Term-I (2018-19)

Faculty Profile

Course title- Regenerative Design

Daniel S. Pearl

He is Co-founder and Current Partner at the architecture firm, L'OEUF s.e.n.c. (L'Office de l'éclectisme urbain et fonctionnel) from 1992 to present. His firm is with a broad and diversified architectural practice. In recent years, L'OEUF's partners have expanded to include Bernard Olivier and Sudhir Suri. Daniel is member of the Order of Architects of Québec. Daniel is LEED accredited Professional (Leadership in Energy and Environmental Design) since 2004. He has been half-time Professor, School of Architecture, Université de Montréal, 2001-2017.

As a practitioner, Daniel has been involved in and has led numerous design charrettes from individual scale buildings to sustainable community plans for 10,000 people. In February 2017, L'OEUF was named a Social Design Honoree for the Curry Stone Social Design Circle Prize. In 2006, L'OEUF was awarded the Global Bronze award by the HOLCIM Foundation. In December 2012, L'OEUF was awarded two Canadian Architect Awards of Excellence. Daniel's academic research has involved theoretical explorations investigating IDP from local building designs, to green infrastructure, to sustainable neighbourhoods.

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ANANT FELLOWSHIP
SOLUTIONARIES FOR THE BUILT ENVIRONMENT

REGENERATIVE DESIGN: *EMBRACING CAMPUS LIVING-LEARNING AND BEYOND*

Faculty Name: **Professor Daniel S. Pearl**
Assistants: **Suzanne Deschamps, Ashish Shakuniya and Edith Beauvais-Sauro**
Guest architect: **Nandan Balsavar**
Resource person: **Vrushti Mawani**
Number of credits: 1

1) Course brief / Abstract:

"The changing relationship between the campus- both academic and corporate- and the city is transforming urban realities. Worldwide, universities and their host cities are evolving into "knowledge cities". University and corporate campuses thereby not only take on a central role for the cultural, economic and social development of the city, they are also establishing themselves as laboratories for a new Denkkultur." Kerstin Hoeger, "Campus and the City" (2010)[1]

WHAT:
Anant University is aiming to become one **of the most advanced "21st Century Living-Learning Community" experiments** - a 'living Laboratory of Sustainability' - which will draw upon it's unique culture, climate and context to inform and guide its development, innovative partnerships and community engagement.

WHY:
Today, with so many buzz-words flying around - *Sustainability, Resilience, Community Engagement,* and most recently, *Regenerative Design* - what does it all really mean and **why build a *"Living-Learning Community"* in the suburbs of Ahmedabad?**

"This is the moment to reconceive the campus not as a discrete community set apart from others but as an urbanity capable of engaging both new forms of cities and city living brought about in physical and virtual space... such a concept of urbanity cannot be created solely within the confines of the university's walls." Sharon Haar, "The City as Campus" (2011)[2]

HOW:
Passive Green Buildings such as B.V. Doshi's *Vastu Shilpa Foundation* have already been masterfully designed and built in Ahmedabad over 30 years ago and Doshi himself was inspired by *master-builders* from centuries earlier, so the more pressing question is; **how can we jump scale from 'Green Buildings' to 'Natural Infrastructure', to 'Sustainable Neighbourhoods' without being 'prescriptive' or 'formulaic'.**

With Whom:
Anant's 2018-19 FELLOWS – freshly immersed (thrown) into the centre of unique Fellowship program – will be asked to pose the most difficult questions, to evaluate, to invent, and, most

[1] https://www.campuswithoutboundaries.com/?page_id=2
[2] https://www.campuswithoutboundaries.com/?page_id=2

importantly, **to envision** how 'Campus Living' can embrace living and working, studying and playing, and, **all while engaging with its neighbouring communities.**

> ***What's Possible?***
> *People are the city. People make the city. And every city has a stake in the health and safety of its populace, the quality of its education system, the state of its economy, the impact of climate change, the need for infrastructure, and the engagement of its citizens as active participants in their future.* ***These shared concerns serve as a starting point*** *for envisioning cities that are responsive to their people and ever-changing conditions.* ***They provide a foundation for engaging with existing assets, places, and relationships to imagine what is possible.*** *They also act as touchstones that cities can return to as they evaluate and continue to shape their civic commons over time.*
> *Studio Gang Architects, "Civic Commons - Reimagining Our Cities' Public Assets " (2011)*

