UC BERKELEY
ENVIRONMENTAL DESIGN

INTRODUCTION

DUBAI REAL ESTATE INITIATIVE

The University of California, Berkeley College of Environmental Design (CED) is a world academic leader in the planning, design, and development of the built environment. The college, founded in 1959, offers undergraduate, accredited professional graduate, and doctoral degree programs in architecture, landscape architecture, city & regional planning, urban design, and real estate development as well as summer and executive education programs.

We are pleased to propose a 3-day training program for professionals interested in real estate development and design, taught by distinguished UC Berkeley faculty and leading San Francisco Bay Area professionals. This program would occur on site in Dubai, at DREI.

RATIONALE

DUBAI REAL ESTATE INITIATIVE

The challenges facing the world's cities, and the real estate developers that build them, have never been more profound. The rapid pace of urbanization in the Global South necessitates large-scale efforts to house arriving residents as well as upgrade the living conditions of existing residents living in informal and/or substandard settlements. In addition, globalization of the economy offers a range of economic development opportunities, providing jobs, income, and a growing middle class in many cities, increasing the demand for industrial, logistics, office, retail, and service sector development, along with basic infrastructure such as water and power, transportation, parks and open space. Technological change is creating new opportunities to make cities 'smarter' through sensor networks, the Internet of Things (IoT) and the use of autonomous vehicles and drones, while at the same time raising profound ethical issues around surveillance and privacy. Lastly, climate change is challenging conventional patterns and methods of land development. The need to reduce GHG emissions and associated government regulations, along with sea level rise and the increasing frequency of extreme weather events mean that real estate developers must be savvy about energy-efficient design and construction, and ways to create buildings and places that are resilient to hurricanes, heat waves and dust storms, and flooding. In this context, the need for real estate development professionals that understand both current and future development challenges and opportunities, and have the training and skills to develop innovative real estate projects and product types, has never been greater.

REAL ESTATE DEVELOPMENT + DESIGN PROGRAM MODULES

The objective of the Dubai program is to highlight principles of good city design and introduce a range of leading edge strategies for real estate developers working in rapidly growing cities to build urban forms that are efficient, maximize quality of life, incorporate the latest technologies, and are responsive the risks of climate change

DAY 1

US real estate finance and development process and sustainable city building practices

DAY 2

New methods of building construction and handling resilience in real estate development

DAY 3

Integrated solutions for water and power and designing the smart cities of the future

Day 1

DEVELOPING SUSTAINABLE CITIES

US REAL ESTATE FINANCE AND DEVELOPMENT PROCESS

Case Study: Partnerships for Placemaking and Value Creation in San Francisco's Embarcadero Ferry Building

ABSTRACT: The US real estate finance and development process involves a large number of sectors and actors, including capital markets for equity and debt; public and private sector lenders and insurers; developers, designers, and engineers; and a wide range of public agencies that regulate capital flows, mortgage markets, taxation, and local land use/transportation planning and policy. This module introduces participants to this system, focusing especially on the land development process seen from the perspective of the real estate developer. This provides a basis for understanding later case studies and also allows participants to understand how their own locale-specific development process compares to that of the largest and most internationalized real estate sector in the world.

LEARNING OBJECTIVES: Fundamentals of US capital market structure, real estate finance, and the development process involving market and site analysis; compliance with local land use and environmental regulation; community engagement; design and construction. The case study also equips participants to consider public-private partnership models of real estate development.

SUSTAINABLE CITY-BUILDING: MODELS OF URBAN FORM

Case Studies: Portland, Oregon and Houston, Texas; Barcelona, Spain; Hong Kong; Dubai, UAE

ABSTRACT: Real estate professionals work at various scales, from building to metropolitan region. In the world's megaregions, development projects are often large, at neighborhood and even city scale. It is therefore imperative that development professionals understand the fundamentals of urbanism and urban design. This module will introduce participants to historical models of urban form and contemporary patterns of urbanism, and the metrics that underlie these forms including density, floor area ratio, street design, access to economic activity and public space, and transport system design. The underlying questions to be explored are: What are the elements of good city design? And how can development practice as well as public policy support good city, neighborhood and project design? The module will use case studies from two very different US cities as well as three cities in Europe, Asia and the Gulf to illustrate characteristic urban forms and their evolution.

LEARNING OBJECTIVES: Participants will learn the fundamental principles of urban design and the policies that support them, through case studies of cities that are exemplars of both good and problematic urbanism.

