



Real Estate Academic Initiative Newsletter

Volume 9
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The REAI is an interfaculty, interdisciplinary program focused on real estate and urban development research and education at Harvard University.

Gerald Hines: the Innovative Journey of a Real Estate Development Visionary

by Lisa Chase, REAI Staff Writer

A long and illustrious career has given Gerald Hines a unique and comprehensive perspective on successfully building a global real estate development enterprise. From his early career as a mechanical engineer to his role today overseeing innovative commercial and residential projects across the globe, Hines has distinguished himself by recognizing the critical importance of outstanding design in real estate development. Since its 1957 inception, the Hines development philosophy has focused on crafting high quality, aesthetically valuable and enduring buildings. On April 18th, Hines discussed the trajectory of his career with an enthusiastic Harvard Graduate School of Design (GSD) audience. Hines was accompanied by Robert A.M. Stern and Meghan McDermott of Robert A.M. Stern Architects, and Daniel MacEachron, Chief Operating Officer of the Rockefeller Group Development Corporation and formerly Vice President at Hines. This was the second of Hines' four visits to the GSD as the REAI's inaugural Executive in Residence. Hines will return to the GSD in November, so stay tuned to the REAI web site for details on his next presentation.

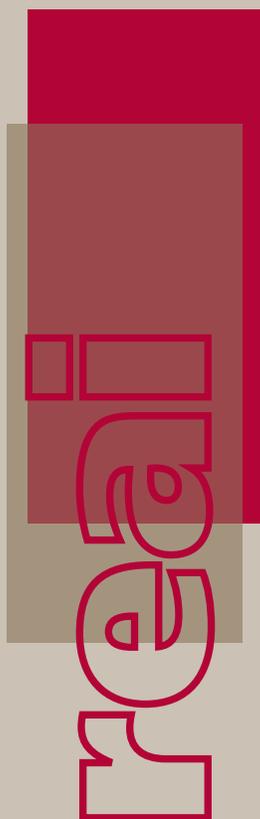
Beginning with the first projects he built independently while employed full-time at a Houston engineering firm, Hines distinguished

himself by prioritizing highly functional and visually appealing design. This set him apart from the vast majority of investment developers who considered architects as largely irrelevant factors in their projects. The firm's first breakthrough building in the late 60s, a Houston office tower intended to house Shell Oil's Southwest headquarters, was so architecturally impressive that Shell decided to relocate its U.S. headquarters to the building. Hines' focus on stunning architecture was ultimately the key to its global success. By collaborating with design luminaries such as Robert A.M. Stern, Cesar Pelli, Frank Gehry, I.M. Pei and Philip Johnson, Hines has fostered a reputation for place-making, crafting iconic yet efficiently functional spaces that integrate into the natural landscape and urban community. This unique combination of structural integrity, aesthetic appeal and community engagement attracts investors and tenants compelled by the visual and structural value of Hines' buildings, while also winning approval from government officials and local communities. Nowhere has this been better illustrated than in Hines' transformation of the Torre del Angel in Mexico City, located in the city's most prominent thoroughfare. In partnership with a prominent local architectural firm and Robert A.M. Stern, Hines purchased an existing dilapidated office building, gutted and redesigned the structure, added retail and pedestrian walkways, and crafted an entirely new pedestrian-friendly urban space. This model has proven equally successful in some of the world's most challenging development environments, including Rio De Janeiro, home to extremely rigorous architectural zoning requirements,

Hines continued on page 9

Above, from left to right, Robert A.M. Stern, Meghan McDermott, both Robert A.M. Stern Architects; Gerald Hines, Hines and Daniel MacEachron, Rockefeller Group Development Corporation (formerly of Hines).

Photo by Justin Knight, Justin Knight Photography



Letter from the Faculty Director

Dear Friends,

This issue marks the beginning of the REAI newsletter's bi-annual publication.

On April 10, the REAI held a cross-school symposium on Sustainability and the Built Environment in cooperation with the Harvard Center for the Environment and the Office for Sustainability at Harvard. Led by Bill Clark and Jack Spengler, faculty from five schools discussed how their different avenues of research relate to the potential impacts of climate change on the Harvard campus and the Boston region by 2050. I am grateful to Jack Spengler, John Macomber, and Heather Henriksen for their help in planning the symposium and to Wendy Jacobs, Tony Gomez-Ibanez, and Ramon Sanchez for leading the break-out groups (see page 7, for a summary of the symposium). REAI is planning a larger conference for Spring 2013 to complement the faculty discussions with representatives from business and government who are engaged in sustainability programs. This conference will take the place of the traditional Fall Conference that the REAI has held in past years, and will be open to all members of the REAI community.

For the second year, the REAI supported a joint Master Class, including a field study and studio, with students from the Business, Design, Kennedy and Law Schools. This year's project focused on redevelopment of the 1600 acre Old Port area of Mumbai, India. Harvard faculty, Rahul Mehrotra, Nic Retsinas, Tony Gomez-Ibanez, and David Barron joined Bing Wang and me in leading the joint student class. Travel to Mumbai was supported by the REAI and by gifts from Joey Kaempfer (HBS MBA '71) through the REAI to HBS, and by Pujit Aggarwal (AMD GSD '08, OPM HBS '04).

