

# ***STOCKSCH 397S – Sustainable Site Planning and Design***

Online Class Part of the [Sustainable Food and Farming Certificate Program](#)

Instructor: Thomas S. Benjamin, RLA, LEED-AP

Email: [benjamintom1@gmail.com](mailto:benjamintom1@gmail.com)

To register for spring 2013 go to [REGISTRATION](#)

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## **Course Description:**

This course will be an exploration into the fundamentals of landscape design with particular attention to integrating both existing and new buildings sustainably into their landscapes and with a view to reducing maintenance needs. Students investigate sustainable design strategies that address the ecological, water, energy and food system links between buildings and their supporting sites, as exemplified by the LEED (Leadership in Energy and Environmental Design) rating system and Sustainable Sites Initiative. Topics include: design principles and process, natural factors (e.g. topography, soils, vegetation), green roofs, green walls/vertical gardens, rainwater collection systems, native planting, edible landscapes and permaculture, sustainable forestry practices, post-industrial landscapes, and the human use of outdoor spaces. Emphasis will be placed on cost saving techniques for creating self-sustaining, low maintenance sites. Many real world examples will be discussed.

This will be an introductory course focusing on the theory and practice of sustainable landscape design and planning. It is assumed that students have little or no background/professional experience in design or planning. The first half of the course will rely primarily upon readings, lecture and discussion. A five minute long mid-term student briefing presentation will be assigned and presented online. In the second half of the course students will delve more deeply into applying the design process culminating in a focused ten minute long final design project to be presented online.

## **Course Objectives:**

- Gain understanding of sustainable landscape design principles and practices including natural and human factors
- Relate sustainable landscape/site design to energy, food and natural resource issues and the built environment
- Promote understanding of, and hone communication skills related to, professional -client relations
- Gain experience preparing a sustainable landscape plan and plan set

## **Course Structure:**

The course will be divided into nine learning modules. Most modules will be one week in length, but some will be two weeks long. Two modules will consist of student presentations, the student briefing presentation and the final design project presentation, and discussion about each presentation. Modules will typically include:

- *Weekly Summary* will provide a list of all work to be completed during each respective week of class.
- *Discussion Question* of the week will be included in Weekly Summary. Students will post responses to discussion question in “chat” format on course Blackboard website. *Discussion Question* responses will be due by 11:59 PM on Sunday of that module’s week. Instructor will post weekly discussion questions to which students will respond. Weekly discussion questions will be posted online by 12:01 PM on Monday of the week in which they are due. Online discussions will also be based upon textbook readings, lectures and/or other assigned materials

such as videos or other web-based media. Discussions will also cover student presentations and general course questions/comments.

- *Lectures* by Instructor and Guest Lecturers posted to course's Blackboard website using Wimba system for video and audio recordings. Lectures will be posted as "archives." A full module's lecture will typically consist of a series of archives.
- *Required Readings* from the course's paper textbook acquired by students, and occasionally other sources that will be posted to course's Blackboard website. Reading questions will be provided at the beginning of each module to help guide students through the required readings. Reading question answers will be provided at the beginning of the week following the reading due date. **Reading questions will appear on quizzes.** Readings will also be the subject of general discussion online in class and will be part of class participation portion of grades.
- *Optional Readings* from other resources are recommended for deeper understanding of subject matter covered.
- *Student Briefing assignment* of short duration intended to hone communication and promotional skills. The Instructor's suggested list of topics will be posted to the course Blackboard site.
- *Quizzes* – two scheduled quizzes will be given during the semester. Quizzes will draw primarily from required readings, lectures and videos.
- *Final Student Design Project assignment* of a very focused nature for a very small site or focused topic related to sustainable sites. Projects must include food-producing and/or waste reduction aspects including water usage. Also incorporate reused and/or recycled materials where possible.

## ***Tentative Schedule***

### **Week 1: Course Introduction**

- Syllabus, Course Principles and Themes, Instructor Bio  
Reading and discussion assignment: Thompson & Sorvig, Preface and Introduction
- Lecture: Course Introduction - Landscape-Energy Connections
- Video assignment: "Piano" video about change
- Student biographies (bios) posted to course classroom site

### **Week 2: Module 1, Part 1: Sustainable Site Design Overview, Part 1**

- Student Bios. Maintaining and enhancing site health through good design.  
Reading and discussion assignment: Thompson & Sorvig, Principle I: Keep Healthy Sites Healthy
- Review Student Briefing Potential Topics list provided by Instructor.
- Visualization Exercise covered in lecture due as part of weekly discussion assignment.

