The Ecological Revolution I

AA Diploma Unit 16
2017–2018

Building as Architecture

unit masters
andrew wai-tat yau & jonas lundberg
ABSTRACT

The Ecological Revolution I: Buildings as Architecture of New Frontiers

“How Much Does Your Building Weigh, Mr. Foster?” – Buckminster Fuller

Today, buildings are world’s largest polluting agent, accounting for around 40 per cent of global greenhouse gas emissions. And while science, technology and regulatory frameworks develop at lightning speed, the design of buildings slowly evolves – even as the complexity of construction and performative requirements increases at an exponential rate.

If the medium of architecture is building, then Diploma 16 focuses on design experimentation to explore volumetric, subtractive and projective geometries and stereotomy to provoke new sensibilities beyond surface based design techniques and outcomes or narrative experiences.

The aim is to develop a re-generative and resilient architecture for our time, capable of transforming an existing situation, adaptable to future change and able to incorporate technological inventions and innovation that support resilient lifestyles and environmental technology. The challenge, then, is the design of a complex building with a particular formal, spatial, material and experiential character integrated with a positive ecological footprint in an intense and expanding urban environment of your own choosing.

The unit’s work is organized in a reiterative manner, whereby thesis, design and output co-evolve in parallel with topical research and analysis over the year in order to develop an individual architectural design repertoire, culminating in the production of a singular large-scale physical model, a singular large-scale composite drawing and a comprehensive progress book.

Unit Staff

Andrew Wai-Tat Yau and Jonas Lundberg are members of Urban Future Organization, an international architectural practice and design research collaborative. Urban Future has won a number of international competitions and exhibited its work globally. Currently they are working on micro to macro-scale urban and architectural projects in Europe and the Far East.

OPPOSITE PAGE | Zhao Zheng | Bazaar of Well-Being, Amman, Jordan | Massing Model
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1.0 DIPLOMA UNIT 16

Diploma Unit 16 is starting its 13th year in the Diploma School at the Architectural Association School of Architecture with a new agenda but still exploiting the opportunities for rethinking and evolving the role of architecture amidst our predicament of over population and climate change, its causes and effects. We embrace the optimism and hope for the future of this new brave world that places the capacity for human, empathy, ingenuity and technology at the centre of our survival (Rifkind).

1.1 ECOLOGICAL REVOLUTION I

The Ecological Revolution I is the first year of a three year research cycle returning to the act of building as a medium of architecture conditioned by material factors. Hence, Diploma 16 considers architecture in a world that is increasingly conditioned by emergent technology and material networks. Architects are liberated from a limited palette of building materials defined by architectural heritage, a building industry slow to embrace change as well as to evolve its tradition and toolsets. Our basic set of design and representation techniques have been complemented with a vast array of new design mediums and technologies that straddle the abstract space of the digital space and the concrete, material world. The unit creatively explores the opportunities as well as the constraints of this emergent condition in an attempt to redefine the ecological footprint of the built environment and challenge conventional notions of material, scale, form and space. The aim is to develop design and research towards a “Resilient Architecture”.

1.2 ETHOS

Diploma 16 firmly believes in an architectural intelligence contributing to the evolution of our discipline by embracing new lifestyles, technology, materials and conceptions of form and space. We harbour the simple belief that the design of our physical environment, contrary to what many scholars say, can have an impact on larger issues. The evolution of new lifestyles is instrumental in shaping our symbiotic relationship to our natural and built environment, Diploma 16 develops novel material design output manifested in physical models, large scale drawings producing an architectural affect. Diploma 16 is assisting students to develop their own design repertoire and communications skills. Our explicit pedagogic aim is to work on how to evolve your abilities as architects and designers to create new content with the potential of invention and ultimately innovation. For an example in music you can be great at music theory and playing an instrument but this doesn’t mean that you are a composer. The same hold true in architecture and we aim to help your disciplinary understanding, evolve your design techniques but most of all how you intend to use your knowledge and techniques in your work as a creator of new content.

1.3 UNDERTAKING

The unit investigates how matter and geometry, fuelled by emerging instruments of design, representation and production, can inform architectural design. The aim is to help demystify the transformative capacity of architecture in the actualization of building design projects with a distinct sense of quality and aesthetic. Projects are designed and developed in collaboration with external partners, experts and consultants. Moving outside of a controlled academic environment, the studio combines speculative design research with material, technical and curatorial expertise.