Through Which Lens Will Students Explore these Questions:
Drawing upon the (UEAB) Urban Ecology Agency of Barcelona's *'Eco-systemic Urbanism Framework'* as the primary lens, students will first be exposed to UEAB's intentional Urban Model - which promotes **compact morphology, complex organisation (in terms of mixed uses and biodiversity), metabolic efficiency and social cohesion.** Next, they will be challenged to look more closely at these four key axes and how they best act in synergy – both within and beyond the campus, so as to support and interact with their neighbouring communities (for Bopal, Manipur and Godhavi).
This exploration will include designing regenerative processes (from public realms, to natural infrastructure to urban design), while addressing 15 key principles (see annex 1 below), at multiple scales and over a variety of timeframes (2025 and 2050).

> *Inspired by Christopher Alexander's book, 'A Pattern Language', our project began to explore the components of sustainable communities that can address many urban challenges. Within the context of the Institute's Living Community Challenge (LCC), an investigation of new patterns yielded powerful synergies. These patterns—or strategies—can work at different scales, from the building and block up to the neighborhood level, and even for the city and region.*
> *Pg. 7, International Living Future Institute. (2015).*[3]

A second lens, that is powerful and poetic in its own right, *Living Community Patterns* and the *Living Community Challenge* from the *International Living Future Institute (ILFI),* will be used to explore synergies amongst key principles and concepts the UEAB's *'Eco-systemic Urbanism Framework'*.

2) Course Objectives:

Over the next decades, India will need to prepare for massive migration to its urban settings, and current predictions foresee the creation of 160 new cities the size of Chicago. **With this « scaling up », will come remarkable opportunities for Regenerative Community Design**, where professionals and a diverse range of stakeholders, from a myriad of backgrounds, will be encouraged to think, act and collaborate beyond the more familiar boundaries of multidisciplinary or interdisciplinary approaches - **towards transdisciplinary research and design**[4]. This course will embolden students to go beyond the conventional science of *Sustainable Design* - where the **new production of knowledge related to '*Regenerative Neighbourhood Design*'** will emerge from the

[3] McLennan, Jason, *'LIVING COMMUNITY PATTERNS: Exploratory Strategies for a Sustainable San Francisco?',* pg.7 of 62, (ILFI) International Living Future Institute (2015).

[4] … instead of reducing reality to the parts researchable at the intersection of multiple disciplinary perspectives**, transdisciplinary research includes at once what stands between disciplines, across disciplines and beyond any discipline,** thus combining all the processes of multidisciplinarity and interdisciplinarity.
Després, Carole, Vachon, Geneviève, & Fortin, Andrée. (2011).

multiple challenges of the course brief, which will heavily rely on intuition, debate and uncertainty, alongside science, culture and practical reasoning.

More specifically, course objectives include:

- **understanding the importance of a holistic framework** (Ecosystemic Urbanism);
- **understanding how critical it is to connect a community living-learning campus to its neighbouring urban fabric;**
- **how to anticipate significant growth and resilience over time;**
- **reaching beyond inter-disciplinary work towards trans-disciplinary collaboration.**

EXPLORING VIA FOUR MAJOR THEMES

- **COMPACT MORPHOLOGY**
  - **Balance between neighbourhood's *Ecological Footprint* (enough density to support Rapid Transit) and its *Carrying Capacity* (sufficient fresh air, water, sun, nature)**

- **COMPLEX ORGANISATION (IN TERMS OF MIXED USES AND BIODIVERSITY),**

A complex system is composed of multiple, often heterogeneous parts that selectively interact with each other, giving rise to a coherent organization with its own attributes, behaviours and trajectory. Cities are superlative examples of complexity, where different actors interact with each other and their environment to collectively (and often unconsciously) compute daily traffic flows, market prices, long-term land use arrangements and resource-extraction patterns. Fluid decisions made today solidify into the fixed built environment of tomorrow, which in turn shapes a new generation of interactions.
A complex system is adaptable and robust, retaining its integrity and coherence over long periods of time, even when its constituent parts cease to exist (e.g. people leave the city, buildings are demolished, new officials are elected). The system's ability to self-organize despite constant change relies on the selective and decentralized flow of matter, energy and information among its parts.
Pg. 458, Zellner, Moira & Campbell, Scott D. (2015).[5]