### **Week 3: Module 1, Part 2: Sustainable Site Design Overview, Part 2**

- What is Landscape Design? Conventional versus Sustainable Landscape Design. Maintenance based design. LEED and the Sustainable Sites Initiative. Reading and discussion assignment: Thompson & Sorvig, Principle 2: Heal Injured Sites and Principle 10: Maintain to Sustain

- Video assignment: The Willow School – Integrated Design Case
- Sustainable Sites Initiative Presentation (PDF)

**Week 4: Module 2: The Design Process & Graphic Communication**

- Introduction to the Design Process: Observation, Site Analysis and the Design Stages. Graphic communication techniques for site design and planning.  
Reading and discussion assignments: Thompson & Sorvig, Principle 4: Respect the Waters of Life; Brown & Gillespie, Introduction and Chapter 1.
- Student Briefing Assignment topics and one page description due.

**Week 5: Module 3: Natural Factors in Landscape Design**

- Introduction to natural factors in landscape design: Geology, Soils, Hydrology, Topography, Microclimate and Vegetation  
Reading and discussion assignment: Thompson & Sorvig, Principle 5: Pave Less; Brown-Gillespie, Chapters 2/3.
- Video Assignment: Site visit to urban permaculture garden of Jonathan Bates and Eric Toensmeier, Holyoke.

**Week 6: Module 4: Human Factors in Landscape Design**

- Human Factors in Landscape Design: History, Use, Location, Scale, Program and Budget. Topographical Design and Water Management – Earthwork/Grading & Drainage, Watersheds and Wetlands, Stormwater and Low Impact Design (LID) Features  
Reading and discussion assignment: Thompson & Sorvig, Principle 3: Favor Living, Flexible Materials; and Brown & Gillespie, Chapter 4, 5 & 6.
- Video assignment: Retrofitting Suburbia
- **Quiz #1 – to be submitted by end of the week**

**Week 7: Module 5: Permaculture Design & Prepare Student Briefings**

- Introduction to permaculture and regenerative design approaches.  
Reading and discussion assignment: Thompson & Sorvig, Principle 6: Consider Origin and Fate of Materials.
- Video Assignment: Site visit to UMass Franklin Commons permaculture garden, and interview with Ryan Harb.
- Prepare Student Briefings for discussion next week. Briefings due by 11:59 PM EST, Sunday, March 6th.

**Week 8: Module 6: Review and Discuss Student Briefings**

- Instructor-Student online discussion of briefings to be held during extended Instructor office hours (time to be announced). Student comments due by 11:59 PM EST, **Friday, March 11**. Please note the Friday due date, *this week only!*
- Reading assignment – New York Times Article: “When Less Was More.”

**Week 9: Module 7, Part 1: Vegetation, Microclimate & Planting Design -Part 1**

- Planting design, landscape plants and plant communities, and introduction to microclimate-conscious landscape design.

Reading and discussion assignments: Thompson & Sorvig, Principle 7: Know the Costs of Energy over Time; Brown & Gillespie, Chapters 7 & 8.

- **Quiz #2 – to be submitted by end of the week**

**Week 10: Module 7, Part 2: Vegetation, Microclimate & Planting Design-Part 2**

- Planting Design, continued. Green roofs and green walls – integrating buildings and vegetation. Invasive species management.  
Reading Assignment: Thompson & Sorvig, Conclusions and Beginnings; Brown & Gillespie, Chapter 9.
- Final Project topics and two page description due. Site photos and graphic concepts for design projects encouraged!

**Week 11: Module 8: Community Aspects of Design and Planning**

- Transition Towns approaches for community preparedness. Post- industrial landscapes.
- Video assignment: Tina Clarke, Planning Consultant/Trainer: Transition Towns
- Reading assignment: *To be announced*
- Progress report on student projects in discussion. Final design project for first group of presenters due next week!

**Week 12: Module 9, First Group: Final Student Projects**

- First group of Final Student Projects/Presentations – **10 mins each**.
- Discussion assignment: Comment on first group of presentations individually.

**Week 13: Module 9, Second Group: Final Student Projects**

- Second group of Final Student Projects/Presentations – **10 mins each**. Course wrap-up. Evaluations.
- Discussion assignment: Comment on second group of presentations individually.