1.4 TECHNIQUES & TOOLING

Model making both digitally and physically is central to the unit work as is the negotiation of material, geometry and the tool. We don’t expect everyone in the studio to acquire expert skills but to everyone to be introduced and be able to use a range of basic digital techniques. We also work on the way design material is presented and communicated for dissemination and publishing and each student needs to develop their own design log (portfolio) for the duration of the course.
BUILDING AS ARCHITECTURE

2.0 BUILDING AS MEDIUM

Today, buildings are world’s largest polluting agent, accounting for around 40 per cent of global greenhouse gas emissions. While science, technology and regulatory frameworks develop at lightning speed, the design of buildings slowly evolves – even as the complexity of construction and performative requirements increases at an exponential rate. As we are painstakingly aware, there can be architecture without buildings but even more so there can be buildings with no architecture.

If the medium of architecture is building, then Diploma 16 focuses on design experimentation arising from the negotiation and combination of new material, design and production techniques, exploring volumetric, subtractive and projective geometries and stereotomy embracing thickness and novelty over surface and convention.

2.1 RESILIENT ARCHITECTURE

The aim is to develop a re-generative and resilient architecture for our time, capable of transforming an existing situation, adaptable to future change and able to incorporate technological inventions and innovation that support resilient lifestyles and environmental technology. The challenge, then, is the design of a complex building with a particular formal, spatial, material and experiential character integrated with a positive ecological footprint in an intense and expanding urban environment of your own choosing.

2.2 MATERIAL

“How Much Does Your Building Weigh, Mr. Foster?” – Buckminster Fuller

This famous question was posed to Norman Foster by his mentor Buckminster Fuller who throughout his career was trying to reduce the weight of his buildings as exemplified by his dome over Manhattan being supported by the temperature difference between the air on the inside and the outside. With the advent of new carbon based materials we are set to revolutionize structures where self-weight of material is no longer an issue. This technical evolution is drastically going to change the way we think about scale of construction and it is already now resulting in some of the biggest structures ever made, and inevitably it will also change the types of structures and buildings we design and make. This material evolution is bound to bringing about change unprecedented since the start of iron, steel and Ferro cement construction. We would like to engage with the conversation about the new limits at the frontier of what is physically possible.

2.3 DESIGN BRIEF

The Diploma 16 brief challenges students to experiment with, design and develop as well as refine the use of new super light carbon material for construction in engineered and tooled assemblies with the potential for invention, innovation and unexpected material and spatial affects to emerge.
We have established a connection of researchers and specialists working on the Graphene project as well as engineers working on ultra-light construction. Diploma 16 is principally not going deep into the material research but we are focusing on what the new material opportunities will do to architecture at the present but also in the near future.

Diploma 16 is attempting to address the design opportunities innate to materials that can be one atom layer thick and of insignificant weight either as surfaces, fibres or coatings. As something that has no thickness it is susceptible to buckling is super strong in tension but needs to treat to work in compression (fig 1.). Consequently, one of the design problems that we are addressing is how to go from linear element to mass and volume.

2.4 BUILDING PROGRAM

We are not suggesting a building typology but rather aim for you to address the need and the purpose of classifying buildings in the search for new hybrid type that still has no names. The underlying assumption is that you work with dense urban context and these situations evolve over time. Diploma 16 is attempting to define the project according to the following broad classifications:

A. High-rise
B. Long-span
C. Super-area

The project outcome can include a diverse range of programs and be a combination of different building types and structural types. The common denominator is that they look at architecture on an urban scale positioned between city and building. With the advent of new ultra-light materials some type of structures that previously were deemed too expensive and wasteful of resources may once again be feasible. Future visions of the past suddenly appears less daunting and impossible than before.

2.5 4th & 5th YEAR STUDENTS

Environmental Building Form, Construction and Living towards an EXPLICIT and EXPRESSIVE Ecological Identity now and for the near Future contingent on new material possibilities.

Diploma 16 investigates the role of design, designer and the architect in environmental and ecological architecture. All students formulate new ideas in architectural form, space, design techniques, material and building construction and technologies; and seek opportunities to create new forms of inhabitation and living experiences that may transform our future.

TERM 1

In term 1, you conduct experimentation on volumetric and subtractive architectural form (and/or void) addressing thickness and depth. The work focuses on human factors where the livelihood of people & community are paramount.

Students analyse and assess the work speculatively and elaborate potential changes in the mode of inhabitation towards an environmental and ecological society, arguably a possibility to reform building industries towards a new world vision of ecology. A

All students develop their thesis and design repertoire through physical constructs, large format drawings, diagramming, weekly graphical documentation, and visual and verbal presentation.

All students also conduct in depth and comprehensive research in parallel on their own interests in architectural form, affiliated ecological factors, inhabitation environments, living experiences, building construction and technologies.

Subsequently, every student selects a city relevant and specific to your own educated interests anywhere around the globe to situate your design projects. A detail city-visit proposal regarding consultancy and work-plan will be agreed on individual prior to the end of Term 1.

