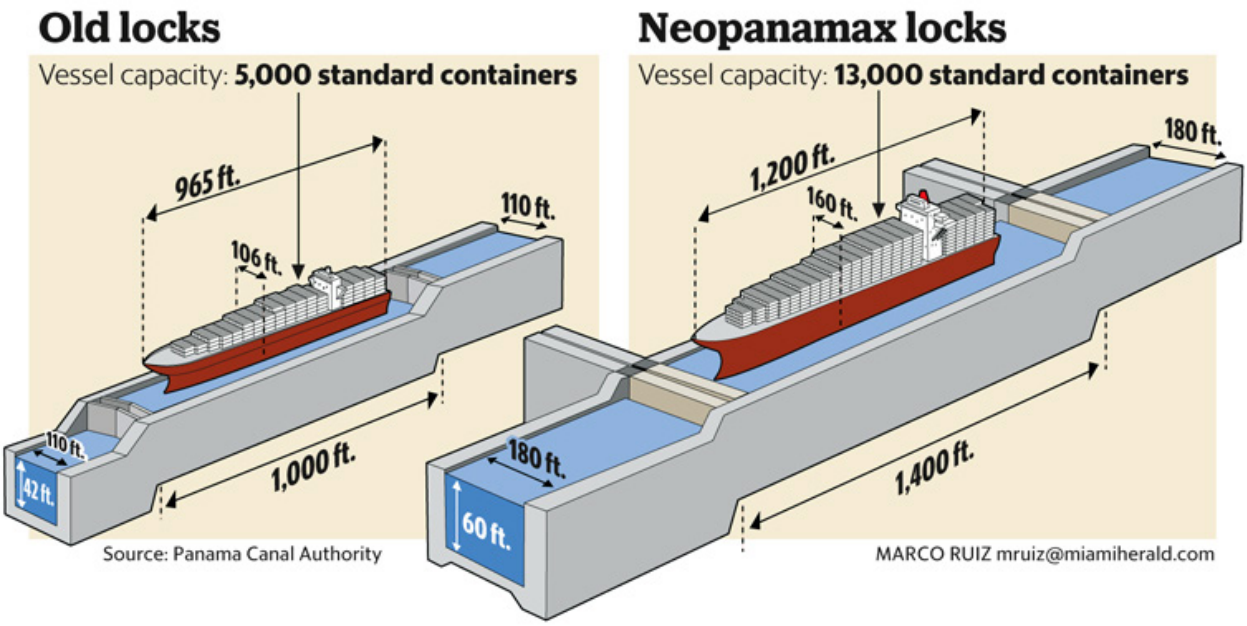

Figure 1. Old Locks Compared To Neopanamax Locks. Source: Miami Herald (2016).

(Vanelslander, Chomat, Roumboutsos, Bonnet, 2014). Meanwhile, the maritime and intermodal infrastructure around the globe is being developed through innovative financial vehicles that increase global competition for trade (Annamalai, Hari, 2016). This affects global competition which in turn shifts trade patterns (Lam, Yap, 2011).

Port areas within the U.S. that have made maritime and intermodal investment a priority, such as the Ports of Los Angeles and Long Beach, which have invested in accommodating Neopanamax ships and economic development initiatives, have seen industrial real estate development remain strong despite challenges posed by external market forces (Ryan, 2009). Further destinations are being reached as the Path of Goods Movement is being shifted through global competition and larger ships, thus making rural river port areas potentially attractive places for public and private investment (Mueller, Mueller, 2007). Keeping in mind the immense impact maritime and intermodal investment has on surrounding industrial real estate, it is in the national interest to prioritize maritime and intermodal infrastructure investment in throughout the country because of the importance of trade to the economy (McGowan, 2005).

2. INDUSTRIAL REAL ESTATE EXPANSION

Industrial real estate is experiencing a 30-year low in vacancy rates while net absorption is set to exceed 600 million square feet over the next three years (Cushman & Wakefield). Additionally, the sector's net absorption surpassed 1.3 billion square feet accumulated since 2010. Logistics and distribution services, principal drivers of the expansion, are pushing up rents, currently 4.2 percent year on year, as demand for more space increases. The boom in industrial has mostly been focused on the U.S. coasts in port areas that offer deeper channels, wider turning basins, and large container terminals (JLL).

