ARC6911 Section XXXX (Class# XXXXX)  
Spring 2024  
Architecture and Climate  
Hybrid Seminar  
Zoom and Face to Face  
Zoom for online and off-campus programs.  
Face to Face for UF Gainesville Students  
Thursdays | Periods 7–9  
Room TBA  
Sustainable Architecture: Architecture and Climate  
Instructor: Dr. Vandana Baweja, Associate Professor, School of Architecture  
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Tel:352.294.1465  
Office: 242 Architecture  
Office hours : TBA  

Short Description  
The dominance of climate change and the carbon cycle in the development of Sustainable Architecture has signified a major shift in the relationship between climate and architecture. This course examines how anthropogenic climate change became a global architectural concern and how architects have responded to shifting environmental concerns, particularly in Europe. Prior to the ascendancy of climate change and the carbon cycle as metrics of the relationship between buildings and the environment, the architectural environmental paradigms of the 1950s to 1980s were predicated on architecture as mediator between the human body and the outdoor climate. Climate was viewed as a stable environmental actor, which determined architecture. As it became apparent that buildings, as one of the key consumers of fossil fuels, contribute significantly to climate change, the relationship between architecture and climate went through a paradigmatic shift—from one in which climate was a determinant of architectural metrics, to one in which architecture became an active agent in the transformation of global climatic systems.  

Detailed Description  
The dominance of climate change and the carbon cycle in the development of Sustainable Architecture has signified a major shift in the relationship between climate and architecture. This course examines how anthropogenic climate change became a global architectural concern and how architects have responded to shifting environmental concerns, particularly in Europe. Prior to the ascendancy of climate change and the carbon cycle as metrics of the relationship between buildings and the environment, the architectural environmental paradigms of the 1950s to 1980s were predicated on architecture as mediator between the human body and the outdoor climate. Climate was viewed as a stable environmental actor, which determined architecture. As it became apparent that buildings, as one of the key consumers of fossil fuels, contribute significantly to climate change, the relationship between architecture and climate went through a paradigmatic shift—from one in which climate was a
determinant of architectural metrics, to one in which architecture became an active agent in the transformation of global climatic systems.

Climate change and its metrics—energy consumption and the carbon cycle—have come to dominate contemporary discourses on sustainable architecture and design. Competing and overlapping design paradigms and environmental assessment methods such as—Cradle to Cradle, Bioclimatic Architecture, Biomimicry, Passive and Low Energy Architecture (PLEA), Ecological Design, Net Zero buildings, and Zero-carbon building, Leadership in Energy and Environmental Design (LEED), Building Research Establishment Environmental Assessment Method (BREEAM), LEVELS, and Passivhaus—promise sustainability. These design paradigms are targeted towards sustainable development through a reduction in greenhouse gas emissions and accomplishing efficiencies in the use of energy and materials. The larger goal is to attain an ecological balance between consuming the earth’s finite resources and its regenerative capacity. Sustainable development was first defined in the Brundtland Report, titled *Our Common Future*, as development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, Gro Harlem and World Commission on Environment and Development. *Our Common Future*. Oxford; New York: Oxford University Press, 1987).

Since the 1990s, as sustainable development emerged as the new paradigm of economic growth based on the carrying capacity of the earth, the term “sustainability” entered the academic discourse and has had an enduring impact on several disciplines in academia. Although the Brundtland Report and the blossoming of the sustainability movement helped to bring awareness to many sectors of society, including architecture and design, the concern for environmental building dates back to postwar period. The growth of the sustainability movement combined with the realization that humans were affecting the climate through the use of fossil fuels (including those used in the built environment) further pushed the architectural world toward sustainable design. Thus, since the late 1980s and early 1990s, sustainable architecture has become an articulated value, and is now regularly associated with the carbon cycle, global ecology, and various facets of sustainability.

Prior to the ascendancy of climate change and the carbon cycle as metrics of the relationship between buildings and the environment, from 1950s to 1980s engineers and architects developed solutions in response to global environmental concerns. Events and phenomena such as—the decolonization and modernization of the tropics, the Cold War, the threat of nuclear holocaust, the Vietnam War, space exploration, the countercultural movement of the 1960s, the civil rights movement, the feminist movement, the OPEC oil embargo 1973–4, rising population, and poverty—transformed public consciousness about the human impact on the environment. In response to environmental problems such as—pollution, energy scarcity, social injustice, poverty, agricultural deficit, ecological catastrophe—that dominated the public consciousness from the 1950s to the 1980s, architects responded with a range of paradigms within different cultural, ideological, and technological contexts. Technocrats and architects and devised resource and energy efficiency, which relied on the
optimization of architecture in response to—climate, fossil fuel consumption, and resource conservation.

The architectural solutions that promised almost closed loops of resources and energy were predicated on architecture as mediator between the human body and climate. Climate was viewed as a stable environmental actor, which determined optimum architecture for a given place. As it became apparent that buildings, as one of the key consumers of fossil fuels, contribute significantly to climate change, the relationship between architecture and climate went through a paradigmatic shift—from one in which climate was a determinant of architectural metrics, to one in which architecture became an active agent in the transformation of global climatic systems.