CHRISTMAS HOLIDAY

During Christmas we expect everyone to visit the city of their own choice and conduct a field study and establish connections with local industry, universities and officials if possible.
TERM 2

In Term 2, all students formulate an ecological ideology and identity for their design projects and further experiment buildings as architecture with specific living environmental factors, and relevant ecological construction and building technologies. Alongside the iterative experimentation on physical constructs, it is the ambition of Diploma 16 to challenge the conventions of architectural sections to exploit new way to curate content, spatial hierarchy, structural strategies, envelope, floor plates; and the complexity of interiority and exteriority; hence to produce new architectural sensibility for a new ecological era.

TERM 3

At the final stage in Term 3, students speculate on a new environmental future and modify their design thesis to reflect the necessary transformation of our lives and urban environment with time.

All students develop their thesis projects through physical constructs and progress files continuously and rigorously throughout the academic year. The development of large-scale drawings are assessed as part of presentation three times each term. You keep developing your thesis abstract and research files bi-weekly from the very beginning of the year.

2.6 5th YEAR STUDENTS

Environmental Building Form, Construction and Living, towards An Architectural Manifesto of ECOLOGICAL REVOLUTION that shapes the Future contingent on new material possibilities.

All final year students formulate and develop a long-term vision for our living environment through architectural design. Diploma 16 believes in buildings as architecture and the very centre of our interests is about speculation and experimentation that opening up new possibility to rethink the current trends. Collectively the work of Diploma 16 becomes an Architectural Manifesto for a resilient future and for Ecological Revolution. All 5th years students are encouraged to further their design work and thesis projects to be competing in various ecological architectural competitions such as the Holcim Award.
THE DELIVERABLES & OUTCOME

3.0 ANTICIPATED OUTCOME & ASSESSMENT

We expect all students to participate actively in tutorials and reviews. Each student needs to manage their own design process and experiments as well as developing an own context and brief for the project. The on-going work is documented in a chronological design log. This log is a central part of understanding the progression and it is as an integral part of the assessment process.

The unit’s work is organized in a reiterative manner, whereby thesis, design and output co-evolve in parallel with topical research and analysis. The objective is for each student to develop an individual architectural design repertoire, culminating in the production of a building project manifested in a singular large-scale physical model, a singular large-scale composite drawing.

3.1 DESIGN QUALITIES

The studio aim is for each project, the final model and the book to make a disciplinary contribution in how ultra-light weight and high strength materials are bound to change our building industry and the way we conceive both of architecture and cities. The project is deploying a host of digital tools and techniques for both design modelling, fabrication and manufacturing in architectural projects. The project outcome is assessed both for its rigour, instrumentality, novelty and for its design qualities. We are using the following criteria as a lens to understand, discuss and assess design qualities of the final project outcome.

Sidedness. Ways to make two sides of a piece of furniture / storage unit appear different.

Niches. Ways to create space inside mass for storage / program.

Porosity. Ways to subtract one or several intersecting volumes from solid/block so that its reference surface partially disappears.

Depth and flatness. Ways to make a mass appear flat from one side and deep from the other.

Figuration. Ways to have one or a group of several furniture units appear as a figure against a muted background. Breaks repetition and/or creates affordances.

Posture and proportions. Ways of aggregating volumes so that the mass as a whole gains a certain posture or certain proportion.
4.0 DELIVERABLES

Due to the complexity of the undertaking of a large scale design project, the necessary deliverables to deal with the range of scale and diverse type of information are mixed. Diploma 16 sees the design portfolio as a collection of documents and physical output on varying scale. Each document and model to scale has a specific role to fill in the overall portfolio.

4.1 DOCUMENTATION

The documentation of any project is a key aspect of being a good architectural student, researcher and ultimately an architect. Please take uttermost care in how you compile the various documents that make up your overall design portfolio. Prepare to photograph your work in progress and have a digital camera and a tripod at hand, in order to take properly lit photographs and videos of the model and construction process, the life in the studio, study models, mock ups, prototypes and the final result. These photos are also serving as the basis for your design log, the projects review, your technical studies document etc. and will be part of assessing the qualities of your projects and influence the assessment of the project outcome.

Progress File (chronological collection of work)

Each student is required to keep a design log (illustrated design journal/diary) that we refer to as a Progress File. This file should contain all individual project contributions, digital learning, research and experiments and an account of your own individual contribution in each team activity. Please keep it updated on a daily/weekly basis and it is an integral part to discuss how the work evolves and for us to understand each individual contribution at the end of each phase. The progress file is typically a A4 or A3 document generally a good measure is around 4-5 pages a week. The project and should include design experiments, process oriented drawings, material research, fabrication processes, documentation of mock ups and models as well as detailed drawings.