Completed a little more than a year ago, the Panama Canal Expansion Program created an opportunity for Asian shipping companies to send "mega-ships," commonly known as Neopanamax ships, through the Panama Canal to reach the seaports of the U.S. East and Gulf Coasts. Maersk Sealand, Hanjin, Evergreen, and APL continually pioneer the construction of larger containerships to create better economies of scale that result in lower costs for customers and higher profits for themselves (McGowan, 2005). The previous generation of Panamax cargo ships have capacity to hold 52,500 tons whereas the new Neopanamax cargo ships carry 120,000 tons. It is not difficult to see that an American port capable of docking Neopanamax class ships could significantly increase the demand for warehousing and logistics facilities in a port's geographic region. Much of the U.S. maritime infrastructure however, i.e. ocean and inland ports and waterways, have been needing investment and upgrades for decades. This neglect is a deterrent for private investment and expansion. Meanwhile, states' port facilities not capable of hosting Neopanamax ships remain in need of funding for upgrades to stay competitive.

To be sure, a few regions have made maritime investment a priority. Today, the ports of Seattle-Tacoma, Oakland, Los

Angeles, Long Beach, New York/New Jersey, Baltimore, Norfolk Virginia, Charleston, Savannah, Jacksonville, Miami, and Houston host Neopanamax ships. These regions capable of hosting these giant ships continue experience increasing industrial real estate occupancy levels and command the highest rents for warehouse and distribution spaces. These twelve regions command rents as high as $10 per square foot annually. JLL estimates that in port, airport, and global infrastructure markets, close to 25.4 million square feet of industrial real estate is under construction, more than sixty-five percent of which is attributable to these ports (JLL, 2017).

3. CONGESTION

Because twelve ports are capable of handling Neopanamax ships, their increased amount of cargo handling has caused severe cargo handling and storage strains as well as infrastructure congestion. This certainly impacts the potential of industrial real estate in port areas. While twelve port regions of the U.S. can economically benefit their industrial real estate sectors through hosting Neopanamax ships, most port regions cannot and are years behind. To remedy this, ports need deeper shipping channels and wider turning basins, services provided by the U.S. Army Corps of Engineers, as well as new cranes and container terminals. Each ship must stop at several ports to make its journey economically viable. Enhancing ports to accommodate these vessel requirements will exponentially affect the number of Neopanamax ships docking along the coast.

The American Association of Port Authorities (AAPA) has alerted Congress to the crucial need to modernize and maintain federal navigation channels through waterside investments. Despite the forty-five percent projected growth of freight in the U.S. by 2045, the AAPA maintains that keeping a safe and efficient movement of freight in U.S. waterways is not only a national security issue, but also an economic imperative. Failure to invest in modernization