**Week 14: Module 9, Completion: Discussion on Final Student Projects**

- Discussion Assignment: Final comments on presentations and the overall course due.

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**Grading:**

Class Participation/Discussion Assignments = 25% (lowest grade will be waived)

Student Briefing Assignment = 25%

Quizzes = 25%

Final Student Project/Report = 25%

## Required Textbook:

Thompson, J. William, and Sorvig, Kim, Sustainable Landscape Construction, Island Press, 2008.

## Optional (but recommended) Resources:

Brown, Robert D., and Gillespie, Terry J., Microclimatic Landscape Design: Creating Thermal Comfort and Energy Efficiency, John Wiley & Sons, Inc., 1995.

Reed, Sue, Energy-Wise Landscape Design: A New Approach for your Home and Garden, New Society Publishers, 2010.

## Course Expectations

Students can expect to put in a minimum of 8 hours per week to complete course assignments.

The course will be located and taught entirely within “Professor Benjamin’s Classroom” on the UMass Online Blackboard Vista website. The one exception to this is course required textbook, which student’s must purchase and read on their own (try Amazon.com first, but try other suppliers as well for best deals).

**When logging onto the course Blackboard site, always check “Announcements” first!! Additional assignments and other important information will be posted here!**

ANY **TECHNICAL DIFFICULTIES** ACCESSING COURSE BLACKBOARD SITE OR ANY ONLINE COURSE MATERIALS (E.G. LECTURES, VIDEOS, EMAIL) SHOULD BE REPORTED TO UMASS-AMHERST ONLINE SUPPORT AS FOLLOWS:

- **Send email to [amherstsupport@umassonline.net](mailto:amherstsupport@umassonline.net), or**
- **Call 1 (888) 300-6407 (or 216-454-1155 if unable to call a US toll-free line)**

Due to the online format’s inherent communication limitations, all interactions between students and instructor will be polite and professional following current “netiquette” standards. The vast majority of student-instructor and student-student interactions will happen via email and chat provided within “Professor Benjamin’s Classroom” on Blackboard class site. Online tone should be like professional at all times (similar to LinkedIn and not like Facebook). Instructor will be identified as “Prof. Benjamin” in all communications.

**Instructor and Student Biographies (Bios).** Instructor will post his biography and picture on course website as a standard discussion that all students enrolled in the course will see. For our first week of class, January 18-23, students will prepare a short bio (e.g. one page max) explaining why they have chosen to take the course and what they hope to get out of the course. Students should add any relevant details about their academic, professional or personal backgrounds that led them to this course. *Student bios help the instructor understand student levels with regard to course material and can greatly enrich interactions and networking opportunities within the classroom “community.”* Student photographs are welcome but not required. Student bios will be posted to the course’s Blackboard site as a standard discussion that all students enrolled in the course will see. Student bios must be uploaded by 11:59 PM on Sunday, January 23rd. New students will be added as necessary thereafter.

**Instructor Lectures** will be uploaded to the Blackboard site using the Blackboard Wimba program, which allows for the video and audio recording of lectures. Lectures will be posted to the course’s Blackboard site as “archives.” A full

module's lecture will typically consist of a series of two-three archives which should be viewed in chronological order. A single archive will typically be about 30-45 minutes in length.

**Lectures** will be available at 12:01 AM on Monday at the beginning of the week that they are assigned.

**Reading assignments** will be primarily from required course textbook. Articles will also be assigned for some modules. Any assigned articles will be posted to the course Blackboard site as links or scans by 12:01 PM on Monday of the week that they are to be read. *Readings will require thorough perusal but not necessarily a detailed reading.* Students are not expected to understand the readings in detail, but rather to show comprehension of the main concepts discussed and to provide basic examples of these concepts. For example, a central tenet of sustainable site design is to minimize site disturbance during construction. Basic examples of how to do this are to reduce earthmoving activities and to protect and/or reuse on site soils wherever possible. Students do not need a deeper understanding of the technologies of soil protection or reuse but are certainly encouraged to explore these details more thoroughly on their own or as part of their briefings or final presentations.