- **METABOLIC EFFICIENCY (and Living Community Patterns)**

As many parts of Asia are currently experiencing severe and repetitive weather occurrences in recent years, the potential for 'natural infrastructure' to complement, and eventually replace 'mechanistic infrastructure', is more consequential than ever. Beyond providing effective, physical protection in reducing the impacts of flooding, heavy storm surges, excessive precipitation and subsidence, Asian communities can pro-actively build natural systems that integrate socio-economic and socio-cultural resilience while providing hope and continuity through these challenging upheavals. Integrating nature and including 'urban rewilding' into the heart of fragile urban ecosystems, through a synthesis of restoration ecology, architecture, urban planning and design, has been shown to significantly increase individual and community health and well-being, while reviving indigenous ecologies.[6]

- **SOCIAL COHESION**

Cities should open up opportunities, connect people to new people, free us from the narrow confines of tradition — in a word, the city should deepen experience. But modern cities work the opposite way:

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[5] Zellner, Moira & Campbell, Scott D., *'Planning for deep-rooted problems: What can we learn from aligning complex systems and wicked problems?',* pg.458, Planning Theory & Practice, Routledge (2015).

[6] Pearl, Daniel S, Mertenat, Céline, Beauvais-Sauro, Édith, Oliver, Amy *'REVIVING THE ROLE OF NATURE IN OUR CITIES: Exploring Synergistic Links Between Urban Ecosystems, Indigenous Cultures & their Ecologies'* DESIGN RESILIENCE IN NATURE *(pending final approval by Routledge), 2019.*

urban inequality restricts opportunity; spatial segregation isolates people into homogeneous class, racial, and ethnic groups; the public spaces of today's cities are not places for political innovation.
Richard Sennett (The Open City)[7]

3) Learning Outcomes:

- **Empathy** (need to be generous and focus on health and happiness)
  - **Giving a voice to all stakeholders – not just those with power or a loud voice**
- **Teamwork** (students will become key stakeholders in moving the Regenerative Design agenda forward beyond individual siloed disciplines)
  - **IDP (Integrated Design Process) – importance of working together**
- **Problem-Solving**
  - **exposure to the main 4 themes and 15 principles, how to take a theoretical vision and ground it in Intentional Synergies**
  - **how to connect integrative loops across scales and boundaries**
  - **applying synergies through combining indicators and/or key principles including socio-economic and socio-cultural principles**

4) Schedule and Detailed Course Structure:

Day	*Session 1 (9:30-11:30)*	*Session 2 (11:45-1:00)*	*Session 3 (2:00-5:20)*
26-Sep-2018 Wednesday	Introductory Lecture and Review of course outline	Introduction of Exercise 1 and Interactive activity	
27-Sep-2018 Thursday	Advancing Exercise 1 with informal Desk Reviews	Advancing Exercise 1 with informal Desk Reviews	*Tentative visit of Bopal (to confirm)*
28-Sep-2018 Friday	Advancing Exercise 1 with informal Desk Reviews	Advancing Exercise 1 with informal Desk Reviews	
1-Oct-2018 Monday	Review of exercise 1	Review of exercise 1	Presentation of Exercise 2, lecture and Interactive activity
3-Oct-2018 Wednesday		lecture related to exercise 2	Advancing Exercise 2 with informal Desk Reviews
4-Oct-2018 Thursday	*Tentative site visit (to confirm*	*Tentative site visit (to confirm*	

[7] https://www.youtube.com/watch?v=7PoRrVqJ-FQ

Day	*Session 1 (9:30-11:30)*	*Session 2 (11:45-1:00)*	*Session 3 (2:00-5:20)*
8-Oct-2018 Monday		lecture related to exercise 2	Advancing Exercise 2 with informal Desk Reviews
9-Oct-2018 Tuesday	Advancing Exercise 2 with informal Desk Reviews	Advancing Exercise 2 with informal Desk Reviews	
10- Oct-2018 Wednesday		Formal Review of exercise 2	Formal Review of exercise 2

5) Assignment Brief and Evaluation criteria*:

There will be two exercises and each will have its own specific learning objectives, and they will be communicated (and handed out) as each exercise is introduced.