On April 17 and 18, Gerald Hines made his second presentation as REAI's Executive in Residence at the Graduate School of Design. Accompanied by architect Robert Stern, Hines discussed their collaborations in projects ranging from Mexico City to India. In addition to an open public presentation and a separate discussion geared toward student members of the combined real estate clubs, Hines and Stern, along with their associates, Dan MacEachron and Meghan McDermott, conducted a critique of projects with students from the Mumbai Master Class.

The REAI concluded its research grants for the Spring after receiving a record number of grant proposals. I am grateful to professors Ed Marchant, Bing Wang, Tony Gomez-Ibanez, and David Barron for their service on the research award committee. We awarded seven new grants, bringing the total number for the year to 19 grant awards. Grant beneficiaries for the spring funding round include two faculty, four doctoral students, and one undergraduate (see page 11, for full details of grant awards).

Harvard also had a record number of winners this year in national competitions and prestigious fellowships relating to real estate. For the ULI/Gerald D. Hines Student Urban Design Competition, a joint Harvard GSD/University of Colorado team won first place, while a second Harvard team was recognized with an honorable mention. Harvard also won the Federal Home Loan Bank of Boston's Affordable Housing Development Competition (see the newsletter back cover, for a full list of student awards/prizes).

This Fall, a joint committee of HBS and GSD faculty will be meeting to discuss further ways to promote cross-school collaboration in real estate and urbanization. We look forward to more faculty being involved in the REAI from these and the other schools, including the College, that are committed to real estate and urban studies at the University.

I am delighted to welcome three new faculty members in real estate to Harvard. Raymond Torto, co-founder of Torto Wheaton Research and CBRE Global Chief Economist, and Frank Apeseche, recently retired CEO of the Berkshire Group, have joined the GSD faculty. Nori Gerardo Lietz, founder of Pension Consulting Alliance Inc., has joined the HBS faculty. On a more somber note, Harvard lost a great friend of real estate, Harold Pollman, who visited GSD twice a year for more than fifteen years to counsel students on how to enter the business and to advise them on their careers. As a land and shopping center developer in Dallas, he and his wife Leah endowed the Pollman Fellowship which is given annually to a post-doctoral graduate to spend a year at Harvard.

Finally, I wish to thank all of the board members – international, alumni, faculty, and students – who make the REAI possible and enrich the intellectual discourse on real estate at Harvard.

Sincerely yours,



*Professor Richard Peiser
Michael D. Spear Professor
of Real Estate Development*



Photo by John Gillooly

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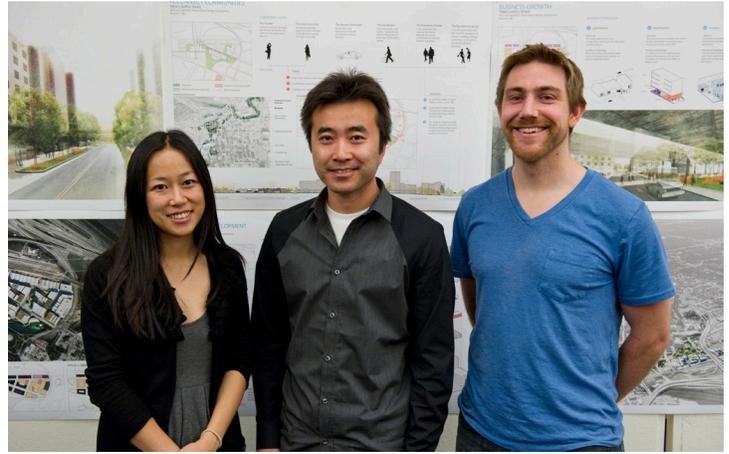
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(left to right) Rekha Madan (MDdesS '13), and Tony Madan, both Boston Investments, and Andre White (MDdesS '13), networking at the REAI sponsored 2011 Fall Real Estate Conference.

Photo by John Gillooly, Photography by John Gillooly



ULI/Gerald D. Hines Student Urban Design Competition team members include from left to right, Tiffany Lau (MArch '12), ChengHe Guan (MDesS '12), Jeff LaBoskey (MArch '12), (not pictured) Ben Brady (MArch '12), and Harvard Business School student Amy Long. "Tread Lightly, Texas!" received an honorable mention for superior site planning. Photo by Justin Knight, Justin Knight Photography

Harvard Student Real Estate Consortium (HSREC) Update

By Faaiza Lalji (MUP/MDesS '12), Harvard Graduate School of Design, President, HSREC, 2011-2012

The Harvard Student Real Estate Consortium (HSREC) represents the wide breadth of real estate opportunities across the Harvard University campus, and is the University's only officially recognized campus-wide student real estate organization. During the 2011-2012 academic year we were pleased to have student leaders from all of Harvard's real estate clubs represented in the HSREC, including the Harvard Graduate School of Design (GSD), Harvard Business School (HBS), Harvard Kennedy School (HKS), Harvard Law School (HLS), and Harvard College. This enabled us to communicate and to make the wealth of offerings at each individual school accessible to the entire real estate community at Harvard.

