

Syllabus

January 14, 2014

Sustainable Real Estate Development

University of Colorado Real Estate Center, Leeds School of Business, MBA Program

Instructor: Tim Van Meter, Architect & Urban Designer

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Course Overview: By 2025, the Colorado Front Range is expected to grow by 1.5 million people, requiring the construction of hundreds of thousands of new homes and apartments, places of employment, shopping, entertaining and recreating, as well as systems of mobility and infrastructure that connect these places. How we develop in this uncertain future will not just tell about our future urban form, but how the quality of our communities are impacted, and the degree that they are sustainable. As Sustainable Real Estate Development has matured to the point of a viable and profitable alternative to the sprawling and resource inefficient development practices of decades past, this course will focus on the environmental values, limitations of natural resources, socio-economic, public health, technical and business precedents that has brought together this critical real estate development practice that is necessary for our future.

Pursuing sustainable real estate development makes firms more competitive, more resilient and nimble in a fast-changing world and more likely to win and retain customers. In addition, it can make them more attractive to investors and insurers, while reducing their exposure to regulatory and other liabilities and risks.

Course Objectives: Students will gain the background knowledge and the language of current Sustainable Real Estate Development practices. Getting to the “triple bottom line” of practices and projects, in concert with a firm understanding of the multiple drivers for the new emphasis on sustainability.

Course Grading & Project:

A. Case Study Project:

Each student will complete a Case Study Project [in writing, 4 pages minimum, double sided on paper] and power point [summary presentation form] from a built project of the student's choosing [preference is for projects within the State of Colorado] that summarizes in sufficient detail the specific parameters of Sustainable Real Estate Development. The goal and intent here is a through understanding of the underlying economics of sustainability, and building a Business Case and the Analytics for Sustainable Real Estate Development of that particular project. Each student will be prepared to present this report to the class and lead a discussion on the subject matter. This will be due Week 14, April 15th.

30% of Total Grade

B. Quarterly Summary of Class Readings:

Each student will summarize in writing [2 page minimum, double sided, on paper] in sufficient detail the parameters of that specific quarter subjects & readings as well as the students personal analysis of these issues.

15% of Total Grade each x 4 = 60% of Total Grade

C. Weekly Discussion Participation:

Each student will be prepared to discuss and expand upon the weekly reading material in class, as well as be able to dialogue with Instructor and the Guest Speakers.

10% Grade

Class Schedule:

I. The Fundamentals

Week 1:
Jan. 14 **Making the Business Case for Sustainable Real Estate Development**
•Class Overview & Expectations
•Making the Business Case for Sustainable Real Estate Development
 • Pursuing sustainable real estate development makes firms more competitive, more resilient and nimble in a fast-changing world and more likely to win and retain customers. In addition, it can make them more attractive to investors and insurers, while reducing their exposure to regulatory and other liabilities and risks.

Week 2:
Jan. 21 **Principals of Sustainable Real Estate Development**
•The critical importance of environmental thinking in Real Estate Development
•Defining Sustainable Development
•Barriers to Sustainable Development
•The market for Sustainable Development
•The benefits of Sustainable Development
•A strategy for Sustainable Development
•Shifting the Paradigm
•The Triple Bottom Line

Required Reading: 2013 GRESRB Report
 ULI Greenprint Performance Report 2012

Guest Lecturer:

Week 3: **Introduction to LEED and Net Zero Development I**

Jan. 28

- What is LEED and its toolbox
 - Smart Location & Linkage
 - Neighborhood Pattern & Design
- Net Zero Development

Required Reading: LEED Green Associate Study Guide; Chapters 1, 2, 4,
Guest Lecturer:

Week 4: **LEED and Net Zero Development II**

Feb. 4

- What is LEED and its toolbox
 - Green Infrastructure & Buildings
 - Innovation and Design Process
 - Regional Priority Credits

Required Reading: LEED Green Associate Study Guide; Chapters 5, 6, 7,8,9,10
Guest Lecturer:

II. The Urbanized Landscape

Week 5: **Green Land Use, Transportation & Infrastructure**

Feb. 11

- Principals of New Urbanism,
- Principals of Smart Growth
- Principals of Low Impact Development
- Principals of Transit Oriented Development
- Principals of Community Health & Development

Required Reading: Building Better Budgets
Guest Lecturer:

Quarter I: The Fundamentals, Summary of Class Readings due

Week 6: **Site Typology**

Feb. 18

- Greenfields [virgin land]
- Greyfields [infill and vacant parcels, and outmoded uses]
- Brownfields [environmentally challenged parcels].
- Transit Oriented Development
- Sprawl Repair
- Land Assembly
- Jurisdictional Parameters

Required Reading: Walk this Way
Guest Lecturer:

Week 7: **Green Master Planning, Urban Design & Site Design**

Feb. 25

- Principles of the Integrative Site Design Process
- Creating a vision for Sustainable Development
- Goals and Measuring Success
- Project Team Members
- Sustainable Place Making

