MASTER OF SCIENCE & MASTER OF ARCHITECTURE
SUSTAINABLE ENVIRONMENTAL DESIGN

PROGRAMME GUIDE 2017-18
MSc & MArch Sustainable Environmental Design

AA SED
Architectural Association Graduate School
36 Bedford Square, London WC1B 3ES, UK

T. + 44 20 7887 4025    + 44 20 7887 4069
sed.aaschool.ac.uk

The AA is a Partner Institution and Affiliated Research Centre of The Open University (OU), UK. All taught graduate degrees at the AA are validated by the OU. The OU is the awarding body for research degrees at the AA.
Teaching Staff

SIMOS YANNAS  simos@aaschool.ac.uk
PAULA CADIMA  paula.cadima@aaschool.ac.uk
JORGE RODRIGUEZ  arqjorgerodriguez@gmail.com
KLAUS BODE  klaus.bode@bdsp.com
GUSTAVO BRUNELLI  gustavo_brunelli@yahoo.com.br
HERMAN CALLEJA  hermancalleja@yahoo.co.uk
MARIAM KAPSALI  mariamkapsali@yahoo.gr
BYRON MARDAS  byronmardas@gmail.com

Visiting Lecturers

NICK BAKER  nickvbaker@aol.com

Graduate School Administrative Coordinator

CLEMENT CHUNG  clement@aaschool.ac.uk

AA School Registrar

BELINDA FLAHERTY  belinda@aaschool.ac.uk
Contents

1 SUMMARY PROGRAMME DATA 3

2 INTRODUCTION & OVERVIEW 4
   2.1 Introduction 4
   2.2 AA Chronicle: 60 Years of Environmental Design Teaching & Research 6
   2.3 AA SED MSc & MArch Research Agenda 15

3 PROGRAMME SPECIFICATION : AIMS AND LEARNING OUTCOMES 16
   3.1 Knowledge & Understanding 16
   3.2 Subject Specific Skills and Attributes 16
   3.3 Transferable Skills and Attributes 16
   3.4 Curriculum Map 17

4 TEACHING AND LEARNING STRATEGIES 18
   4.1 Lecture Courses 18
   4.2 Seminars & Workshops 18
   4.3 Study Trips & Special Events 18
   4.4 Studio Projects 18
   4.5 Research Papers 18
   4.6 Technical Studies 19
   4.7 Dissertation Projects 19
   4.8 Tutorials 19
   4.9 Project Presentations & Reviews 19
   4.10 Student Feedback 19

5 RESOURCES 19
   5.1 Reading Lists & Reference Material 19
   5.2 Computing 20
   5.3 Communications 20
   5.4 Scientific Instruments 20
   5.6 Modelmaking and Prototyping 20
   5.7 Studio 20

6 ASSESSMENT PROCEDURES 20

7 PROGRAMME STRUCTURE & CORE COURSES 21

8 READING LISTS & INTERNET SOURCES 24
   8.1 Reading Lists 24
   8.2 AA SED Publications 2012-17 30
   8.2 Internet Sources 35

9 COURSE CREDITS, LEARNING OUTCOMES & ASSESSMENT CRITERIA 37
   9.1 Course Credits 37
   9.2 Term 1 Project 38
   9.3 Term 2 Project 38
   9.4 Term 1 & 2 Research Papers and Technical Studies 39
   9.5 Terms 3 & 4 Dissertation Projects 40

10 ORGANISATION & SUBMISSION OF DISSERTATION PROJECTS 41
   10.1 Choice of Dissertation Topics 41
   10.2 Preparation of Dissertation Research Outline & Plan of Work 41
   10.3 Dissertation Document Structure & Contents 41
   10.4 Referencing Conventions 42
   10.5 Submission Requirements for Dissertations 44
11 ORGANISATION & SUBMISSION OF COURSE WORK  45
  11.1 Course Projects & Papers  45
  11.2 Document Structure for Research Papers  45

12 TEACHING STAFF CV’s  46
  Simos Yannas
  Paula Cadima
  Jorge Rodriguez Alvarez
  Nick Baker
  Klaus Bode
  Gustavo Brunelli
  Herman Calleja
  Mariam Kapsali
  Byron Mardas

13 EXTERNAL LINKS  47

Appendix LIST OF DISSERTATION PROJECTS  51

  MArch & MSc Sustainable Environmental Design  51
  MA Environment & Energy Studies  72
  MPhil & PhD  78
1

SUMMARY PROGRAMME DATA

Degree: MSc & MArch in Sustainable Environmental Design
Teaching Institution: Architectural Association School of Architecture
Programme Validated by: The Open University
Duration of Programme: 12 months full-time Master of Science (MSc)
16 months full-time Master of Architecture (MArch)