Research File

All project research, references and readings should be collated in a document that we refer to as a research file. This file is used also to give substance and to support your arguments when you are presenting. Typically the research file is an A4 binder that can be bound as a book at the end of the year.

Large Scale Drawings

At different strategic points of the year, we are expecting large scale drawings that are refined and made to a publishable quality. The drawings are focused on the design outcome of the design experiments.

Technical Studies Report & Technical Drawings

The technical studies is a central to the unit work. This year we aim to support the technical studies team tutors with our own consultants that are specialists on the materials and ultra-light structures.

Unit Book – Whole Earth Catalogue 2017 (for the projects review)

The unit is collectively designing and producing a 100+ pages book that collects all the research, designs, processes and final design outcome. The book is including text from both students and faculty and it is self-published on ISSU and it is inspired by the Whole Earth Catalogue.
4.2 PHYSICAL MODELS

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete." – Buckminster Fuller

The unit work evolves around the production models on a range of scale. The models should be kept in a presentable state and be documented and photographed in preparation for the design log, Projects Review publication and the Projects Review end of the year exhibition. Please pay attention to keeping all your model studies whether they are successful or not. Please bear issues about how material and fabrication processes are affected by scalar consideration and consider using alternative solution if they behave more like they would in full scale.

4.3 MOCK-UPS

Due to experimental nature of the design, development and the production process we are making an extensive use of mock-ups where we try different conditions for how something is tooled and assembled. It is important that you take as much care in documenting these mock-ups as you do you’re your other model work and make them an integral part of your portfolio!

4.4 PROTOTYPE

If one manages ones time carefully, we encourage the design and production of large scale prototype especially for final year students. The prototype should work as a proof of concept for both design qualities, the material processes, the fabrication and assembly logic and is often an important part of the Technical Studies submission and it is many times a requirement for being considered for Technical Studies high pass table.

4.5 EXHIBITION

The Projects Review exhibition is mainly curated, designed, produced and installed by the 1st year students. This year we aim to start preparing, collating and formatting work in good time before the submission deadline.

4.6 VIDEO & PHOTOGRAPHS

We are aiming to capture the design work, studio culture, live experiments, and model building and exhibition installation process in still and moving images resulting in a video of the studio which you can link to your portfolios after the course.
THE ORGANIZATION

5.0 ORGANIZATION

Diploma 16 requires students to participate full-time and take part of each activity and assessment. The unit work is primarily tutorial and critic based studies based around individual work but there are also a number of guest lectures, critics, consultancies and group activities. The unit culture is important so please plan to work in the studio as much as possible to learn from your peers and be ready to share information with your peers.

The unit work is organized in four distinct phases of which there are a number of assignments. The phases are as follows:

TERM 1 | Design Generation - Research and Experiments

This phase includes initial digital design technique workshops, introduction to both the concept of resilience and new carbon based material. Design tools and machinery with the aim to develop material research and design concepts

TERM 2 | Design Development - Technical Research

Designing, communicating and developing design concepts, techniques and material output to complete in the in-house design competition

TERM 3 | Design & Research Synthesis

Fabrication, Manufacturing, Assembly and Production Information and Documentation, Presentation, Documentation & Dissemination

FINAL | Documentation & Dissemination

This final phase the 4th year students are designing and constructing the Diploma 16 exhibition space for the AA Project Review. Time is also spend to edit and print the Dip 16 Whole Earth Catalogue as well as the Progress Files of the unit that needs to be printed for the exhibition. The final year students are making their work presentable for the external examination and are only help on the exhibition the final two days.

5.1 CALENDAR & TIMETABLE

Weekly tutorials are mainly on Wednesday and Fridays. We have regular pin-ups on Wednesdays. The updated and exact calendar and time table is made available on the Diploma 16 G-Drive at the start of the year.

UNIT PRESENTATIONS | 25 September 2017
TERM 1 JURY | 6 December 2017
4th YEAR PREVIEWS | 14-15 March 2018
5th YEAR PREVIEWS | 21-22 March 2018
TERM 3 FINAL JURY | 16 May 2018
4th TABLES | 6-7 June 2018
5th TABLES | 13-14 June 2018
EXTERNAL EXAMINATION | 20 June 2018
GRADUATION | 22 June 2018
PROJECT REVIEW OPENING | 22 June 2018

5.2 STUDY TRIPS

We are doing shorter excursions and trips together as a unit and between terms 1 and 2 we are going on an extended trip as a unit. We also expect everyone in the unit to travel on an extended site trip during the holidays between term 1 and 2.