Through the generosity of the Real Estate Academic Initiative (REAI), real estate students from across the University were able to participate in a number of important conferences both on and off campus, including the REAI Annual Real Estate Conference, the HBS Real Estate Symposium, and the Urban Land Institute (ULI) Fall Expo and Spring Conference.

Additionally, we are truly grateful for our connection with REAI and recognize the value of its incredible alumni network. By organizing networking

events and distributing resume books, many students were able to set up more formal mentorship relationships with REAI board members. Students also benefited from the ongoing mentorship of Gerald Hines, the REAI's Executive in Residence, and the HSREC is eager to continue shaping this recent initiative. Beyond the REAI alumni network, this year HSREC also worked to strengthen its industry ties through membership in Boston's Chapter of the ULI.

Harvard entered several interdisciplinary teams in the ULI Gerald Hines Urban Design Competition and received accolades including the top prize, jointly earned with the University of Colorado. HSREC also promoted more hands-on industry experience, including a client-based independent study project this past semester with the U.S. Department of Housing and Urban Development (HUD). The students who participated in the project researched energy efficiency retrofit financing in privately-owned publicly-assisted affordable housing.

This year the HSREC also supported the College's first ever "Exploratory Course in Real Estate," an academic initiative based on William Poorvu's "The Real Estate Game." Faculty and graduate students volunteered their

time to teach interested undergraduates the fundamentals of real estate, since real estate classes are currently not taught at the College. HSREC is excited to expand this initiative next year in the hopes of exposing younger students to real estate earlier in their education, reinforcing the wealth of real estate opportunities and forging new relationships across the University.

Ultimately the essence of HSREC's mission is "to strengthen the relationship between faculty, students, alumni, and practitioners interested in development issues." Perhaps that is why we are best known for our "pan-school mixers," in which innovative thinkers in design, business, law, policy, arts and science come together to engage in an ongoing dialogue. This year we were fortunate to have half-a-dozen such meetings of the minds, scheduled in conjunction with presentations by great practitioners like Gerald Hines and Robert Peck, and inspiring professors like John Macomber, Nora Lietz and Rick Peiser. On behalf of all of the student board members of HSREC, thank you again to REAI for making possible what we feel was a year full of intellectual exchange and learning. §



A cross-collaboration of disciplines yielded a holistic, performance-based approach to the project's level of sustainability. Decisions of building sizes, architectural style, and construction methods were translated into development pro formas, which ensured economic sustainability and environmental sustainability.



Aiming to craft memorable experiences for visitors, the landscape, including a café situated upon a multi-purpose space for evening movies to be projected upon the Cultural

Grand Prize Winner; Bayou Commons: A New Urban District on Houston's Buffalo Bayou

By Michael Albert (MLA II '13), Harvard Graduate School of Design

The ULI/Gerald D. Hines Student Urban Design Competition, launched in 2002, is considered one of the most prestigious urban design and development competitions for graduate students. Its unique approach asks a multi-disciplinary team of five students to develop an innovative, collaborative and feasible development proposal that grounds complex urban design issues in real world financial implications.

From 139 submissions across 64 universities, a team comprised of students from Harvard University and the University of Colorado-Boulder received the 2012 Grand Prize for Bayou Commons, a proposal for an urban district's revitalization in downtown Houston, Texas. Bayou Commons seeks to become downtown Houston's first mixed-use district celebrating cultural diversity and urban lifestyle. Its multi-phased approach integrates aspects of ecological restoration, cultural placemaking, social justice and demographic analysis, balanced with complex urban economics including public-private partnerships, absorption, and various financial rates of return.

Bayou Commons represents a "virtual collaboration" by students located 2,000 miles apart with 100 percent of the work completed remotely. Harvard Graduate School of Design students Michael Albert, Anna Cawrse and Victor Perez Amado, along with Chad Murphy and Alex Atherton from the University of Colorado's Leeds School of Business, competed against finalist teams from Columbia University, the University of Michigan and University of California-Berkeley.

The "Virtual" Team

How did such a collaborative effort come to fruition? Murphy and Albert met while employed together at Design Workshop, an internationally recognized landscape architecture and planning firm, located in Colorado. Last December, Murphy asked Albert if he'd be interested in forming a joint-university collaboration.

While academia often promotes collaboration within their respective programs, students rarely have the opportunity to test theories against different university schools, and even less frequently other universities. However, in today's global practice, open-minded collaborations between complementary disciplines have yielded innovative solutions in our built environment. Therefore the team envisioned a collaboration that would emulate the style of today's professional practice – a diverse group of individuals coming together to solve critical issues. Fluid communication and accountability were critical to achieving success, and students maintained daily contact with each another from day one, sharing ideas and debating potential solutions.

Project Site

The project site, situated adjacent to Buffalo Bayou, is a 26-acre parcel holding a USPS regional distribution center that is slated to close and has been put up for sale. The competition challenges student teams to develop a comprehensive proposal for a fictitious entity, the Central Houston Foundation (CHF), who acquired the option to purchase the site. The team's submission would ultimately integrate over three million square feet of development, including 1,350 residential units, in an integrated, phased, and logical approach.



The design blends components of architecture with landscaped water feature and a flexible open space, orientated Center.