Teaching Staff:
Simos Yannas DiplArchEng AADiplGrad(Hons) PhD
Paula Cadima DiplArch PhD
Jorge Rodriguez BArch MA MSc PhD
Nick Baker BSc PhD
Klaus Bode BSc(Hons) HonRIBA
Gustavo Brunelli DiplArch MA FRSA
Mariam Kapsali DiplArchEng MSc
Herman Calleja BArch MA
Byron Mardas DiplArchEng MSc

External Examiners:
Sergio Altomonte DipArch MPhil PhD University of Nottingham
Paola Sassi DiplIng MSc PhD Oxford Brookes University

MSc / MArch Lecture Courses & Seminars
1 Sustainable City (Lecture Series) Term 1
2 Adaptive Architecturing (Lecture Series) Term 1
3 Environmental Simulation & Performance Assessment Tools (Lecture Series & Software Workshops) Terms 1&2
4 Environmental Design Primer (Lecture Series) Terms 1&2
5 Lessons from Practice (Lecture Series) Terms 2&3
6 Research Seminar Terms 1-3

MSc / MArch Studio Projects
1 Refurbishing the City 1: London Building Studies Term 1
2 Refurbishing the City 2: Design Research Project Term 2
3 Refurbishing the City 3: MSc / MArch Dissertation Research Terms 3&4

PROGRAMME REQUIREMENTS
180 credits (1800 hours of study) toward successful completion of the following:

Term 1 (45 credits)
1 PROJECT I: London Building Studies (25 credits)
   Introduction: Week 2; Final Review: Week 12; Submission: Week 1 Term 2
2 TECHNICAL STUDIES (10 credits)
   Choice of topics: from Week 3; Submission: Week 1 Term 2 (as part of Project I)
3 RESEARCH PAPER I (10 credits)
   Seminar: from Week 4; Tutorials: from Week 7; Submission: Week 12 Term 1

Term 2 (45 credits)
4 PROJECT II: Design Research (25 credits)
   Introduction: Week 1; Final Review & Submission: end Term 2
5 TECHNICAL STUDIES (10 credits)
   Choice of topics: Week 3; Submission: end Term 2 (as part of Project II)
6 RESEARCH PAPER II (10 credits)
   Choice of topics: Week 6; Submission: Week 1 Term 3.

Terms 3 & 4 (90 credits)
7a MSc DISSERTATION PROJECT (90 credits)
   Choice of topic & submission DP Outline: end Term 2; Reviews: in Terms 3 & 4
   Submission MSc Dissertation: 14 September 2018
7b MArch DISSERTATION PROJECT (90 credits)
   Choice of topic & submission DP Outline: end Term 2; Reviews: in Terms 3 & 4
   Submission MArch Dissertation: 11 January 2019
2 INTRODUCTION & OVERVIEW

2.1 Introduction

Sustainable Environmental Design engages with real-life problems affecting buildings and cities across the world. Design research for the SED Masters programme is driven by strict performance criteria following a process of adaptive architecturing which proceeds from inside to outside, attuning the built form and its constituents to natural rhythms and inhabitant activities. Key objectives of all SED projects are to improve environmental quality in cities, achieve independence from non-renewable energy sources and to develop an environmentally sustainable architecture that is capable of adapting to changing climates and urban environments.

The taught programme is structured in two consecutive phases. Phase I is organised around team projects that combine MSc and MArch students to engage in experimental and analytical testing of the theoretical knowledge and computational tools introduced in weekly lecture and software workshops. In Phase II, MSc and MArch design research develops independently following individual research agendas related to students’ home climates, urban contexts and building types. MSc candidates complete their 12-month course with a research project that documents the applicability and architectural potential of their findings in their selected geographic and climatic contexts. The MArch cycle extends over a 16-month period that culminates in a specific design application for a given site and design brief.

The MSc and MArch in Sustainable Environmental Design are post-professional degrees offering graduates specialisation options to engage in further research, teaching or practice. In recent years the programme’s graduates have found employment with some of the UK’s leading architectural practices (Arup Associates, Architype, Avanti Architects, Bennetts Associates, Building Design Partnership, ECD Architects, Feilden Clegg Bradley, Foster & Partners, Grimshaw, HOK, KPF, Make Architects, Populous, PRP Architects, SOM, Wilkinson Eyre and many others) and environmental engineering consultancies (Arup, Atelier Ten, Atkins, Chapman BDSP, Buro Happold, Fulcrum, Scott Wilson, WSP Environmental and others). Others have returned home to run their own successful practices or to go into research and teaching. Over the years many of the programme’s graduates have achieved senior positions in academia as well as in practice and have themselves influenced the teaching, research and practice of sustainable design in some many countries and climatic regions.