Diploma 16 at the Taj Mahal, India 2017
5.3 TERM 1

Term 1 Assignment 01 [4 weeks] weekly charrette

T1Wk01
10 Precedents [10 pages*] - Exceptional Architecture and Environmental Architecture - 10 diagrams + key description defining Form, Environment & Living

1 Physical Construct V.1 [1:500, 30x30x30 cm] - exploring one critical precedent fundamental relationship between Volume, Void, Sky, Ground & Living

1 Diagram + key description [1 page*] - identifying the criticality of the physical construct

Statement of Interests [1 page*] - Building, Form, and Environment

T1Wk02
2 Physical Constructs V.2 & V.3 [1:500, 30x30x30 cm] - experimenting different articulations of design relationship between Volume, Void, Sky, Ground based on previous Physical Construct V.1, and discuss the potential changes in Living

2 Diagrams + key description [2 pages*] - identifying the core of experimentation

Statement of Interests [1 page*] - Building, Form, Environment, Construction, Technologies and subsequent Living

T1Wk03
2 Physical Constructs V.4 & V.5 [1:500, 30x30x30 cm] - experimenting further different articulations of design relationship between Volume, Void, Sky, Ground, Enclosure based on previous Physical Construct V.2 & V.3, and discuss the potential new way of Living

2 Diagrams + key description [2 pages*] - identifying the core of experimentation

Statement of Intent [1 page*] - Initial proposal - Building, Form, Environment, Construction, Technologies and proposed new Living

T1Wk04 - Pin Up

All 4 Physical Constructs V.2 - V.5 [1:500, 30x30x30 cm, all models to be in exhibition quality] - experimenting further different articulations of design relationship between Volume, Void, Sky, Ground, Enclosure and discuss the potential new way of Living

MetaDrawing [150 x 59.4 cm] - visual communication of the critical design intelligence in physical constructs, framework, learning, assessment, opportunity and the impacts on Architecture, Environment and Living

Progress Files* - collect and curate all pages and define design focus and intend, draw summary and conclusion as necessary

Research Files* - collection of raw research materials with highlights, define further

Statement of Intent [1 page*] - revised proposal - Building, Form, Environment, Construction, Technologies and proposed new Living

Term 1 Assignment 02 [3 weeks]

T1Wk05
10 Precedents [10 pages*] - Innovative Environmental Building and Construction, and the subsequent architectural form & design - 10 diagrams + key description defining the influence from Construction to Form, Environment & Living

2 Physical Constructs V.6 & V.7 [1:500, 30x30x30 cm] - experimenting different Constructions and their influences on Volume, Void, Sky, Ground & Enclosure based on previous Physical Construct V.2 - 5, and discuss the relationship between Materiality & Living

2 Diagrams + key description [2 pages*] - identifying the core of experimentation

Abstract 01 [1 page*] - initial idea of design thesis emerging from Statement of Interests, Statement of Intent & research on Form, Environment, Living & Construction
T1Wk06

2 Physical Constructs V.8 & V.9 [1:500, 30x30x30 cm] - experimenting further different Constructions and their influences on Volume, Void, Sky, Ground, Enclosure & Envelope based on previous Physical Construct V.6 - 7, and discuss the relationship between Materiality, Structure & Living

2 Diagrams + key description [2 pages*] - identifying the core of experimentation

Abstract 01 [1 page*] - initial idea of design thesis on Form, Environment, Living & Construction

T1Wk07 - Review

Presentation - multimedia & verbal communication

All 4 Physical Constructs V.6 - V.9 [1:500, 30x30x30 cm, all models to be in exhibition quality] - experimenting further different Constructions and their influences on Volume, Void, Sky, Ground, Enclosure & Envelope and discuss the potential revolutionary Ecological Living.

MetaDrawing [150 x 59.4 cm] - visual communication of the critical design intelligence in physical constructs, framework, learning, assessment, opportunity and the impacts on Architecture, Environment and Living

Progress Files* - collect and curate all pages and define design focus and intend, draw summary and conclusion as necessary

Research Files* - collection of raw research materials with highlights, define further scope of research

Abstract 02 [1 page*] - revised design thesis + draft hypothesis on Form, Environment, Living & Construction

T1Wk08

10 Situated Observations [10 pages*] - 10 situated Environmental - Living observations that suggest critical and direct design parameters & strategies for your innovative experiments - 10 diagrams + key description defining the relationship between situated observations & design experimentation on

Construction, Form, Environment & Living.