Collaboration resulted in bioclimatic design strategies entailing air movement, insulation, solar gain rejection and evaporative cooling. Situated north-south to capitalize upon local wind patterns, pedestrian routes include cultural cues indicative to Houston's heritage, including continuous arcades and live oak streetscapes.

Collaborative Process

Compressed within a two-week timeframe, the initial submission required a streamlined process. With no prior knowledge of local market conditions, the MBA students commenced with interviews from local real estate experts and brokers, and searched the internet to obtain information on absorption rates, nearby property valuations and construction costs. Similarly, design students investigated the site's existing physical conditions, including adjacent land uses, hydrologic and circulation patterns, as well as, public transportation and open space connectivity. Team members rejoined to share information and to conduct a SWOT analysis which led them the proposal's overarching vision, goals and critical success factors.

To develop a site plan, the design team members led the overall physical framework plan while business students developed the required program necessary for each phase of development based on market condition assessment. Based on its ability to physically "set" itself within the plan, the design team requested minor program adjustments from the business students. Each discipline quickly realized the implications of their decisions, which made individuals more considerate of each other's needs. Regardless of discipline, all team members were asked to provide feedback on each other's work, including final graphic representations.

Upon becoming shortlisted, the team participated in a site visit, which represented the first time all team members had met in person. "Virtual" collaboration returned over a four-week period until the final submission and presentation, where all members travelled to Houston to participate in a public presentation, juried by national industry leaders. The team's win is the third for Harvard University, which also won the competition in its inaugural year, 2002, and again in 2006.

Balancing Physical & Market Analysis

The proposal's success depended not only on its ability to address current physical conditions, but also required a balanced mastery of the city's projected market demographics. As America's fourth largest city, Houston represents one of the nation's youngest, fastest-growing and most culturally diverse metropolitan areas. Spanning 624 square miles, its physical scale is immense. With the ten-county Greater Houston Region projected to increase to 8.5 million (45% increase) by 2030, the city has positioned itself as a global icon. The region is home to twenty-nine Fortune 500 companies and the Port is the fifteenth largest in the world. Despite these statistics, there are currently only 3,000 actual residential units in downtown. The proposal sought to address this shortcoming by redefining the way urban living and development would evolve in the city's core.

The Houston Downtown District's Market Research report desires to "build downtown for the future profile of downtown residents and workers." Personal phone calls to local real estate brokers and developers not only provided access to historic absorption rate of multi-family development, current units under construction and projected market conditions, but also revealed statistics that identify targeted user groups, including residents, students, business owners and travelers.

Landscape as Infrastructure

Buffalo Bayou provided the physical resource to craft a plan with strong physical and visual linkage to its natural environment. In four "overarching" moves, 'Reclaim the Bayou'; 'Puncture Site Edges'; 'Establish Lost Connections'; and 'Integrate Development'; the proposal focused on integrating the landscape of Buffalo Bayou as the plan's

physical framework. Franklin Street, the district's east-west arterial, was realigned from its current location, providing increased capacity for flood conveyance, offering increased bayou-front green space and waterfront recreational amenities. A series of landscape fingers "punctured" the site's periphery, including a signature live-oak retail corridor terminating upon a new commuter rail station, an education-based cultural park, and a linear urban plaza. Deliberate vehicular and pedestrian connections provided linkages to nearby public transportation hubs and the Theater District, Historic District and the University of Houston-Downtown campus. Pedestrian routes included cooling shade and water elements with continuous arcades indicative of Houston's rich outdoor culture. Additional bioclimatic design strategies, entailing air movement, insulation, solar gain rejection and evaporative cooling were incorporated for human comfort. Finally, architectural massing was stepped as it approached Buffalo Bayou, facilitating views to both the reclaimed natural resource and the skyline beyond.

Environmental Stewardship

A cross-collaboration of disciplines yielded a performance-based approach to the project's level of sustainability. Referring to metrics established by the Sustainable Sites Initiative™ and LEED™, the proposal reduced impervious surface area by over 50%, increased canopy coverage by 450% and added five additional acres of open space along the corridor. The project's financial pro forma anticipated all proposed construction would achieve LEED™ Platinum standards. Techniques in urban restoration ecology sought to rehabilitate Buffalo Bayou by improving water quality through best management practices, by increasing wildlife habitat through diverse landscape typologies and by maintaining public access through a grading scheme to accommodate various stages of flooding.

Expressing Cultural Narratives

The proposal also sought to educate the public through design cues reflective of Houston's heritage, including architectural verandas, bald cypress allees and amply-shaded oak streetscapes. Further efforts focused on turning these cues into productive elements. Along the linear plaza, a series of abstracted "live oak" shade structures captured runoff. North Commons Park reintroduced a productive pecan grove, an element historically found along bayou. Finally, a new architectural icon for downtown Houston, The Cultural Center on the Bayou served as a civic educational/performance venue dedicated to conveying the importance of Houston's resource.

Social Equity through Housing

The Commons aimed to attract a mix of ethnic and socio-economic individuals through its integration of diverse residential product types which correspond to local statistics on housing demand. Furthermore, the competition's prompt provided opportunity to work with New Hope Housing, a non-profit, affordable housing entity that builds and manages single room occupancy housing developments. After investigating New Hope Housing's past developments, the team proposed a modified model that offers residents a visual and physical connection to their natural environment, while providing a safe, stable, and comfortable living environment.