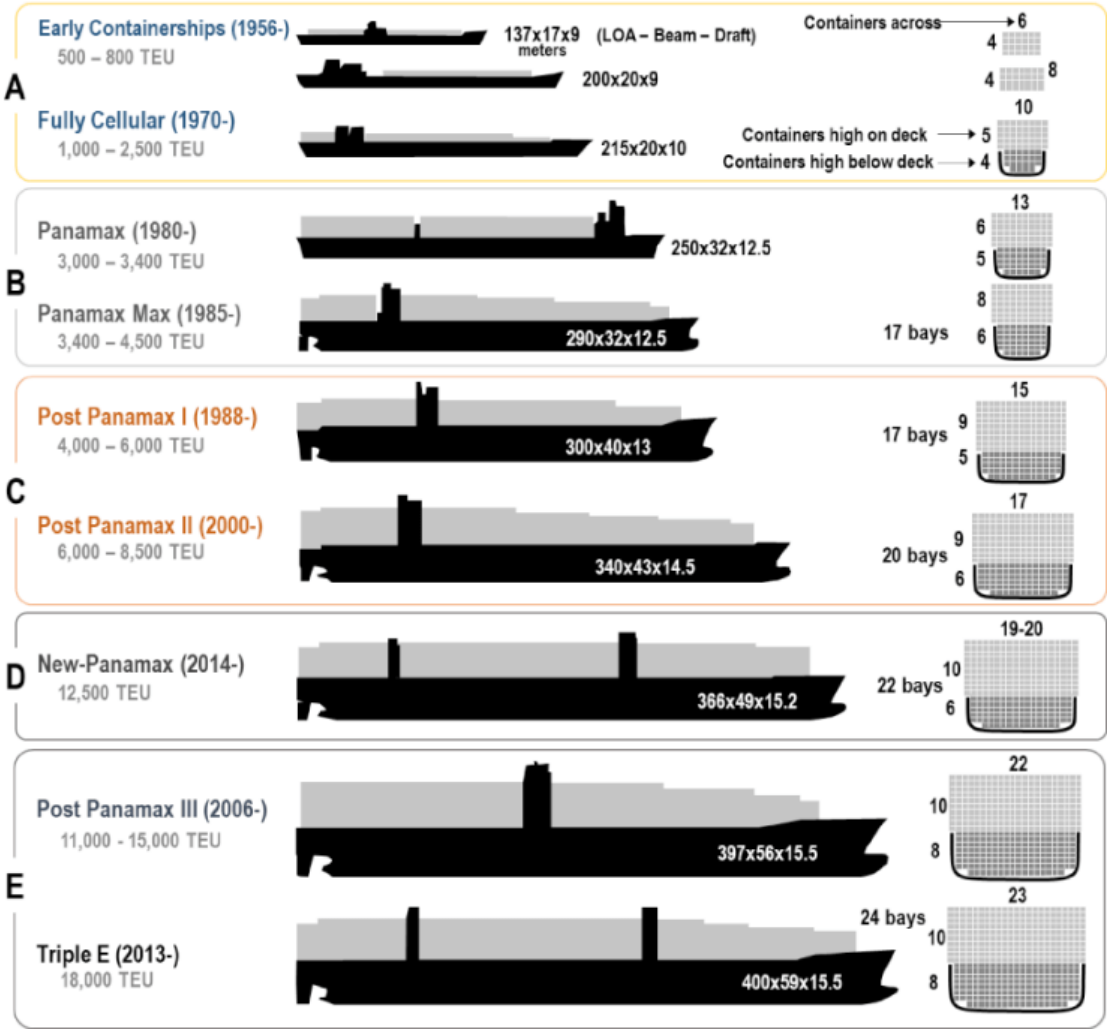

Figure 2. Evolution of Caontainerships. Source: The Geography of Transport Systems (2012).

and maintenance will result in a loss of $4 trillion GDP by 2025 and will cause a $9.3 billion U.S. trade loss projected from the use of undersized vessels in shallow harbors and narrow channels by 2020 (American Association of Port Authorities). Congress has an opportunity to address the issue this year if it can be persuaded to include maritime and intermodal infrastructure investment in the administration's infrastructure agenda. Direction would have to come from the U.S. House of Representatives Committee on House Transportation and Infrastructure and the U.S. Senate Commerce Committee, with the cooperation of the administration's Secretary of Transportation. These directives would then have to be funded by the House and Senate Transportation, Housing, and Urban Development Appropriations Committees. Individual states also have a role to play alongside Congressional leaders to improve maritime and intermodal infrastructure.

4. FEDERAL INFRASTRUCTURE PROGRAMS

Aside from asking their Congressional delegations to make maritime and intermodal infrastructure a priority, states and local governments can make maritime and intermodal infrastructure funding a priority by taking full advantage of the many federally approved financing tools available, such as specially designed loans and infrastructure bonds, federally administered infrastructure programs for states, enhanced lines of credit, waivers, and state infrastructure banks (Annamalai, Hari, 2016). State governors should also make a concerted effort to lobby Congress to remove bureaucratic impediments that make funding difficult to obtain. For instance, the Congestion Mitigation and Air Quality Improvement Program (CMAQ) was intended to fund transportation projects that reduce transportation-related emissions. The program is ideal for improving intermodal facilities that move containers onto rail. Unfortunately, such a program is limited to economically distressed areas and many freight transportation projects are not eligible. Impediments such as this severely restrict CMAQ and similar programs from functioning as they should (U.S. Department of Transportation).

Additionally, Federal programs that were created to target major transportation needs, such as the National Highway System (NHS) or the Surface Transportation System (STP), were also created to facilitate the transportation of freight. Because federal aid is allocated through a formula, states or local governments must match federal aid. If a project is multijurisdictional, or beyond a state boundary, then state or local government funding matches become difficult to invest, rendering many multistate freight investments ineligible and federal programs inflexible. Many states are knowledgeable enough to use these tools, despite not having made maritime and intermodal infrastructure a priority. While many states are aware of these programs, many local governments lack the sophistication required to use them. The need for these financial instruments will continue to increase as more inland and rural river ports are needed to satisfy the increasing demands of last-mile delivery. An inability to use these tools makes effectiveness and competitiveness difficult to attain.

Furthermore, while tasked with directing the success of ports, not all individual members of governing port authorities have either the understanding of economic development practices or the knowledge regarding port enterprise. This can often impede a region's optimal development of warehousing, logistics and supply chain services, and ancillary services that enlarge a port region's attractiveness (Bensonand, Whitehead, 1985). Any member chosen to serve in the direction of port activity, whether administrator or business person, must be educated on port operations, marketing, and economic development strategy, as well as existing federally approved financing tools (Miller, 2017).