Required Reading: A Citizen's Guide to LEED ND

Guest Lecturer:

Week 8: **Repositioning Suburbs**

March 4

- Infrastructure
- Challenges and Opportunities
- A Broader Scale

Required Reading: Shifting Suburbs

Guest Lecturer:

III: Green & High Performance Buildings

Week 9: **Green & High Performance Buildings**

March 11

- Green Residential [Urban and Suburban];
- Green Mixed Use
- Green Office
- Green Retail
- Green Hospitality
- Green Entertainment
- Green Cultural
- Green Recreational
- Green Parking
- Conservation Development
- Urban Agriculture
- Adaptive Reuse
- Immersive Environments

Required Reading: The Economics of Biophilia

Guest Lecturer:

Quarter II: The Urbanized Landscape, Summary of Class Readings due

- Week 10:
March 18
- Green Building Design and the Integrative Design Process**
- Principles of the Integrative Building Design Process
 - Buildings as Organisms
 - Setting Priorities: Energy Conservation First, Energy Generation Second
 - Understanding Context, Region & Climate
 - Optimizing the Building Design
 - Designing for Adaptability
 - Green Building Systems
 - Green Building Materials
 - Green Building Construction

Required Reading: High Performance Green Building: What's it's Worth?

Guest Lecturer:

- Week 11:
March 25
- Spring Break**

- Week 12:
April 1
- Green Building Retrofits, Adaptive Reuse & Renovation**
- Deep Green Retrofits
 - Greening Existing Buildings with Existing Uses
 - Transformational & Repositioning Strategies
 - Green Building Systems
 - Green Building Materials
 - Green Construction

Required Reading: United States Building Energy Efficiency Retrofits; The Economics of Green Retrofits

Guest Lecturer:

IV. Sustainable Real Estate Development Economics

- Week 13:
April 8
- Sustainable Real Estate Development Economics I**
- Measuring Success
 - Cost & Benefits of Sustainable Development
 - Integrating Design Process with Development Cost
 - Cost Methodologies
 - Cost of LEED Certification

Required Reading: The Economics of Sustainability in Commercial Real Estate

Incremental Cost, Measureable Savings

Guest Lecturer:

Quarter III: The Building, Summary of Class Readings due

Week 14: **Sustainable Real Estate Development Economics II**

April 15

- Financial Analysis, Feasibility and Alternatives
- Green Investor Options
- Financing Plan & Strategy
- Public Private Partnerships

Required Reading: Value Beyond Cost Savings

Guest Lecturer:

Week 15: **Final Class: Case Study Presentations**

April 22

- Student Power Point Summary Presentations of Case Studies and Discussions

Quarter IV: Sustainable Real Estate Development Economics, Summary of Class Readings due

Final Case Study due

Potential Colorado Case Studies: Built Sustainable Real Estate

Belmar, Lakewood

Stapleton, Denver

Bradburn, Westminster

UpTown Broadway, Boulder

Holiday Neighborhood, Boulder

Union Station Development, Denver

Prospect, Longmont

Highland Garden Village, Denver

Taxi, Denver

FireClay Lofts, Denver

Denver Dry Building, Denver

One Riverfront Park, Denver

Clayton Lane, Denver

South Lincoln, Denver

Steel Yards, Boulder

South Main, Buena Vista

Belle Creek, Commerce City

Englewood City Center, Englewood

The Spire, Denver

NREL, Golden

Lowenstein Complex, Denver

Solera, Denver

2020 Lawrence, Denver

Aardex Signature Centre, Golden

Denver Place, Denver

Benedict Park Place, Denver

Excel Building, Denver
Fitzsimmons Village, Aurora
3 Springs, Durango

Tim's Reading List: Books concerning Sustainable Real Estate Development:

Reinventing Fire by Amory Lovins and RMI
Natural Capitalism by Paul Hawkins and Amory Lovins
Original Green by Stephen Mouzon
Colorado Urbanizing by CNU Colorado
The Integrative Design Guide to Green Building by Group 7
Green Urbanism by Timothy Beatley
Light Imprint Handbook by DPZ
The Smart Growth Manual by Andres Duany and Jeff Speck
New Urbanism Best Practices Guide, CNU
Green Metropolis by David Owen
Green Neighborhood Development LEED Reference Guide, USGBC
Urbanism in the Age of Climate Change by Peter Calthorpe
Sustainable Urbanism by Doug Farr
Ecological Design by Sim Van Der Ryn
Sustainable Transportation by Jeff Tumlin
Growing Cooler, The Evidence on Urban Development and Climate Change by Sam Ewing
Green Building and LEED Core Concepts Guide by the USGBC
Hot, Flat & Crowded by Thomas Freidman
Cradle to Cradle by William McDonough
Biomimicry by Janine Benyus
Retrofitting Suburbia by Ellen Dunham-Jones
Sprawl Repair Manual by Galina Tachieva