Market Conditions and Financial Feasibility

The team's ten-year phased approach was firmly grounded in the local Houston market. Land values, construction costs, rent expectations, lease terms, and for-sale prices were all thoroughly researched and built-in to the financial pro forma that guides the development plan. The plan carefully considered place-making in each phase while building product to meet the current demand. The early phases identified and captured a current demand for multi-family rental product. Future phases brought in an acceptable amount of retail, restaurants, and commercial office, supported by a residential base to create a truly mixed-use, livable neighborhood. Future phases shifted to the expectant real estate market cycle of for-sale product including lofts and condominiums.

Ultimately, the phasing plan was market driven, realistic, and provided for flexibility. From a financial standpoint, the team recommended the CHF to partner with outside developers and private investors in order to realistically develop an urban project as complex as Bayou Commons. The project is funded through the CHF's initial land purchase, private equity, Low-Income Housing Tax Credits, Tax Increment Financing, and traditional debt. With total project costs of nearly \$500 million, the project achieves an Unleveraged IRR of 10.84%, and a Leveraged IRR of 18.91%. The CHF could expect to earn an IRR of 12.14%, while private development partners could expect an IRR of 21.09%, respectively. §

From left to right: Anna Cawrse, (MLA II '12), Harvard Graduate School of Design; Chad Murphy, MBA Real Estate, University of Colorado; Alex Atherton, MBA Real Estate, University of Colorado; Victor Perez Amado, (MARCH I AP + MAUD '13); Michael Albert, (MLA II '13), both Harvard Graduate School of Design



Reimagining the Sustainable City

By Lisa Chase, REAI Staff Writer

The REAI's April 2012 forum on Sustainability and the Built Environment, jointly sponsored with Harvard University's Center for the Environment and Office for Sustainability, set a new path for the REAI and the Harvard Graduate School of Design (GSD) with its collaborative approach to exploring the future of global urban sustainability. With representatives from Harvard College, Harvard Law School (HLS), Harvard Business School (HBS), Kennedy School of Government (KSG), the School of Public Health (SPH) and the GSD, the forum focused on the environmental, social and public policy implications of crafting a built environment to meet the challenges of an expanding global urban population. Mohsen Mostafavi, Dean of the GSD, set the tone for the forum by emphasizing the cross-disciplinary and collaborative nature of the GSD's building sustainability initiative, and its connection to Harvard's campus-wide commitment to environmental sustainability. Following on the Dean's introductory remarks, John Macomber (HBS and GSD) outlined the forum's goals of crafting innovative solutions

to the global challenges of rapid urbanization, natural resource scarcity and climate change through the built environment. Macomber stressed the private sector's role in meeting

these challenges, and the importance of Harvard University leading the charge through its academic research, teaching and innovation resources.

Jack Spengler from the School of Public Health moderated a lively series of cross-disciplinary faculty presentations, along with Heather Henriksen from Harvard's Office for Sustainability, who described the university's campus-wide initiatives to reduce its environmental footprint. Illustrating the comprehensive nature of the built environment, including urban structures and the supporting ecosystem, faculty presenters included James McCarthy from Harvard's Department of Organismic and Evolutionary Biology, William Clark of the KSG, who emphasized the significant potential for cities to reduce global climate change, Jose A. Gomez-Ibanez who teaches at both the GSD and KSG, Gary Hilderbrand, who teaches landscape architecture at the GSD, and Wendy Jacobs, whose curriculum at the Law School focuses on environmental law and public policy. Christoph Reinhart from MIT spoke about energy use and production in urban centers, Joyce Klein Rosenthal from the GSD discussed the social dimensions of urban planning, Jerald Kayden of the GSD stressed the need for better cohesion between environmental law and urban planning, and Bing Wang described her research at the GSD on the link between real estate investor risk evaluation and environmental building features. Ramon Sanchez from the Division of Continuing Education's Environmental Management Program spoke about the health impacts of building energy use and environmental features, and Jack Spengler expanded on Sanchez's comments by describing his extensive research on the health benefits of the natural environment and the need to integrate these factors into public policy.

Breakout sessions provided forum attendees an opportunity to discuss the integration of nature into the urban environment, the implications of public policy and governance on crafting sustainable urban centers, and the critical importance of design in creating an infrastructure, including transportation and energy delivery, to support the world's rapidly expanding cities. Richard Peiser, Faculty Director of the REAI, wrapped up the forum by challenging attendees to begin crafting collaborative, actionable plans for transforming the world's global built environment. Participants will have a chance to share their "big ideas" about urban sustainability at the next conference in Spring 2013. §

UPCOMING MEETINGS:

Alumni Advisory Board
October 25–26, 2012
Cambridge, MA
(by invitation only)

Executive in Residence:
Gerald Hines
November 28–29, 2012
See website for further details