5. A CASE FOR INVESTMENT

To understand the significance of rural river ports in the U.S. transportation network, one must understand their role and scope. The U.S. inland waterway system is divided into five main systems including the Mississippi River system, the Ohio River Basin system, the Gulf Intercoastal Waterway system, the Great Lakes waterway system, and the Pacific Coast system. Together, these contain 12,000 miles of shipping lanes with 300 commercial marine ports and 240 locks. According the U.S. Chamber of Commerce, fifty-six percent of crude petroleum, refined into gasoline and sold at neighborhood gas stations, travels inside these inland waterway systems (U.S. Chamber). The U.S. inland waterway system also moves twenty-two percent of chemicals used in consumer products, nineteen percent of nonmetallic minerals used in construction materials and energy production, and sixty percent of U.S. grain, and nineteen percent of all U.S. agricultural products. The system moves 12-15% of ton-miles of U.S. freight (Grossardt, Burton, 2014).

Consider the impact an improvement in maritime and intermodal infrastructure could have on real estate along these systems if authorities made concerted efforts to

Figure 3. Alexandria Container Ship. Source: Marine Traffic (2018).

modernize and maintain these systems. Many of the ports in these systems are underfunded and provide great opportunities for economic development, manufacturing, wet and dry bulk transportation, retail, agriculture, and last mile delivery because of their geography in the heart of the country and their proximity to cities and transportation networks (McGowan, 2005). For instance, in the Mississippi River System, the Port of New Orleans has access to six Class 1 railroads and a great opportunity for maritime investment in the U.S. since it is located on the mouth of the Mississippi. There are many other rural river ports in the Mississippi River system, as well as other systems, that could greatly benefit from investment. If prioritized, they could greatly increase the competitive capabilities of companies that rely on importing, exporting, and using local products in value-added processing activities (National Research Council, 1994).

Port infrastructure not only requires investment in its channels, cranes and facilities, but also requires investment in surrounding transportation infrastructure so goods can be delivered to warehouses via the barges, trucks and trains to disperse cargo. Port and transportation infrastructure is vital to growth for industrial real estate in port regions. In 2016, Chiquita Banana relocated from the Port of New Orleans citing port congestion and a lack of facility investment from the State of Louisiana (LaRose, Rainey, 2016).

The Port of New Orleans is years behind the capability to host a Neopanamax ship. Congestion at the port also makes it difficult for smaller barges to do business. Shipping via barge up through the Mississippi River System makes sense. According to a study by the Iowa Department of Transportation, one river barge can move 1500 tons of cargo from a Neopanamax ship and travel 514 miles on a single gallon of fuel. By increasing the amount of cargo sent through the Mississippi River System, the demand for industrial real estate space in port regions will significantly increase, reflecting the gains made in port regions that currently host Neopanamax ships. This logic is not exclusive to the Mississippi River System. Industrial real estate in U.S. port regions across the country stand to benefit if local, state, and federal investment is prioritized. No single authority should, however, be solely responsible for port investment.

Unfortunately, $6.2 billion worth of maritime infrastructure projects, an amount relatively modest by comparison to other forms of transport, are federally authorized but have been waiting on funding for years. Federally authorized maritime infrastructure projects currently under construction are awaiting an additional $2.1 billion to be completed. The Federal Office of Management and Budget recently funded only $26.6 million out of the authorized $105 million meant for investment under the Inland Waterways Trust Fund in the latest FY 18 government budget (Waterways Council). The American Society of Civil Engineers estimates that by 2025, $37 billion in public funding will be needed for inland waterways and marine port investment. It is also estimated that $154.1 billion is needed for rail and $157 billion is needed for airports. These vast sums needed to modernize and maintain maritime and intermodal infrastructure is not only important to U.S. commerce and national security, but also essential to accommodating the needs of industrial real estate in the next decades (American Society of Engineers).