The programme’s projects and teaching methods have featured in many national and international events and publications. Latest presentations include the PLEA (Passive and Low Energy Architecture) 2017 Design to Thrive Conference in Edinburgh 3-5 July 2017, and publications of research papers in the Architectural Science Review, in Energy and Buildings, and in the Sustainable Cities and Society scientific journals. Other recent events include the PLEA 2016 Conference in Los Angeles, PLEA 2015 in Bologna, Italy, and PLEA 2014 in Ahmedabad, India, where the AA SED participation included an exhibition of MSc and MArch dissertation projects by twelve of the programme’s Indian graduates. Earlier events include Ecobuild 2012, the UIA Congress in Tokyo, the PLEA 2011 conference in Louvain-la-Neuve, Belgium, PLEA 2009 in Quebec, Canada, Ecobuild, London in 2009, the Jerusalem Seminar in Architecture 2009, the PLEA 2008 Conference “Towards Zero Energy Buildings” in Dublin, the Sun, Wind & Architecture Conference in Singapore, the PALENC 2007 Conference on Crete among others. Publications of AA SED staff and student work have also featured in the AD special issue on Ecological Design Research, in the books Green Design: from theory to practice edited by Ken Yeang, Architecture & Energy and O Edificio Ambiental, in a special issue of the French-language architectural journal Carré Bleu, in the Architecture and Urbanism journal published in Tehran, in the Anglo-Chinese World Architecture, in the Lisbon-based Arquitectura e Vida, the Brazilian Pós published in Sao Paulo, the Jamaican Axis Journal published in Kingston, in a special issue of the 2A Art & Architecture journal published in Dubai, and in two recent AA publications, Environmental Tectonics and Articulated Grounds: Mediating Environment and Culture.

This document provides an introduction to the structure and contents of the MSc & MArch options in Sustainable Environmental Design. It discusses the programme’s aims and learning outcomes, its teaching and learning strategies, its resources and assessment procedures and all other matters relating to its organization and implementation. The AA School has a long history in the teaching and research of sustainable environmental design that goes back some 60 years; a brief summary is given below.
PLEA 2017
EDINBURGH
WELCOME
2.2  AA Chronicle   60 Years of Environmental Design Teaching and Research at the AA School

The AA School’s involvement in the teaching and research of sustainable environmental design dates from the early 1950’s when its Tropical Studies Department was formed to run postgraduate courses in tropical architecture that continued till the early 1970’s. This was followed by the one-year Graduate Diploma in Energy Studies, that was initiated in 1974 in the aftermath of the 1973 energy crisis and delivered annually till 1994. In 1994-95 the Diploma in Environment & Energy Studies was validated as an MA. In the 2005-06 academic year the MA in Environment & Energy Studies was replaced by the 12-month MSc and 16-month MArch in Sustainable Environmental Design. These changes have followed from the programme’s expansion, in design content and technical capabilities, underlining the importance now given to sustainable environmental design internationally within architecture, engineering and urbanism.

The listing below chronicles some key events and developments over these 60 years:

1954-56    The Department of Tropical Architecture (the Tropical School) was established at the AA School under Maxwell Fry. It offered a six-month postgraduate course leading to an AA Certificate in Tropical Architecture for architects from tropical countries and British architects intending to work in the tropics.

1957-71    The AA Tropical School was restructured under Otto Koenigsberger and the course was extended to nine months. The curriculum covered a wide range of subjects encompassing all aspects of climatic design relating to housing as well as aspects of economics, building production and financing, site factors and large scale design. The course was addressed to postgraduate students, but was also open to 5th year AA students as a specialisation option on their final year. Students completing the three-term course were awarded the Diploma in Tropical Studies (Dipl Trop AA). The Department of Tropical Studies engaged in research and consultancy in several countries. In later years the Tropical School’s teaching on appropriate building design for tropical climates was compiled into a book that has since become a classic: the "Manual of Tropical Housing and Building - Part 1 Climatic Design" by Otto Koenigsberger, T.G Ingersoll, Alan Mayhew and S.V. Szokolay, published by Longman.