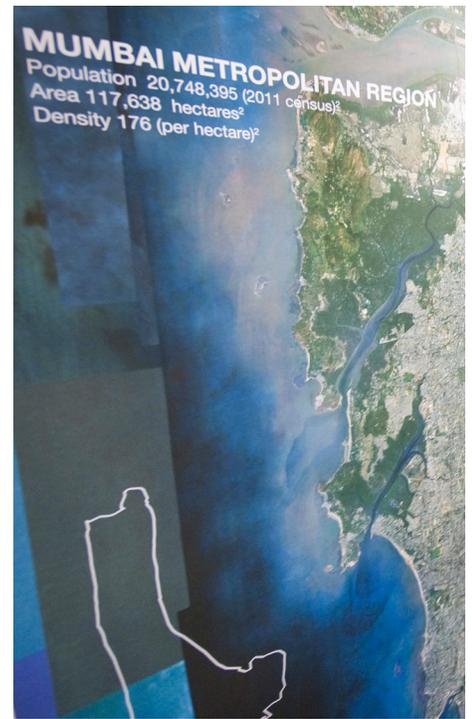
International Advisory Board
November 13–14, 2012
Cambridge, MA
(by invitation only)

Harvard–USC Real Estate Summit
February 3–6, 2013
Park City, UT
(by invitation only)





(from left to right) Richard Peiser, Michael D. Spear Professor of Real Estate Development at GSD, with students Christian Ervin (MDesS '13), GSD; Christopher Dempsey (MBA '12), HBS; Emily McAteer (MPA '14), HKS; and James Whitten (MAUD '13), GSD; along with Rahul Mehrotra, Professor of Urban Design and Planning and Chair of the Department of Urban Planning and Design, Harvard Graduate School of Design, at the Spring 2012 Mumbai Review.



Spring 2012 Mumbai Review.

Field Studies in Real Estate, Planning and Urban Design: Redevelopment of the Port of Mumbai

by Christian Ervin (MDesS Technology '13), Harvard Graduate School of Design

This past Spring semester, students from across the Harvard University campus collaborated in a unique cross-disciplinary real estate development initiative through the course, "Field Studies in Real Estate, Planning & Urban Design: Redevelopment of the Port of Mumbai." The project brought together two students from the Harvard Business School (HBS), two Harvard Law School (LAW) students, three students from the Harvard Kennedy School of Government (HKS) and six Graduate School of Design (GSD) students to devise a master plan for a large stretch of undeveloped land on Mumbai's Eastern Waterfront. Of the GSD students, three were enrolled in Professor Rahul Mehrotra's Extreme Urbanism studio, and three were Master in Design Studies students concentrating respectively in Real Estate, Urbanism Landscape Ecology, and Technology.

This diverse student group was tasked with untangling the myriad legal, governmental, social and economic complexities of a vast parcel of land in a major global city in order to propose visionary scenarios for its future development. Mumbai is India's largest city, with over 20 million people, roughly 60 percent of whom live in infor-

mal housing, or slums. A city of tremendous economic disparity, the city boasts some of the highest real estate values in the world, on par with Tokyo, San Francisco and New York City, and is an important financial center for South Asia. The potential development site encompasses 1600 acres of industrial land tightly held by the Mumbai Ports Trust and located directly adjacent to the old colonial center, which is the most highly valued land in the city.

In early January, the students traveled to India to survey the site and discuss its future with various stakeholders and interested parties, including both private developers and civil society. The group met with slum dweller advocates, major property developers and urban designers, toured the city, gathered vital information on the site, and absorbed the idiosyncrasies of a vibrant Indian culture. This hands-on research provided a comprehensive understanding of the development issues facing the eastern waterfront.

During the semester, students joined together in four multi-disciplinary teams to develop their proposals for the site. As part of their ongoing dialogue, the students regularly provided HBS, HKS, GSD and LAW faculty members and each other with progress updates. The diverse composition of each team produced a variety of holistic approaches to the problems the site presented. One team focused on the ecological challenges of a brown field site, weaving transportation, development, and the natural landscape in a seamless fabric. Another team developed a central business district at the landing point of the new bridge connecting Navi Mumbai to South



Drew Gilpin Faust (left), Harvard University President, with Rahul Mehrotra (right), Professor of Urban Design and Planning and Chair of the Department of Urban Planning and Design, Harvard Graduate School of Design, review Mumbai Field Studies projects.

Mumbai, to link the site with Mumbai's other major commercial nodes. This team also adopted an Indian cultural precedent—the courtyard—as an inspiration for urban design.

One of the student teams was comprised of Christopher Dempsey, an MBA student at HBS with significant experience in transportation planning and financing, Emily McAteer, a HKS student with a specialty in transportation and a Fulbright Fellow in India, and James Whitten, an architect and urban designer pursuing a Master of Architecture and Urban Design at the GSD. By leveraging the contrasting talents of its student members, the team devised a major reclamation project synthesizing real estate value, public amenities and transportation demand. The team refined and enhanced their proposal in preparation for the final presentations by discussing their ideas with industry leaders, such as Gerald D. Hines and Robert A.M. Stern. The level of access to “real world” professionals in this project was unprecedented for the students and yielded a more informed and innovative proposal.