6. CONCLUSION

These vast sums needed to modernize and maintain maritime and intermodal infrastructure not only present an immanent problem to U.S. commerce and national security, but also present magnificent development possibilities for the real estate industry. The real estate industry should focus on two things to open this potential. Because the real estate industry follows demand for space, it must work to originate demand through promoting and supporting a regional integrative economic development initiative that matches the local needs of production with global resources and logistics networks in regions where intermodal and maritime infrastructure can be utilized (Ganesan, George, Jap, Palmatier, Weitz, 2009). The nature of political dynamics also tends to respond to the immediate needs of a supportive corporate community. The real estate community must drive an integrative economic development strategy in order to make a case to political leadership that

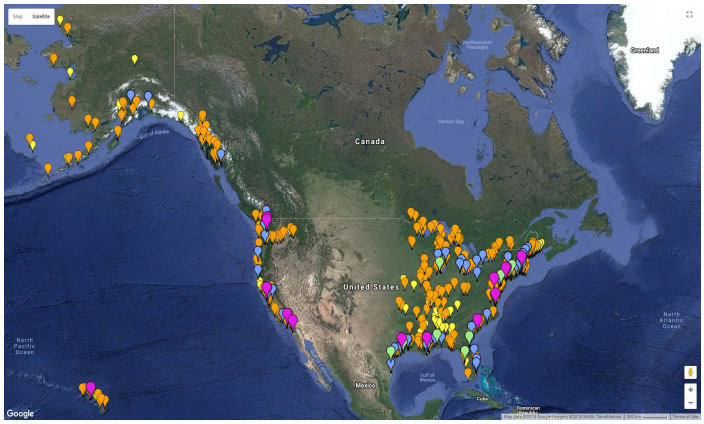

Figure 4. Ports In The U.S. Source: Google Earth. (2018).

public investment is not only warranted, but necessary to the national interest.

Such a monumental initiative should be coordinated by the leaders of industry in the real estate community in their respective fields, from agriculture and finance to e-commerce and logistics. History displays how railroads and the mining industry led to the development of the western frontier and enhanced the prosperity of the country. Today, the mightiest of U.S. enterprise are in a similar position to pioneer a path to inspire our leaders to invest in the future and restore the nation's maritime and intermodal capability. With Washington D.C. focused on infrastructure in 2018, now seems like a good time to start.

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Looking Beyond LEED:

How the UN Sustainable Development Goals can provide an alternative framework for sustainability in hotels

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INTRODUCTION

The Leadership in Energy and Environmental Design (LEED) certification program of the United States Green Building Council (USGBC) has been the path of many hotel industry professionals, particularly owners and real estate developers, wishing to demonstrate a commitment to environmental sustainability. LEED certification offers a framework for hotel industry stakeholders to pursue structurally and mechanically efficient buildings with eco-friendly components and unlock the accompanying financial benefits (USGBC, 2018). New evidence suggests, however, that LEED certification's structure-centric, prescriptive scorecard may be misaligned with the day-to-day operational complexity of hotels (Behnke, 2017). In the wake of the United Nations' call for more ambitious international goals to reduce global carbon emissions in the UN Emissions Gap Report 2017, hotels may find new opportunities for commingled financial, environmental, and societal benefits by leveraging their unique position in the built environment, reframing their sustainability efforts, and aligning with the United Nations Sustainable Development Goals (UN, "Sustainable Development Goals," 2018).

1. HOTELS SHARE IN THE GLOBAL CHALLENGE TO IMPROVE ENVIRONMENTAL SUSTAINABILITY

Enhancing environmental sustainability, pursuing sustainable social and economic development, and mitigating and adapting to the impacts of climate change are highly visible, global challenges. The hotel industry, being a highly visible, global industry, has a role to play in finding solutions.

Hotels are logical targets for sustainability enhancement and innovation in the built environment. As shown in Figure 1, hotels are more intense users of water and energy, and have a larger carbon footprint than any other type of real estate, both per dollar of gross asset value (GAV) and per square meter of floor area (GRESB, 2016). Redefine International noted in their annual "Corporate Social Responsibility Report" that hotels were the real estate sector that saw the largest annual carbon footprint increase, at 15% growth (Redefine International, 2016). While hotels' high resource usage intensity may be partially attributable to their operational intensity, 24-hour demands, and limited control of guests' individual resource consumption, the data clearly indicate enormous potential to improve—potential that today is largely being ignored.

In addition to the quantitative analysis that demonstrates the apparent room for improved efficiency, there are important qualitative elements to consider. Hotels' flexibility to explore sustainability opportunities across disciplines including design, architecture, operations, technology, and management makes them exciting arenas for innovation. Also, top industry players are receptive to public perception (both in-person and online), eager to innovate, and willing to engage with communities to leverage hotels' prominence in the public eye. However, while hotels could be a logical fit for sustainability initiatives, the idea has received little attention. For example, at the Americas Lodging Investment Summit (ALIS), one of the largest annual conferences for hotel real estate professionals, the 2018 program did not include even one panel or speaker focused on sustainability, despite the opportunities that exist for financial gain (ALIS, 2018). Many hoteliers tend to disregard a broad range of ideas from other disciplines, which is incongruous with the multifaceted nature of what they do, and presents a threat to the industry's potential and responsibility to affect real change. Rather than treating LEED as a starting point for sustainability, many hoteliers treat it as a destination, and further sustainability innovation is rare.