1973 - 77    Under Gerry Foley and George Kasabov the Rational Technology Unit (Diploma Unit 10) had a pioneering role in the energy debates of the 1970’s. A fairly anarchic bunch of students engaged hands-on with solar and wind technologies, self-building and urban farming, redrawing the map of the UK anticipating the rise in sea level due to global warming. Meetings at the AA debated the role of alternative technology and prospects for alternative societies. The Unit’s 1973-74 publication displayed an impressive range of interests and expertise. Gerry Foley’s "The Energy Question", with Charlotte Nassim, was published by Penguin Books in 1976. George Kasabov curated the exhibition "Buildings – the Key to Energy Conservation" at the RIBA in 1979.
1974- The Energy Studies Programme (later Environment & Energy Studies Programme, AA E+E) embarked on its first academic year in October 1974 as one of three new postgraduate programmes started by AA Chairman Alvin Boyarsky in the restructured Graduate School under Royston Landau. The Energy Programme offered a one-year AA Graduate Diploma and two-year Honours Diploma. It was directed by Robert Drew in its first year, followed by Gerry Foley who took over in the mid-1970s, and by Simos Yannas from 1980.

1976-80 A collaboration with the Essex Council's Architects Department leads to a series of research projects on energy use in school buildings with funding from the Science Research Council, the UK Department of Education and Science and the Department of Energy. The last of these project addressed the topic of energy education and led to its adoption in the curriculum of primary and secondary schools around the country.

1980- Since 1980 some 40 PhD and MPhil research projects were successfully completed on various topics of sustainable environmental design.

1982- Simos Yannas became a founding member of the international PLEA (Passive and Low Energy Architecture) network and was entrusted with the technical programme of the 2nd PLEA Conference that was held on Crete, Greece in 1983. He later served as PLEA Director and continues as permanent Secretary. PLEA has since held its annual conferences in some thirty countries producing over 30 volumes of proceedings and several special issues of scientific journals.

1986- Following a definition study in the early 1980's, AA E+E was awarded a contract from the UK Department of Energy's Energy Technology Support Unit to produce a handbook on housing design in the context of the UK Solar Energy Research Programme. A further contract was awarded to AA Publications for the publication of the two volumes of the handbook. Solar Energy and Housing Design was published in 1994 and continues to be used widely by students and practising architects in many countries.

1992-95 Funding was obtained from the European Commission for a series of projects that were undertaken in collaboration with teams from several other countries. Publications produced included twelve booklets on Building Science and Environment-Conscious Design under an EC Tempus project; a series of books and posters on the Design of Educational Buildings produced under EC Solinfo in 1995; and a two-volume manual on passive cooling produced in 1995 under EC Joule programme.
1995  The AA became an Open University Accredited Institution and the postgraduate Diploma in Energy Studies was validated for the Master of Art (MA) in Environment & Energy Studies.

1995-97  Two open symposia that were organised by Bill Dunster and Simos Yannas on the theme of Sustainability in Architecture in 1996 and 1997 attracted large participation from students and invited architects and engineers.


2003-07  Collaboration with AA Intermediate Unit 4 led to the construction of a structure for a village school in Ghana in January 2003. In the following year the AA E+E Masters group designed and fabricated a movable structure that was erected for testing in Oia, on the Aegean island of Santorini. In 2005 another structure, the Heliotropic Bench, was fabricated at Hooke Park and tested on Santorini. In February 2007 a third structure was fabricated for testing on the campus of the American University of Sharjah, UAE.
2004 & 2009  *Em Busca de uma Arquitetura Sustentável para os Tropicos* (Towards a Sustainable Architecture for the Tropics) by Oscar Corbella and Simos Yannas was published in Rio de Janeiro by Editora Revan; a second edition with Spanish and English introductions was published in 2009.


2005  On the occasion of Simos Yannas' visit to Lisbon for lectures at the Technical University the architectural journal *Arquitectura e Vida* published a lengthy interview in its June 2005 issue illustrated with recent AA E+E projects. Collaboration with UIA Architecture & Renewable Energy Sources Group led to a Symposium at the AA and presentations at the UIA Congress in Istanbul in July 2005 with exhibitions of student work.

2005-  From October 2005, the 12-month Master of Science (MSc) and 16-month Master of Architecture (MArch) in Sustainable Environmental Design replace the Master of Art (MA) in Environment & Energy Studies following the programme's revalidation.

2006  *Roof Cooling Techniques—a design handbook* by Simos Yannas, Evyatar Erell and Jose-Luis Molina was published by Earthscan and shortlisted for the RIBA Book Award for Architecture. The publication of the book and its accompanying simulation software is the culmination of a two-stage European research project with the participation of teams from several countries.

2007  The first MArch candidates in Sustainable Environmental Design gave their final presentations on the 24th January 2007. A major retrospective exhibition of AA E+E projects of the last five years opened the same evening in the Arts Pavilion at Mile End Park in East London.