INSTRUCTOR

Greg Morrow

Director
Real Estate Development + Design Program @ UC Berkeley

Day 2

INNOVATIVE DEVELOPMENT & CONSTRUCTION STRATEGIES

NEW METHODS OF BUILDING CONSTRUCTION: OFF-SITE CONSTRUCTION

Case Study: Factory OS, Vallejo, CA

ABSTRACT: The construction industry is highly localized, and in most places has not fundamentally changed in more than a century. Buildings are designed, contracted, and built on site by a large number of trades men and women. The process is time consuming, expensive, and challenging to coordinate. Today, in cities under intense pressure to provide affordable housing, off-site factory production is again being pursued. Cities are trying to lure off-site production factories, while major tech firms such as Google are placing large orders for housing modules with existing factories. In addition, new production models, technologies, materials are being used to fabricate structures off-site. This module introduces the rise of factory production and new construction technologies, explores opportunities they provide, as well as their constraints and challenges. Various manufacturing technologies will be highlighted (e.g., Poland's Polcom Group's deployment in the hospitality industry, Factory_OS in Vallejo California, etc.). This module explores innovative business models that zbor models that trains workers in low wage sectors and quickly trains them, and stands as an innovative labor-business model.

RESILIENCE AND REAL ESTATE DEVELOPMENT: CLIMATE CHANGE, HEAT AND DUST

Case Studies of Net Zero Buildings and Green Infrastructure Approaches to Heat/Dust Mitigation

ABSTRACT: Climate change is already having major implications for real estate development. As financial and insurance sectors react to the risks of climate change for urban land development, the parameters of development finance as well as project design are changing. Moreover, in areas of the world such as the UAE, increased heat and dust pollution will demand net-zero developments that remain comfortable, and green infrastructure designed to reduce urban temperatures and allow active transport, save energy by shading buildings, and mitigate dust pollution through landscape design. This module will offer case studies of net zero buildings and green infrastructure design to mitigate heat and dust. Important questions to be discussed include how the public sector can incentivize such developments and how to insure that resilient development and climate planning can protect residents regardless of economic status.

LEARNING OBJECTIVES: Participant understanding of the basics of climate change and its implications for cities and real estate development projects. Through lecture and case study examples, the objective is equip students with the fundamentals of energy and water efficient design, and green infrastructure models for adapting to climate change impacts, especially heat and dust.

INSTRUCTOR

Susan Ubbelohde

Professor
Department of Architecture @ UC Berkeley

Day 3

NEW INFRASTRUCTURES FOR REAL ESTATE DEVELOPMENT

INTEGRATED SOLUTIONS OF WATER AND POWER

Case Studies: Eco-Block Model, Vauban / Freiberg, Germany

ABSTRACT: Traditional 20th century project construction included water and power infrastructure based on a linear model: resources (energy, water, and food) came into a project from centralized utilities or stores (electric grid, gas lines, water pipes, supermarkets) and left the project in the form of GHG emissions, wastewater pipes, and food/packaging waste. Today, a circular model of development is gaining traction, based on the idea that 'waste=food'. This circular economy system emphasizes zero-net energy and water design, distributed solar/wind energy generation, circulation of greywater and on-site purification, on-site food production, and recycling of food waste and packaging back into fertilizer or energy. Using case examples of real projects, such as the Vauban neighborhood in Freiberg, Germany, as well as the ambitious Eco-Block project designed for Oakland, California, this module offers participants new models for sustainable urban development.

LEARNING OBJECTIVES: Participants should understand the difference between tail-pipe and circular models of urban development, and how circular models can dramatically reduce energy emissions, water consumption, and food/packaging waste, and increase food security.

SMART CITIES

Case Studies: Singapore, Buenos Aires, Copenhagen & Beyond

ABSTRACT: Ideas for making cities 'smarter' – by using technology to increase their economic base, deliver efficient public services, improve environmental and public health, and enhance everyday life - have evolved and matured over the past decade. At the same time, a wide range of 'smart city' experiments in cities around the world have been launched and evaluated. This module introduces participants to what works – and what does not work – across the spectrum of 'smart city' strategies. It focuses on how real estate developers can harness such strategies in their projects, by using case examples. Importantly, the module will introduce 'proptech,' which is rapidly disrupting traditional development models, particularly in such rapidly developing areas as the Middle East, Africa, and Southeast Asia. Proptech impacts how development opportunities are sourced, how transactions are made, projects marketed, and properties managed.

LEARNING OBJECTIVES: Provide a portfolio of smart city strategies for participants, including proptech, and how these strategies can be incorporated into real estate practice and projects. This includes how to engage residents in the design of smart city approaches. Discussion will allow participants to understand the potential downsides of certain smart city practices.

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