**Additional assignments** will include videos and various weblinks to view and discuss in class. *Please note that all assignments are not necessarily shown on this Syllabus. Any additional assignments will be posted on Blackboard by 12:01 PM on Monday of the week they are to be viewed. Additional assignments will **not** have specific questions associated with them but a general review of the material is required.*

**Students' discussion question responses** will be due by 11:59 PM on Sunday at the end of the week for which the lectures and readings are assigned. Discussions will occur in the form of emails or chat on the course's Blackboard site and should be thought of as the online equivalent to "live" discussions in class. Discussion comments should be concise, to the point and thoughtful. When responding or referring to previous instructor or student comments, "Ditto" will NOT be an appropriate response, but rather providing a reason for supporting or adding to previous comment(s) will be acceptable. Expanding in a relevant way upon material covered in lectures, reading or other assignments and discussions to date is highly encouraged! Please use spell check for spelling and grammar!

**Instructor's discussion feedback** will be provided by 12:01 PM on Thursday of the week following the discussion due date.

**Student Presentations.** Presentation assignments will include: 1) Briefing; and 2) Final Project. Presentations will consist of at minimum a written and graphic presentation. The written presentation must consist of one of the following (pick only one):

- Word/PDF document. 1- 3 pages. Include a summary of your position & bullets (1 for each point)
- Powerpoint Presentation. As many slides as needed to illustrate summary position & (bullet) points

In addition, students may add an audio component to their presentation by using WIMBA Voiceboard tools (see below).

**Student Briefing Assignment.** Students will give a five minute virtual discussion or presentation on topic related to sustainable landscape design, planning and energy and/or their term design project. *Use the Instructor's suggested list of ideas for briefing topics or come up with your own.* The purpose of the briefing is to efficiently explain the main points of the topic to inspire the listener to want more! Students should sell an idea as if you were a professional Designer and the class is your client or prospect. Summarize what you've learned. Be concise and to the point! Remember, most people have short attention spans.

Briefings will be presented in Word/pdf or powerpoint format. An audio voiceover, similar to course lecture recordings, is encouraged but not required. Students who choose to include voiceover will be assigned a "voiceboard" folder on

Blackboard in Wimba for preparing and saving briefings. Briefings will be saved to Blackboard as single documents or as Wimba archives (if including audio). Briefings must include text and some form of graphic component (e.g. photos, pictures, drawings, etc.). Graphics should be embedded in the primary text document. Students may include short video segments, as well, but briefings must have some text and spoken communication. *Credit yourself and any outside sources you have used for your research and presented materials.*

Remember, the entire briefing presentation, including voiceover, should be *limited to five minutes!*

**Student Final Design Projects.** Projects will be very focused in nature taking a maximum of *ten minutes to present.* Ideally student final design projects will emerge, at least in part, from the student briefing topic. For example, a briefing on Victory Gardens of the 1940s could inform a final design project for a community garden. However, the final design project may have no connection to the briefing. *Above all, have fun with this project and show your inspiration!*

The final design project should give the student a taste of how to synthesize site information -- the natural and human site factors discussed in lectures, readings and elsewhere -- into inspired yet realistic and practical sustainable solutions to address the site's challenges and opportunities. Students will prepare a *simple* plan set for their site designs consisting of, at minimum, a site analysis plan and a site design plan. Plan graphics will be guided by graphics discussed in lectures, shown in readings, and in other useful sources posted on the course's Blackboard site. Students are encouraged to include plan views (looking down on the site) and section/elevation views (looking at the site and buildings from various sides). Providing additional information such as construction details or product and/or material specifications/images and sources for materials selected will be highly encouraged!

As with the briefings, student will prepare final presentations in Word/pdf or powerpoint format with *optional* audio voiceovers. Presentation will again be posted to individual student WIMBA voiceboard folder on Blackboard. Final presentations will be saved to Blackboard as single Wimba archives.

*Remember, the entire final project presentation, including voiceover, should be limited to ten minutes!*

**Late Assignment Policy.** Students will be allowed one late assignment posting for discussion assignments only. This one late assignment allowance is for the entire semester. Late assignments must be posted by 11:59 PM on Wednesday of the week following the assignment's original due date. **NO OTHER LATE ASSIGNMENTS WILL BE ACCEPTED EXCEPT UNDER EXTREME CIRCUMSTANCES.** Requests for late assignments must be communicated via email to the Instructor at least one full day prior to their due date. *Late student briefings or final projects will NOT be accepted!*

**Instructor's regular online office hours by email appointment only: Tuesdays, 9-11 AM, Eastern Standard Time (EST) – Weekly time changes will be announced week before. Alternate office hour appointments scheduled by email.**

**To register for spring 2013 go to [REGISTRATION](#)**

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**Thomas S. Benjamin, RLA, LEED-AP BD+C**  
39 Kingsley Avenue, Haydenville, Massachusetts 01039  
(413) 687-1135, benjamintom1@gmail.com  
*Registered Landscape Architect: MA, CT, RI, NY, NC & VA*