The USGBC should be commended for its work in standardizing and mainstreaming a process for the planning, design, and implementation of eco-conscious features into the construction processes and physical shells of buildings. That said, as the hotel industry and its environmental impacts evolve, so too must the solutions for the challenges created by those impacts. Sustainability initiatives have slowly gained traction in the hotel industry over the past decade with initiatives like in-room recycling, linen reuse, and low-flow fixtures, but progress has slowed, and new methods are required to propel the industry forward. LEED certification, although still a possible starting point for sustainable and efficient hotel design and construction, may not be the best answer for industry decision makers who wish to maximize a property's potential to reduce its carbon footprint and maximize its societal contributions.

2. MISALIGNMENT EXISTS BETWEEN LEED'S PRESCRIPTIVE SCORECARD AND HOTELS' OPERATIONAL COMPLEXITY

The USGBC states that "LEED certification is a globally recognized symbol of sustainability achievement" (USGBC, "About LEED," 2018). By contrast, a recent study at Cornell

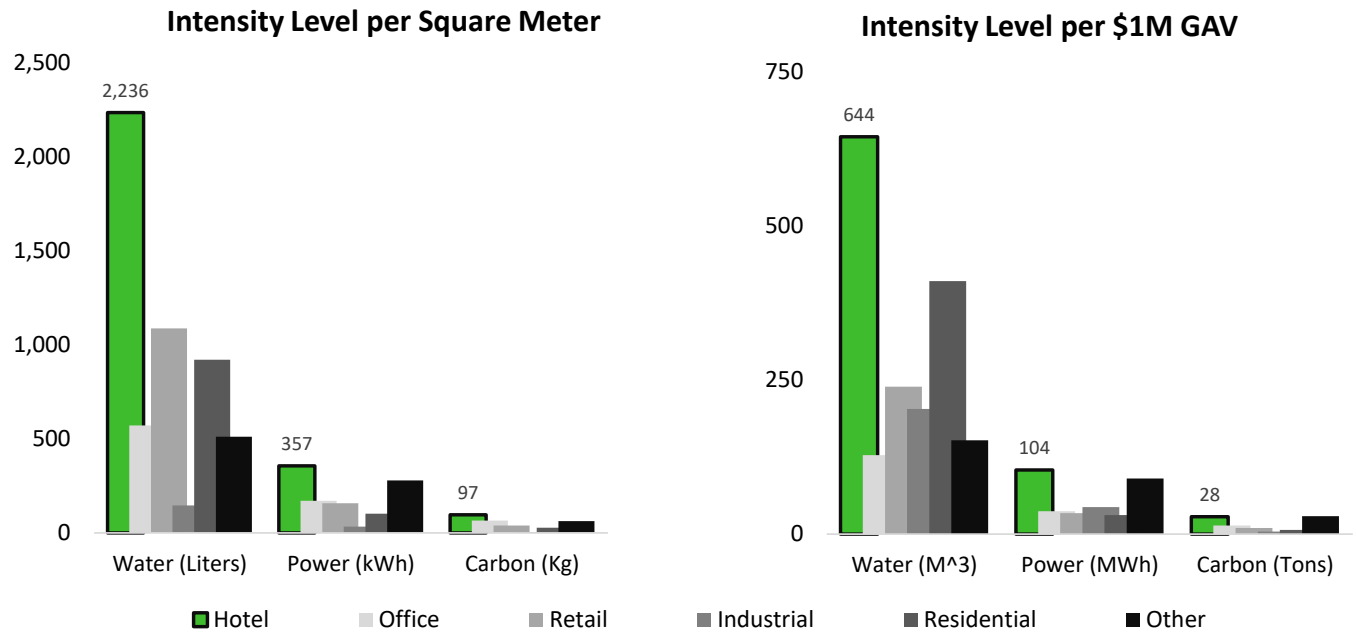

Figure 1: Hotel Resource Use Intensity vs. Other Real Estate Classes (GRESB, 2016)

University's School of Hotel Administration suggests that LEED certified hotels may not truly be more sustainable or efficient than their non-certified peers. As one would expect in a head-to-head comparison of LEED certified hotels and a group of non-LEED certified hotels with similar characteristics, the study found that LEED certified properties use less water and energy on a per square meter basis relative to their non-certified counterparts. However, the same study also found that on a per occupied room basis, non-certified hotels use less water and energy than LEED certified hotels, and have a smaller carbon footprint per occupied room (Behnke, 2017). Despite the acknowledged variance in the study's data typical of hotel industry data, one would expect LEED certified hotels to prove themselves more efficient than their non-certified counterparts. This was not the case.