This course will chart the development of postwar architecture to trace how environmental discourses inform design paradigms; and inversely, how design disciplines have been consequential in the transformation, stewardship, and understanding of the environment. This class covers the intersection of design and environmental histories from the 1950s to now, with an emphasis on Europe.

COURSE PRE-REQUISITES / CO-REQUISITES
None

TEXTBOOK
There is no required textbook. Required readings will be placed on Canvas/E-learning as PDF files.

CLASS REQUIREMENTS FOR STUDENTS
1. Attend class regularly.
2. Each student is expected to present readings as assigned. You are expected to present six readings in the entire semester.
3. Participate in class discussions.
4. Complete a final project or paper.

Attendance Policy, Class Expectations, and Make-Up Policy
Attendance will be assessed via roll call and class participation. Excused absences are consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation. Excused absences and missed assignments are consistent with UF attendance policy.

CLASS PARTICIPATION SCALE
Your participation in class discussions will be evaluated using this scale for points towards your final grade for the semester.

100 = Student often contributes thoughtful comments and insights based on class materials and has been a catalyst for other student comments as well as instructor
response; AND listens to the comments and insights of others with respect and attention.

80 = Student **regularly** contributes thoughtful comments and insights based on class materials and **sometimes** results in student as well as instructor response (overall, quality counts more than quantity); AND listens to the comments and insights of others with respect and attention.

60 = Student **sometimes** contributes comments and insights based on class materials, more often at instructor's prompting; generally polite but could be more engaged in class discussions.

40= Student **seldom** contributes comments and insights of her/his own volition; comments not always relevant to materials or discussion at hand; needs to pay more attention to the contributions of the instructor and peers.

0= Student **rarely** and reluctantly contributes to class discussions; comments minimal and/or disrespectful; often noticeably disinterested in instructor's and peers' contributions.

**Students Requiring Accommodations**
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting [https://disability.ufl.edu/students/get-started/](https://disability.ufl.edu/students/get-started/).

It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

**Course Evaluation**
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/.

**Class Demeanor**
Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom.

**University Honesty Policy**
UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work
submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

**Counseling and Wellness Center**
Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Academic Resources
**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling.

**Library Support**, Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.


**Student Complaints Campus**

**On-Line Students Complaints**

**Evaluation of Grades**

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<th>Assignment Group</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Reading Responses</td>
<td>30%</td>
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<tr>
<td>Proposal</td>
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<tr>
<td>Presentations</td>
<td>10%</td>
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<tr>
<td>Final Project</td>
<td>30%</td>
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<tr>
<td>Attendance</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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**Grading Policy**
The following is given as an example only.

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<thead>
<tr>
<th>Percent</th>
<th>Grade</th>
<th>Grade Points</th>
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<tbody>
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<td>4.00</td>
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<tr>
<td>Percent</td>
<td>Grade</td>
<td>Grade Points</td>
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<tr>
<td>87.0–89.9</td>
<td>A-</td>
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<tr>
<td>84.0–86.9</td>
<td>B+</td>
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<tr>
<td>81.0–83.9</td>
<td>B</td>
<td>3.00</td>
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<tr>
<td>78.0–80.9</td>
<td>B-</td>
<td>2.67</td>
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<tr>
<td>75.0–79.9</td>
<td>C+</td>
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<td>72.0–74.9</td>
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<tr>
<td>69.0–71.9</td>
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<tr>
<td>66.0–68.9</td>
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<td>0–59.9</td>
<td>E</td>
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</tbody>
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**Thursday, January 11th, 2024**  
**Week 1: Introduction**

**Thursday, January 18th, 2024**  
**Week 2: Geometries of the Sun—Heliodon, Sun Paths, and Orientation.**


**Thursday, January 25th, 2024**  
**Week 3: Architecture and Climate: Tropical Architecture, UK**


Thursday, February 1st, 2024

Week 4: The Club of Rome, 1968: Earth’ Carrying Capacity


Thursday, February 8th, 2024

Week 5: Architecture-Climate and Appropriate Technology: The Institut fur Tropenbau [The Institute for Tropical Building (IFT)] Bavaria, Germany

Thursday, February 15th, 2024
Week 6: Countercultural Environmentalism and Grahame Caine’s Eco-House, London, UK


Thursday, February 22nd, 2024
Week 7: Autonomous House, University of Cambridge, UK.


Thursday, February 29th, 2024
Week 8: OPEC Embargo and Energy Efficient Architecture


**Thursday, March 7th, 2024**

**Week 9: Sustainable Development and German Forestry**


**Thursday, March 14th, 2024**

**Spring Break**

**Thursday, March 21st, 2024**

**Week 10: EU, Global Governance, and Climate Action**


Thursday, March 28th, 2024
Week11: Environmental Assessment Methods Passivhaus [Germany]


Thursday, April 4th, 2024
Week12: Zero Carbon Buildings and LEVELS


Thursday, April 11th, 2024
Week13: Net Zero Buildings

Norwegian proposal for a passive house standard (Standard Norge 2010)


Thursday, April 18th, 2024
Week 14: Final Presentations