1 Physical Construct V.10 [1:200, 60x60x60 cm] - informed experimentation on Volume, Void, Sky, Ground with higher resolution to 1:200 scale based on previous V.6 - V.9, and discuss the relationship between situated observations, design strategies, Construction, Form, Environment & Living.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Abstract 02 rev [1 page*] - revised design thesis + hypothesis on Form, Environment, Living & Construction

T1Wk09

1 Physical Construct V.11 [1:200, 60x60x60 cm] - informed experimentation on Enclosure & Interiority with higher resolution to 1:200 scale based on previous Physical Construct V.10, and discuss the relationship between situated observations, design strategies, Construction, Form, Environment & Living.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Individual City Visit Proposal [1 page*] - draft daily work plan, planned consultancy interviews, questionnaire and relevant issues regarding situated observations, information & building technology, establish consultancy contacts

T1Wk10

1 Physical Construct V.12 [1:200, 60x60x60 cm] - informed experimentation on Envelope & Exteriority with higher resolution to 1:200 scale based on previous Physical Construct V.10, and discuss the relationship between design experimentation and situated observations, building context, SPEEC, & CREW.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Individual City Visit Proposal rev [1 page*] - revised daily work plan, planned consultancy interviews, questionnaire and relevant issues regarding situated observations, information & building technology, follow up consultancy contacts & make necessary
arrangements

T1Wk11 - T1 Jury

Presentation - multimedia & verbal communication

All 3 Physical Constructs V.10 - V.12 [1:200, 60x60x60 cm, all models to be in exhibition quality] - conclude the three steps experimentation with situated observations & information, and their very relationship with thesis project in Volume, Void, Sky, Ground, Enclosure & Interiority, Envelope & Exteriority, and discuss the situated revolutionary Ecological Living.

MetaDrawing [150 x 59.4 cm] - visual communication of the critical design intelligence in situated observations and information, and their very relationship with previous design matters and experiments, verify framework, learning, assessment, opportunity and impacts on Architecture, Environment and Living.

Progress Files* - collect and curate all pages and define situated information and their impacts on design focus and intent, draw summary and conclusion

Research Files* - collection of raw research materials including situated information with highlights, define specific and detail scope of research

Abstract 03 [1 page*] - revised design thesis + hypothesis + draft Method Statement on Form, Environment, Living, Construction & Technology

TS5 Abstract [1 page*] - thesis, hypothesis + draft method statement

TS5 Consultations begin

Term 2 Assignment 04 [3 weeks]

T2Wk02

10 Situated Technologies [10 pages*] - 10 situated Building Technologies - Building & Living observations that modify critical and direct design parameters & strategies for your innovative experiments - 10 diagrams + key description defining the relationship between situated technologies & design experimentation on Construction, Form, Environment & Living.

1 Physical Construct V.13 [1:200, 60x60x60 cm] - informed experimentation on Volume, Void, Sky, Ground in 1:200 scale based on previous V.10 - V.12, and discuss the considerations on situated technologies, and the design evolution on Strategies, Construction, Form, Environment & Ecological Living.

1 Detail Construct [1:50 or bigger] - initial understanding on the relationship between situated technology, primary experimentation & quality of Living.

1 Diagrams + key description [1 pages*] - identifying
the core of experimentation

Abstract 03 rev [1 page*] - revised thesis + hypothesis + methodology on Form, Environment, Living, Construction & Technology

TSS Proposal [1 page*] - work plan + experimentation + thesis relevancy

T2Wk03

1 Physical Construct V.14 [1:200, 60x60x60cm] - informed experimentation on Enclosure & Interiority in 1:200 scale based on previous V.13 & Detail Construct. and discuss the considerations on situated technologies, content, building and construction and the design evolution on Strategies, Construction, Form, Environment & Ecological Living.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Abstract 04 [1 page*] - revised thesis + hypothesis + methodology + draft assessment criteria on Form, Environment, Living, Construction & Technology

TSS Abstract [1 page*] - thesis, hypothesis + methodology + draft design criteria

T2Wk04 - Review

1 Physical Construct V.15 [1:200, 60x60x60 cm] - informed experimentation on Envelope & Exteriority in 1:200 scale based on previous V.14 & Detail Construct. and discuss the considerations on situated technologies, content, building and construction and the design evolution on Strategies, Construction, Form, Environment & Ecological Living.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Presentation - multimedia & verbal communication

All 3 Physical Constructs V.13 - V.15 [1:200, 60x60x60 cm, all models to be in exhibition quality] - conclude the three steps experimentation with situated observations, information and technologies, and their very relationship with thesis project in Volume, Void, Sky, Ground, Enclosure & Interiority, Envelope & Exteriority, and discuss the situated revolutionary

Ecological Living.