Many possible conclusions can be drawn from these results, but two main ideas emerge. One is that LEED certified properties are not properly leveraging the up-front investments made in building efficiency and following through on their initial commitment to sustainability. A second conclusion is that many non-certified hotels are built and operated relatively sustainably, but simply do not bother to obtain certification or may have focused sustainability and efficiency efforts on specific elements of their physical structure and ongoing operations without necessarily fulfilling requirements for LEED.

The first conclusion is rooted in LEED's prescriptive, structure-centric certification system. LEED uses a standardized scorecard to assign points to a building's design, structural elements, and development process. A certain level of certification can be achieved simply by earning enough points (USGBC, 2018). This means that consideration and implementation of principal elements of green buildings such as rainwater management or sustainable sourcing of construction materials can be absent from the certification process and ultimately, missing from the delivered building. Furthermore, given that LEED's scope does not extend beyond a building's physical shell, classic elements of hotel sustainability like in-room recycling and linen reuse are not considered (USGBC, 2018). Some LEED certified hotels exist without either. LEED's structure-centric scorecard does not capture the diversity and complexity of the sources of a hotel's carbon footprint as thoroughly as it might for other building types. Additionally, a prescriptive system like LEED involves one evaluation at the beginning of a hotel's life cycle, but no further follow-ups. Performance-based systems like the EPA's EnergyStar program (US EPA, 2018) or the WELL building certification (International Well Building Institute, 2018) require continued monitoring and reporting to maintain a certification status. Ongoing accountability at LEED certified properties would help ensure that they maintain basic levels of sustainability and efficiency.

The second conclusion is rooted in the logic of hotel owners and developers, for whom financial considerations are

among the chief motivating factors. These parties can look at LEED certification's requirements as a list of ideas, but choose to execute only the projects that offer the highest returns on their investments rather than pursue (and pay for) full LEED certification. This helps them avoid the constraints of any certification requirements that may not fit their project -- financial constraints, planning constraints, and otherwise. Although studies have demonstrated that LEED certification may help hotels produce additional revenue in addition to reducing operating expenses (Walsman, Verma, Muthulingam, 2014), many developers and owners do not believe that LEED's benefits outweigh its costs. They view LEED only as a "tone-setter" for a building's sustainability and efficiency, and, by extension, the health and wellness of the people inside it. Therefore, non-certified hotels may still have equal or greater building efficiency relative to fully certified hotels if developers and owners target the right efficiency projects at their property -- a scenario that played out quantitatively when LEED certified hotels were found to have a larger carbon footprint per occupied room than their non-certified peers, as discussed earlier.

Overall, this study implies that LEED certification alone may not be the best solution for hotels seeking to optimize sustainability and efficiency. To be clear, the takeaway is not that LEED certification should not be pursued in the hotel industry, but rather that LEED certification does not constitute a complete sustainability program at a property. LEED certification was designed to guide the construction of a new building, and does not fully capture the day-to-day operational complexity of hotels. The proof is in the numbers. Square meter for square meter, a LEED certified structure tends to be more efficient than a non-LEED certified structure, but this does not mean that the operations taking place inside of that physical shell are also efficient and sustainable. On a per occupied room basis, non-certified hotels proved themselves, at a minimum, equally capable to LEED certified hotels in sustainably managing the ever-changing guest inflow and outflow during 24-hour operations, the accompanying water and energy demands, and the impact of those operations on the hotel's carbon footprint (Behnke, 2017).

Of the more than 50,000 hotels in the United States, approximately 300 have achieved some level of LEED certification (USGBC, 2018). Hotel developers, owners, and operators have been working for years to obtain certification for their hotel projects to reduce utility costs, improve perceived asset value, obtain various government rebates and incentives, or make an environmental statement. All the while, LEED certification may not have been working for them. This raises an important question: if not LEED, what then?

3. THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS OFFER A VIABLE ALTERNATIVE FRAMEWORK TO LEED

The hotel industry in the United States has used LEED certification as its framework of choice for guiding sustainability efforts. Although LEED was an effective early catalyst of increased sustainability awareness in the hotel industry, the time has come to evolve beyond LEED's limited scope for building efficiency and begin to focus on how the industry can contribute to sustainable development. The United Nations Sustainable Development Goals offer an alternative framework through which hotels can pursue this goal.