Class Participation	*Weightage* 20 %	*What constitutes class participation:* • Active involvement and critical thinking in seminars, informal classroom activities, site visits, lectures, informal reviews.		
Assignment 1(a)	*Weightage* 10 %	*Individual/ Group* groups of 4 or 5	*Brief of assignment* Develop a vision for *CAMPUS LIVING-LEARNING AND BEYOND*	*Form of output:* Drawing & Graphic Presentation
Assignment 1(b)	*Weightage* 10 %	*Individual/ Group* groups of 4 or 5	*Brief of assignment* Preliminary Diagnostic and potential synergies	*Form of output:* Written text, with diagrams and drawings as required.
Assignment 2(a)	*Weightage* 50%	*Individual/ Group* Assignment in groups of 4 or 5	*Brief of assignment* Develop a preliminary masterplan vision within and beyond the Anant Campus, linking key public realm spaces, *'living community patterns'* and key infrastructure for 2025 and 2050.	*Form of output:* Oral presentation supported by drawings and any form of presentation (Physical Model Digital Mode,l Film or Visual media), as required.
Assignment 2(b)	*Weightage* 10 %	*Individual/ Group* individual	*Brief of assignment* Final Diagnostic and explanation of regenerative neighbourhood design and key synergy strategies	*Form of output:* Written text, with diagrams and drawings as required.

6) Grading Rubric:

Anant Fellowship Grading Rubric

Grade	Grade Point	Numerical Score
A	4	90-100
A-	3.7	85-89
B+	3.3	80-84
B	3	75-79
B-	2.7	70-74
C+	2.3	65-69
C	2	60-64
C-	1.7	55-59
D+	1.3	50-54
D	1	45-49
D-	0.7	40-44
F	0	<40

What Grades Mean

• A, A– : Excellent quality and full mastery of the subject. A grade of 'A' means extraordinary distinction.

• B+, B, B– : good comprehension of the module material, a good command of the skills needed to work with the module material, and the Fellow's full engagement with the module requirements and activities.

• C+, C, C– : adequate comprehension of the module material and the skills needed to work with the module material. Indicates the Fellow has met the basic requirements for completing assigned work and participating in class activities.

• D+, D, D– : barely satisfactory work indicating minimal command of the module materials and minimal participation in class activities.

• F : unsatisfactory and unworthy of module credit towards the degree.

7) Samples of expected work:

Samples of submissions expected are included with the individual assignment brief.

8) Reading list and references:

There are six required readings (each already sent to the students in advance).

(1) CHARTER FOR THE ECOSYSTEMIC PLANNING OF CITIES

(2) Working Regeneratively Across Scales

(3) The role of early-phase mining in reframing net-positive development

(4) Towards a Social-Ecological Urbanism

(5) Campus City Project

(6) Implementing Transdisciplinarity Architecture and Urban Planning At Work

Additional readings and references are included with the individual assignment brief.

Annexure

Annex 1

(from the **CHARTER FOR THE ECOSYSTEMIC PLANNING OF CITIES** : ***Charter for designing new urban developments and regenerating existing ones,*** *page 7 of 63)*

1. COMPACTNESS vs. DISPERSION: Reducing land use by increasing the proximity and critical mass of inhabitants and legal persons.

2. DECOMPRESSION vs. COMPRESSION: Urban equilibrium.

3. ACCESSIBILITY vs. PRIVATE MOBILITY: Alternative transport to cars, guaranteeing that all citizens can access the city.

4. CITIZEN vs. PEDESTRIAN: Uses and rights in the public space.

5. HABITABILITY IN THE PUBLIC SPACE: Controlling environmental variables.

6. COMPLEXITY vs. SIMPLIFICATION: Increasing urban complexity with a greater and wider range of legal persons.

7. HYPERCONNECTIVITY: Information flows in the digital era.

8. GREEN SPACE vs. ASPHALT: Increasing green space and urban biodiversity.

9. SELF-SUFFICIENCY vs. DEPENDENCY: Moving towards energy sufficiency.

10. WATER SELF-SUFFICIENCY WITH NEARBY AND RENEWABLE RESOURCES: Conservation in the water cycle.

11. REDUCE, REUSE, RECYCLE vs. WASTE: Moving towards self-sufficiency in terms of materials.

12. ADAPTING TO AND MITIGATING THE IMPACT OF CLIMATE CHANGE.

13. SOCIAL COHESION vs. SOCIAL EXCLUSION: Moving towards social cohesion between a mix of income brackets, cultures and ages.