**SUMMARY:** Experienced Landscape Architect with diversified experience in low impact design and planning from concept through construction and monitoring. Demonstrated success in:

- Sustainable Planning and Design
- Project Management and Budgeting
- Scheduling/Construction Oversight
- Presenting/Teaching/Outreach
- Environmental Permitting
- Resource Conservation
- Cross Functional Teams
- Client Relations and Public Process

### **PROFESSIONAL EXPERIENCE:**

**Landscape Architect/Sustainable Designer**, Regenerative Design Group, LLC 2010-Present

Guide client transformations from conventional to sustainable landscape models. Promote plant community/soil restoration, water conservation and productive use from concept through maintenance. Lead Designer for state-of-the-art 17 acre organic community garden utilizing permaculture principles. Prepare detailed plans, specifications and estimates for various co-housing/ag-based communities.

**Sustainability/Energy Consultant**, Environmental Compliance Services Inc. 2009-Present

Assess sustainability of businesses, institutions and communities, and prepare plans for reducing operating costs using systems approach. Plans focus on energy, solid waste, water, emissions, and transportation systems, and highlight financial incentives for implementation. Create local composting programs. Market cutting edge services to clients such as academic institutions and senior facilities.

**Senior Landscape Architect**, Vanasse Hangen Brustlin, Inc. (VHB) 2005-2008

**Senior Project Landscape Architect**, Tetra Tech Rizzo (Tt-Rizzo) 1997-2005

Developed and maintained effective client partnerships; provided both internal and external consulting, achieving a track record for high customer satisfaction and retention. Projects included:

- Prepared master plan for five mile corridor (Lexington, MA) under consideration for proposed commuter bikeway. Half of corridor within NSTAR utility right-of-way, wetlands and national historic park. Presented recommendations to NSTAR and local agencies at public hearings.
- Project managed restoration component of a series of implemented public projects (Cambridge, MA) that protected water supply and improved recreational facilities and access. Included extensive revegetation and soil replenishment solutions. **Project won B.S.L.A. Honor Award.**
- Designed daylighting of one mile river section and creation of riparian habitat that mitigated wetland impacts and provided flood storage for new football stadium (Foxboro, MA). Prepared complex permits and scheduling. **Project won U.S. E.P.A.'s Environmental Merit Award.**
- Created low maintenance landscape designs for medical center's transition from conventional to sustainable model. Implemented rain and healing gardens, access way and signage upgrades.



## Resume of Thomas S. Benjamin, Page 2

### EDUCATION:

Renewable Energy/Energy Efficiency Certificate- Greenfield Community College 2010  
M.L.A. Master of Landscape Architecture- University of California  
M.C.R.P. Master of City and Regional Planning- University of California  
B.A. Environmental Planning- University of Wisconsin

### PROFESSIONAL DEVELOPMENT:

- Climate Change
- Stormwater Management
- Project Management
- Green Roof/Wall
- Green Communities Program
- Solar PV and Thermal Systems

### SELECTED PRESENTATIONS:

- Boston Society of Civil Engineers, Boston, 2009
- Ecological Landscaping Association, 2008 & 2009
- Amer. Soc. of Landscape Architects, 2008, 2003 & 1999
- Greenbuild, Boston, 2008
- Boston Society of Architects, 2010
- Harvard Discovery Program, 2007

### SELECTED PUBLICATIONS:

"Back to Basics: Restoration Project in Cambridge, Mass., Returns Natives to Free Pond," online at Revitalization e-Digest, November 2006.

Benjamin, Thomas S., Green, Amy, and Deshais, Ken, "New Light on the Neponset," *Landscape Architecture Magazine*, April 2003.

Authored a chapter entitled *Natural Resource Stewardship Planning and Design: Fresh Pond Reservation* for the book *Handbook of Water Sensitive Planning and Design*, edited by Dr. Robert L. France, CRC Press LLC, 2002.

Benjamin, Thomas S., "Fort Devens Project," *Erosion Control*, January/February 1997.

### TEACHING/TRAINING:

Instructor, UMass-Amherst and Greenfield Community College, Sustainable Sites, 2009-present.

### COMMUNITY INVOLVEMENT:

Fundraiser and Board Member, Grow Food Northampton, Northampton, Massachusetts, 2010-11.