The Mumbai redevelopment initiative required the coordination of multiple departments and highlighted the value of interdisciplinary research at Harvard. Collaboration between students with rich and varied perspectives produced innovative research and design approaches, as well as insight into the complexity of large urban development initiatives. The project provided the students with valuable lessons about overcoming the challenges of working with experts in a variety of disciplines. Exploring and resolving the intricacies of communication, funding and accountability in the project proposals helped pre-

pare students for innovative collaborations beyond the academic walls, especially designers, who must coordinate between numerous disciplines. The students felt very fortunate to have participated in this REAL initiative, and hope to see many more collaborative projects at Harvard in the future. §

Hines continued from page 1

and Paris, where responsiveness to community concerns, a focus on pedestrian-friendly designs, and an absolute priority on aesthetics could discourage even the most determined developer.

Today Hines is expanding into the emerging markets of Eastern Europe and Russia, Brazil, India and China, where robust economic growth and demand for commercial real estate present rich opportunities. While the European economies are sluggish at best, with Spain's overbuilt market at a standstill, and the U.S. market is growing moderately, developing countries represent the brightest development landscape. In these environments, where government bureaucracy and tangled business relationships can present obstacles for unseasoned developers, Hines' holistic approach to crafting urban spaces makes him uniquely positioned for success. Hines describes himself as a “pragmatic realist” in his approach to designing buildings with an eye to understanding how people interact with them, while ensuring high tenancy rates and robust investor returns. This time-tested formula is sure to bring him and his firm continued success as he expands the Hines philosophy across the globe. §

Bringing the Old World into the New in Riyadh, Saudi Arabia

By Ming Ngar Lo (MAUD '12), Harvard Graduate School of Design

This past March, with the generous support of the ArRiyadh Development Authority (ADA) and REAI Board Member Mossaed Al-Ahmad (AMD GSD '09), a group of eight students from the Harvard Graduate School of Design (GSD) traveled to Saudi Arabia to investigate the redevelopment opportunities for Al-Turaif, a historical oasis just outside of the bustling city of Riyadh. Located along the banks of the Wadi Hanifa river, in 2010 the Al-Turaif district was approved by the United Nations Educational Scientific and Cultural Organization (UNESCO) as a World Heritage Site. Prior to its UNESCO designation, Al-Turaif had been polluted and fallen into disrepair during Riyadh's economic development, but in the last ten years the ADA has made significant progress revitalizing and restoring Al-Turaif and the Wadi river, including the famed Wadi Hanifa Wetlands. As a result, the land and real estate near Al-Turaif has become extremely valuable. The nearly dozen sites surrounding Al-Turaif are either private farm lands or government-owned, and part of the challenge for the students was to devise a master plan to bring at least few of the pieces together in a coherent scheme. Unlike typical residential or commercial development projects, the ADA challenged the students to come up with an "out of the box" solution to make the Al-Turaif UNESCO site an appealing tourist destination in the Gulf region, while keeping in mind the environmental conservation, historical preservation and cultural issues in the context of an Islamic country.

The students held multiple meetings at the ADA office with a diverse

group of planners, architects, urban designers and archeologists involved in Al-Turaif's redevelopment. Conflicts of interest and agendas between these professionals inspired the students to devise innovative design solutions. One group made up of Yi Tu (MLAUD '14), Tiffany Obser (MARCH I '13) and Ming Ngar Lo (MAUD '12) envisioned a health and wellness theme as part of the restoration project. Since the ancient ruins had remnants of the old Turkish Hammans built adjacent to the site's guest houses, the group reinterpreted the historic use of Al-Turaif with a more modern perspective, combining traditional eastern medicine with new clinical facilities and medical research institutions catering to contemporary public health needs. The urban design encompassed three districts consisting of a medical campus made up of research facilities, student and faculty housing, a commercial district providing retail and commercial space, and a resort oasis where families could stay while getting treatment at the medical facilities. The overall design focused on walkability and minimal auto transportation. Krista Palen's (MDesS '13) and Jim Peraino's (MARCH I '15) priority was devising a master plan that reconnected visitors and residents of modern Riyadh to the Wadi Hanifa's vital ecosystem and to the area's rich history and culture, while developing the city's intellectual and recreational resources. Ying Huang (MDesS '13), Curtis Perrin (MARCH I '13), and Giovanni Rincon (MAUD '13) pursued an infill development strategy that maintained the historical integrity of the UNESCO site while enhancing the area's cultural features and improving city's infrastructure and livability.

Saudi Arabia presents a unique challenge for urban developers and designers as the country's rapid economic growth stirs tensions between traditional cultures and modern society. While Riyadh and Jeddah develop into cosmopolitan urban economic centers, the traditional Bedouins still maintain

a nomadic life in the Saudi Arabian desert. Western-educated Saudis working to modernize the country are inherently at odds with more conservative and traditional factions of the society. As the country struggles to reconcile these conflicting interests by crafting solutions that honor its cultural past while innovating for the future, rich opportunities abound for students and practitioners of urban design and real estate development. §



GSD students (left to right) Krista Palen (MDesS '13), Curtis Perrin (MARCH I '13), ADA planner Neda Al-Harbi, and Tiffany Obser (MARCH I '13) enjoying a traditional Arabian meal. Photo by Tiffany Obser (MARCH I '13)



(left to right) Ying Huang (MDesS '13), Professor of Design; Tiffany Obser (MARCH I '13), Tiffany Perrin (MDesS '13), and Ming Ngar Lo (MAUD '12) standing on the top of Al Faisaliyah Center, the second tallest skyscraper in Saudi Arabia. Photo by Giovanni Rincon Romero (MAUD '13)