14. UNIVERSAL ACCESS TO HOUSING IN MORE SUSTAINABLE BUILDINGS.

15. BALANCED RESOURCES AND DISTRIBUTION OF FACILITIES

Annex 2

The footnote on *Transdisciplinarity* comes from section 3.2 of an article called: "Implementing Transdisciplinarity: Architecture and Urban Planning at Work", which can be downloaded at: *https://www.researchgate.net/publication/226153002*

The original source is: Després, Carole, Vachon, Geneviève, & Fortin, Andrée. (2011). *Implementing transdisciplinarity: Architecture and urban planning at work Transdisciplinary knowledge production in architecture and urbanism* (pp. 33-49): Springer.

Section 3.2 from the article above: ***Defining Transdisciplinary***

In what ways does transdisciplinarity differ from the more familiar interdisciplinary and multidisciplinary concepts? Indeed, the words multidisciplinary and interdisciplinary have been used consistently to denote scientific research that involves a number of disciplines. In multidisciplinary research, each discipline works in a self-contained manner, while in interdisciplinary research an issue is approached from a range of disciplinary perspectives integrated to provide a systemic outcome (Bruce et al., 2004). In contrast, the word transdisciplinary is not confined to scientific research and has been used since the 1970s in debates about teaching and professional practice. The Latin prefix "trans" denotes transgressing the boundaries defined by traditional disciplinary modes of enquiry. For German philosopher Philip W. Balsiger (2004), the focus of transdisciplinarity is on the organisation of knowledge around complex heterogeneous domains rather than on the disciplines and subjects into which knowledge is commonly organised. While research groups are generally defined as multidisciplinary in view of the diversified nature of their members' disciplinary education, the research conducted can be either multi, inter or transdisciplinary, the latter two implying that the final knowledge is more than the sum of its disciplinary components (Després, Brais, & Avellan, 2004). French environmental psychologist Thierry Ramadier (2004) makes a distinction between the outcome of transdisciplinary research as "knowledge coherence" and the outcome of interdisciplinary research as "knowledge unity". For this author, instead of reducing reality to the parts researchable at the intersection of multiple disciplinary perspectives, transdisciplinary research includes at once what stands between disciplines, across disciplines and beyond any discipline, thus combining all the processes of multidisciplinarity and interdisciplinarity. For Balsiger (2004), implementing transdisciplinarity necessitates the replacement of strict research protocols with flexible methodological practices that stem from concerted dialogue around societal problems between academics, policy decision-makers and laypeople. Figure 3.1 recapitulates what Lawrence and Després (2004) identify as the recurrent characteristics of transdisciplinary research from the work of numerous researchers with various disciplinary backgrounds.[2] These are the dimensions of transdisciplinarity endorsed in this chapter.

1) Mode of knowledge production characterised by its hybrid nature, non-linearity and reflexivity, transcending any academic disciplinary structure.
2) Tackles complexity in science and challenges knowledge fragmentation, dealing with research problems and organisations that are defined from complex and heterogeneous domains.
3) Accepts local contexts and uncertainty; it is a context-specific negotiation of knowledge.
4) Includes the practical reasoning of individuals with the constraining and affording nature of social, organisational and material contexts.
5) Requires close and continuous collaboration between actors during all phases of a research project, through "mediation space and time".
6) Often oriented toward action, making linkages not only across disciplinary boundaries but also between theoretical development and professional practice.
7) Frequently deals with real-world topics, generating knowledge that not only addresses societal problems but also contributes to their solutions.
8) Generally aims at understanding the actual world and at bridging the gap between knowledge derived from research and decision-making processes in society.

Fig. 3.1 Characteristics of transdisciplinary research according to Lawrence and Després (2004) © GIRBa