MetaDrawing [200 x 84 cm] - visual communication of the critical design intelligence in sectional axonometric, with situated observations, information and technology, and their very relationship with previous design matters and experiments, verify framework, learning, assessment, opportunity and impacts on Architecture, Environment and Living

Progress Files* - collect and curate all pages and define design focus and intend, draw summary and conclusion as necessary in support of thesis proposition

Research Files* - collection of raw research materials with highlights, define further scope of research in support of thesis proposition

Abstract 04 rev [1 page*] - revised thesis + hypothesis + methodology + assessment criteria on Form, Environment, Living, Construction & Technology

TSS Draft Document 1 [30x30 cm] - abstract, content, experimentation and raw materials

Term 2 Assignment 05 [5 weeks]

T2Wk05

1 Physical Construct V.16 [1:100, 100x100x100 cm] - refined and detailed experimentation on Volume, Void, Sky, Ground in 1:100 scale based on previous V.13 - V.15, and discuss the revolutionary design relationship between situated observations, information & technologies, and their very influences on thesis evolution.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Abstract 05 [1 page*] - revised thesis + hypothesis + methodology + assessment criteria + draft anticipated outcome on Form, Environment, Living, Construction & Technology

TSS Abstract [1 page*] - thesis, hypothesis + methodology + design criteria + draft anticipated outcome
T2Wk06

MetaDrawing [200 x 84 cm] - revised sectional axonometric based drawings - focus on the revolutionary vision for Ecological Building, Environment & Living

Progress Files* - revision following review feedback, focus on communication of critical design steps and necessary highlights

Research Files* - revision following review feedback, focus on the necessary details of information and support, and the polemic positioning

Abstract 05 rev [1 page*] - revised thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

TS5 Draft Document 2 [30x30 cm] - abstract, content, experimentation and raw materials, chapters & temporary conclusion

T2Wk07

1 Physical Construct V.17 [1:100, 100x100x100 cm] - refined and detailed experimentation on Enclosure & Interiority in 1:100 scale based on previous V.16, and discuss the revolutionary design relationship between situated observations, information & technologies, and their very influences on thesis evolution.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Abstract 06 [1 page*] - semi-final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

TS5 Abstract [1 page*] - semi final - thesis, hypothesis + methodology + design criteria + anticipated outcome

T2Wk08

1 Physical Construct V.18 [1:100, 100x100x100 cm] - refined and detailed experimentation on Envelope & Exteriority in 1:100 scale based on previous V.17, and discuss the revolutionary design relationship between situated observations, information & technologies, and their very influences on thesis evolution.

1 Diagrams + key description [1 pages*] - identifying the core of experimentation

Abstract 06 rev [1 page*] - revised semi-final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

TS5 Interim Submission [30x30 cm] - abstract, content, experimentation and organised materials, details, chapters & draft conclusion

T2Wk09

MetaDrawing [300x119.8cm] - revised sectional axonometric based drawings - focus on the revolutionary vision for Ecological Building, Environment & Living

Progress Files* - continuous revision, focus on communication of critical design steps and necessary highlights

Research Files* - continuous revision, focus on the necessary details of information and support, and the polemic positioning

TS5 Interim Submission [30x30 cm] - abstract, content, experimentation and organised materials, details, chapters & draft conclusion

T2Wk10 & 11 - Preview 4th yrs & Preview 5th yrs

Presentation - multimedia & verbal communication

All 3 Physical Constructs V.16 - V.18 [1:100, 100x100x100 cm, all models to be in exhibition quality] - conclude the three steps experimentation with the support from all previous iterations V.01 - V.15, and discuss the revolutionary design relationship between situated observations, information & technologies, and their very influences on thesis evolution, conclude with the vision of a new form of Ecological Living.

MetaDrawing [300 x 119.8 cm] - visual communication of the critical design intelligence in sectional axonometric, with situated observations, information and technology, and their very relationship with previous design matters and experiments, verify framework, learning, assessment, opportunity and
impacts on design thesis, focus on the revolutionary vision for Ecological Architecture, Environment & Living.

Progress Files* - continuous revision, focus on communication of critical design steps and necessary highlights

Research Files* - continuous revision, focus on the necessary details of information and support, and the polemic positioning

Abstract 07 (1 page*) - final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

TS5 Interim Submission Document [30x30 cm] - abstract, content, experimentation and organised materials, details, chapters & draft conclusion, for reference only

5.6 TERM 3

Term 3 Assignment 06 [4 weeks]

T3Wk01 - Post Preview Pin Up

MetaDrawing [300 x 119.8 cm] - post Preview revision - refine the modification framework necessary to speculate Ecological Longevity and Future Projection, hence the opportunity for polemical transformation of Architecture, Environment and Living through time

Progress Files* - post Preview revision, refine the necessary communication of critical design steps and necessary highlights

Research Files* - post Preview revision, refine the necessary details of information and support, and the polemic positioning

Abstract 07 rev (1 page*) - post Preview revision of final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

TS5 Final Submission [30x30 cm] - abstract, content, experimentation and organised materials, details, chapters & final conclusion

T3Wk02

1 Physical Construct V.19.2 [1:100, 100x100x100 cm] - final & detailed experimentation on Enclosure & Interiority in 1:100 scale based on previous V.19.1, discuss Ecological Longevity and Future Projection of design work, and the very influences of time factors on thesis evolution, focus on Ecological Building.