REAI Research Grants Awarded, Spring 2012

Faculty

Neil Brenner "Visualizing an Urban World: a Metageographical Analysis" (GSD)
 Rahul Mehrotra "India Urban Atlas" (GSD)

Doctoral Candidates

Juan Chauvin "Productive Structure and Local Economic Development" (HKS)
 Shelby Grossman "On the Determinants of Price Discrimination in Nigeria" (FAS)
 Du Huynh "Three Essay Thesis on Real Estate Markets in Ho Chi Minh City" (FAS)
 Holly Samuelson "A New Energy Benchmarking Tool for Building Owners" (GSD)

Undergraduate Candidates

Meng Chen "Network Traversal: Isolation and Growth in Core Urban Environments" (FAS)



... '13), Ming Ngar Lo (MAUD'12), Curtis ...
 ... bi and Tiffany Obser (MARCH '13) enjoy-
 ... y Lau (MARCH '12)



GSD students experiencing authentic lifestyle of Bedouins in Al Kharj desert, 77km southwest of Riyadh, Saudi Arabia.



... or Bing Wang, Harvard Graduate School
 ... Lau (MARCH '12), and Krista Palen
 ... t with the backdrop of Riyadh city at the
 ... yscrapers in Riyadh, Saudi Arabia. Photo



Harvard Graduate School of Design Saudi Arabia Field Study team, along with hosts, Arriyadh Development Authority, standing under the award winning Buro Happold designed, Tuwaiq Tent at the Diplomatic Quarters in Riyadh, Saudi Arabia. Photo by Ying Huang (MDES '13)



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Student Awards and Prizes

A joint team representing the Harvard Graduate School of Design and the University of Colorado won first prize in the ULI/Gerald D. Hines Student Urban Design Competition for their proposal, "Bayou Commons." The team consisted of three students from Harvard Graduate School of Design (Michael Albert, MLA II '13; Anna Cawrse, MLA II '12; and Victor Perez Amado, MArch I AP + MAUD '13) and two students from the University of Colorado (Chad Murphy, MBA Real Estate and Alex Atherton, MBA Real Estate). (See page 4 for full story).

"Tread Lightly, Texas!" received an honorable mention for superior site planning in the ULI/Gerald D. Hines Student Urban Design Competition. The team included Harvard Graduate School of Design students; ChengHe Guan (MDesS '12), Tiffany Lau (MArch '12), Ben Brady (MArch '12), Jeff LaBoskey (MArch '12), and Harvard Business School student Amy Long. Richard Peiser, Michael D. Spear Professor of Real Estate Development, served as faculty advisor.

Four Harvard Graduate School of Design students (Tyler Hauptert, MUP '12, Nicholas Hornig, MUP '12, Emily Mytkowicz, MUP '12, and Andre White, MDesS '13), along with their teammates from Northeastern University, placed first in the Federal Home Loan Bank of Boston's Affordable Housing Development Competition sponsored by The Federal Home Loan Bank of Boston; Boston Society of Architects/AIA; Kevin P. Martin & Associates, P.C.; ICON Architecture, Inc.; and Citizens' Housing and Planning Association. The team paired up with the recently-formed Caribbean Integration Community Development non-profit organization to develop the "Geneva Exchange" proposal for a vacant site in the Grove Hall neighborhood of Roxbury in Boston.

Julie Zelermyer (MDesS '13) was the first Harvard University recipient of the WX New York Women Executives in Real Estate Scholarship, an award granted to encourage and support bright and talented women embarking on careers in real estate. Julie received the award at the close of her first year in the Master of Design Studies in Real Estate Development and Investment program at Harvard's Graduate School of Design.

Hugh Clark, graduate of the Master of Design Studies in Real Estate Development and Investment Program at Harvard's Graduate School of Design, won the Ferdinand Colloredo-Mansfeld Prize for superior achievement in real estate upon graduation Spring 2012.

Harvard Student Real Estate Consortium (HSREC) sponsored a team of students from Harvard's Graduate School of Design (Julia Anderson, MUP '12; Renee Bissell, MUP '12; Meg Howard, MUP '12; and Emily Mytkowicz, MUP '12) to examine current efforts by the Department of Housing and Urban Development (HUD), the Department of Energy (DOE) and private firms, in crafting programs that support private owners of publicly assisted multifamily housing in undertaking energy efficiency retrofit projects. With support from HUD, input from a variety of interested parties, and independent research, the team completed a study of the feasibility of scaling specific energy retrofit financing programs proposed by two high-capacity affordable housing organizations. The student team was overseen by Professor James Stockard, Harvard Graduate School of Design.

Teresa McWalters (MArch I, '12) of the Harvard Graduate School of Design, was the recipient of the Fulbright-Nehru Fellowship for her research in Mumbai, India. Teresa's research focuses on "Incremental Urbanism: A Study of the Informal City to Unlock the Unique Social and Spatial Merits of Localized, Micro-scale Urban Development." An investigation of the state of urban design and architectural development in Mumbai from the perspective of the individuals who make up the city.