Sustainable development is a multidisciplinary idea that explores ways to improve human well-being alongside the prosperity of the planet, and it can be understood and defined in many ways. Among the most commonly used definitions is the "Brundtland" approach, named for Dr. Gro Brundtland, chair of the 1987 World Commission on Environment and Development. Her Commission's report, Our Common Future, defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). Since this report, the United Nations has continued to spearhead global commitment to these ideas, and in 2015 released the Sustainable Development Goals (SDGs) (UN, 2018). This collection of 17 goals, shown in Figure 2, represents an intergovernmental agreement to overcome the biggest global issues faced by today's society, with an emphasis on sustainable infrastructure, cities, and energy, as well as on the development of partnerships to achieve these goals by the target year of 2030.

As a part of its ongoing work on sustainable development, the United Nations published the UN Emissions Gap Report 2017 (UN, 2017). This called attention to the dangerous gap that exists between the emissions reductions currently promised by each country—the Nationally Determined Contributions, or NDCs, that resulted from the Paris Agreement in 2015 (UN, 2015) and the emissions reductions needed to achieve the global goal of holding global warming below two degrees Celsius. The report notes that this gap is a result of the world's "limited collective ambition," and that the world now faces an "urgent need for accelerated short term action and enhanced longer-term national ambition"

Figure 2: United Nations Sustainable Development Goals. Source: UN (2018)

(UN, 2017). This urgency is underlined by the number of extreme weather events experienced in 2017 around the world. The report also posits that buildings are one specific area where improvement is needed, and that businesses and local governments will have a key role to play in future progress (UN, 2017).

The United Nations' report has a hopeful undertone in that it points out that the solutions do not require expensive innovations or technological advancements. By "simply adopting or adapting the best practice examples already deployed in the most innovative… contexts," climate change mitigation goals can be achieved in a quick and cost-effective way (UN, 2017). The challenge is now for hoteliers to assimilate what their most innovative peers are doing, both in the hotel industry and in other industries, and incorporate those ideas into their business strategies. The hotel industry should not allow LEED's limited scope to cap its potential. The United Nations SDGs provide a framework that not only pushes buildings beyond the limits of LEED when it comes to building efficiency and general environmental sustainability, but also captures a greater range of possibilities available to hotels to contribute to sustainable development.

The hotel industry touches so many facets of global interconnectivity through its supply chains, distribution channels, local community building, event hosting, food and beverage offerings, branding and marketing, and general operations, that having an impact on each of the SDGs is realistic. For example, take Goal 2: Zero Hunger. Does the hotel have a system in place for reducing food waste or donating unused food to local charities? Or consider Goal 11: Sustainable Cities and Communities. Has the hotel undergone an LED lighting retrofit to save energy and reduce utility expenses? Think of Goal 5: Gender Equality and Goal 16: Peace, Justice, and Strong Institutions. Has the hotel staff undergone training to recognize signs of human trafficking at their property? Or even examine Goal 14: Life Below Water. Has the head chef or procurement director asked suppliers if the fish being received at the hotel were sustainably caught, or if they can be traced back to a source certified as sustainable by the International Marine Stewardship Council (Marine Stewardship Council, 2018; UN, 2018)? The SDGs are achievable, and hotels can play a part, but not through business as usual.

Unlike less operationally complex kinds of real estate, hotels can harness the full power of the SDGs to align with other organizations, find common ground, create partnerships, and catalyze innovation. Any hotel industry stakeholder may be overwhelmed by the scope and ambition of the SDGs, but these goals can be broken down and managed, and therefore operationalized into tangible outcomes. The 17 goals are made up of hundreds of indicators, targets, and benchmarks that can be used to take the SDGs from a collection of massive, ambitious objectives to easily-consumable action-steps (UN 2018).

4. CONCLUSION

The hotel industry has more responsibility to contribute to sustainable development than some of its players realize, but it also has more potential to improve than many of its players realize. Many hoteliers do not engage with LEED at all, and many that do incorrectly use LEED as a proxy for a complete hotel sustainability package, which has left the

industry with unfulfilled potential to contribute to sustainable development. By suspending disbelief and engaging with the possibilities at their fingertips, hotels could unlock opportunities for commingled financial, environmental, and societal benefits. The goal of this paper is to encourage hotel industry decision makers to think differently and be more ambitious with their sustainability agenda. Looking beyond LEED to the UN Sustainable Development Goals would be an excellent first step.

For hoteliers looking to take a first step in engaging with the UN Sustainable Development Goals and aligning their business with solutions to global challenges, please visit http://www.un.org/sustainabledevelopment to learn more about the goals and the specific targets they include.

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