1 Diagrams + key description (1 pages*) - identifying the core of experimentation

Abstract 08 (1 page*) - modification on final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

T3Wk03

1 Physical Construct V.19.3 [1:100, 100x100x100 cm] - final & detailed experimentation on Envelope & Exteriority in 1:100 scale based on previous V.19.2, discuss Ecological Longevity and Future Projection of design work, and the very influences of time factors on thesis evolution, focus on Ecological Environment.

1 Diagrams + key description (1 pages*) - identifying the core of experimentation

Abstract 08 (1 page*) - modification on final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology
T3Wk04 - Final Jury

Presentation - multimedia & verbal communication

Final Physical Construct V.19 (1:100, 100x100x100 cm, all models to be in exhibition quality) - conclude final three steps experimentation with the support from all previous iterations V.01 - V.18, and discuss Ecological Longevity and Future Projection of your work, and the very influences of time factors on thesis evolution, conclude with a projective and revolutionary vision of Ecological Living, Building & Environment.

MetaDrawing [300 x 119.8 cm] - visual communication of the critical design intelligence in sectional axonometric, with situated observations, information and technology, and discuss the speculative projection of design work, and the very influences of time factors on thesis evolution including framework, learning, assessment, opportunity and impacts to speculate Ecological Longevity and Future Projection, hence the opportunity for polemical transformation of Architecture, Environment and Living through time.

Progress Files* - final revision, focus on communication of critical design steps and necessary highlights

Research Files* - final revision, focus on the necessary details of information and support, and the polemic positioning

Abstract 08 [1 page*] - modification on final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

T3Wk05

Post Final Jury synthesis, revision & finalizing thesis, all model works, metadrawings and support documents, rehearsals

T3Wk06

Rehearsals - effective communication

T3Wk07 & 08 - Final Tables 4th yrs & Diploma Committee

Presentation - multimedia & verbal communication

Final Physical Construct V.19f (1:100, 100x100x100 cm, all models to be in exhibition quality) - conclude final three steps experimentation with the support from all previous iterations V.01 - V.19, and discuss your revolutionary thesis through the work including framework, development, learning, assessment, opportunity, impact & future projection from Situated Observations, Information & Technologies to Ecological Living, Building & Environment & beyond.

MetaDrawing (300 x 119.8 cm) - visual communication of the critical design intelligence in sectional axonometric, with situated observations, information and technology, and discuss the speculative projection of design work, and the very influences of time factors on thesis evolution including framework, learning, assessment, opportunity and impacts to speculate Ecological Longevity and Future Projection, hence the opportunity for polemical transformation of Architecture, Environment and Living through time.

Progress Files* - final revision, focus on communication of critical design steps and necessary highlights

Research Files* - final revision, focus on the necessary details of information and support, and the polemic positioning

Abstract f (1 page*) - final thesis + hypothesis + methodology + assessment criteria + anticipated outcome on Form, Environment, Living, Construction & Technology

T3Wk09 - External Examination + Exhibition Preparation

* 30x30cm template for the progress files will be circulated at the beginning of T1
** Full anticipation and commitment are expected as well as your full corporation in preparing and dismantling the end of year exhibition until mid July.
7.0 READING LIST

On Materials Bound to influence Architecture

https://www.wired.com/2015/09/bizarre-bony-looking-future-algorithmic-design/#slide-1


On the Future

Readings


Jeremy Rifkind (2012), The third industrial revolution: How lateral power is transforming energy, the economy, and the world, Palgrave Macmillan 2012


Reference Material


Le Corbusier (1929), The City of To-morrow and Its Planning, Payson & Clarke, Ltd., New York, 1929; and

Stewart Brand (ed), The Last Whole Earth Catalog 1971, Portola Institute, Inc.; Oversized edition June 1971, 452 pages


Philip Ragan + Bradley Edwards 2010, Leaving the Planet by Space Elevator lulu.com (paper back) 27 Oct 2010., 264 pages


On Design Qualities

Readings


On digital design and fabrication

Readings

Gail Peter Borden and Michael Meredith, eds., Matter: Material Processes in Architectural Production (Oxon: Routledge, 2011)

Greg Lynn, “Robots”, in Greg Lynn FORM (New York: Rizzoli, 2008)

Reference Material


Rob Thompson, Manufacturing Processes for Design Professionals (London: Thames & Hudson, 2007)

On geometry and material transfers

Readings


Critical Thinking and Current Discourse


Alice Klein 2017, Can China save the world? The nation leads the world in clean energy investment. Will its globalisation strategy catalyse a green revolution asks, New Scientist, 16 Sept 2017, p20-21


Fiction