2007  The year's study trip to the Gulf Region included seminars and symposia in several cities followed by the undertaking of a series of projects that were published in January 2008 in a Special Issue of the *2A Architecture & Art Magazine*. The work was presented at Harvard University’s Centre for Middle Eastern Studies. A structure designed at Hooke Park by the 2006-07 Masters students was tested on the site of the American University of Sharjah, UAE.
Some twenty of the programme’s recent students presented papers based on their MSc and MArch dissertation projects at the PLEA 2008 Conference in Dublin and the PLEA 2009 Conference in Quebec where a large exhibition of the programme’s Term 1 Building Studies was also held. A number of exhibits were also shown at the Ecobuild exhibition in London in early March 2009. Articles were contributed to several books.
2009-12  AA SED took part in a three-year collaborative international project "Environmental Design in University Curricula and Architectural Training in Europe" (EDUCATE) sponsored by the European Commission with six other Schools of Architecture.

2011-12  Study trips to Barcelona and Madrid and exhibition of work at PLEA 2011 in Belgium including several oral presentations of student papers, and at the UIA Congress in Tokyo in September 2011. Publications in books and conference proceedings.

2011-12  Symposium on Ecological Design Research held at the AA (above left) with speakers from among the authors of a special issue of *AD* Architectural Design.


2013-14  *Projects in India* an exhibition at the PLEA 2014 Conference in Ahmedabad, India (below) of Dissertation Projects by twelve of the programme’s Indian students illustrating a wide range of urban contexts, building programmes and climatic conditions including both MSc and MArch Dissertations.
2014-15 SED display at the AA end of year exhibition July 2015 (above). Andrea Rossi and Pierluigi Turco win the PLEA 2015 Best Project Award in Bologna for their MArch Dissertation Project for a Migrants Centre in Lampedusa (below). Over a dozen other papers presented by SED staff and students at the same conference.
2015-16  SED team wins Labgrade Design Competition for the refurbishment and extension of a hotel in North Italy held in Milan in May 2016. Juan Montoliu and Jorge Rodriguez win Best Paper Award at the PLEA 2016 Conference held 9-11 July 2016 in Los Angeles. Ten other papers were presented by SED students and recent graduates at PLEA 2016 (see section 8.2 for list of papers).

2016-17  Collaboration with London architectural and engineering practices continued, initially in the Term 1 Building Studies and later through project reviews and presentations of SED projects to the practices.

In Term 3, project presentations by London-based SED graduates were followed by roundtable discussions with current SED students exploring the relationship between research and practice in relation to current and future prospects of sustainable environmental design (photo above). SED graduates included Meital Ben Dayan SED MSc 2012, Kimmy El’Dash SED MArch 2015, Ronak Gawanwala SED MArch 2013, Natasa Gravani SED MSc 2013, Mina Hasman SED MArch 2012, Annie Laurie SED MArch 2015, Maria Lumbreras SED MSc 2014, Jeewon Paek SED MArch 2011, Malgorzata Tomczuk SED MSc 2016, Olga Tsagkalidou SED MSc 2015 and Vera Sarioglu SED MSc 2013.

In May 2017 the SED programme was revalidated as part of the 5-year review of postgraduate Masters programmes. The Revalidation Panel commended AA SED for its coherence, cultivation of research methods and comprehensiveness of its documented archive of programme resources and outputs.

In July 2017 some 14 papers were presented by SED graduates at the PLEA 2017 conference in Edinburgh in (see section 8.2 for list of papers based on SED MSc and MArch dissertation projects.)

From Rafael Alonso Candau MArch Dissertation Project 2017 *Whole Life Carbon in Office Building Design in London*
2.3 MSc + MArch Sustainable Environmental Design Research Agenda

In 2017-18 AA SED will be embarking on its thirteenth cycle of the MSc and MArch in Sustainable Environmental Design. The taught programme will continue to develop its research agenda on Refurbishing the City. Student projects will further develop the vocabulary of sustainable environmental design for a wide range of climates, building types and urban environments. Since the first cycle of the MSc / MArch in 2005-06, over 500 research projects have been completed by the programme’s students for sites in some 60 countries and 150 cities in climatic regions and urban contexts spread between latitude 0° and 60° North and South and in longitudes from 125° West to 140° East. AA SED cohorts have achieved outstanding academic results in the programme’s latest completed MSc and MArch cycles of 2015-16 and 2015-17 respectively. In the 2016-17 academic year the joint MSc / MArch teams achieved better marks than the previous year on their Term 1 Building Studies with three of these teams invited to present their projects to the collaborating design offices and occupants involved. These included on site measurements and computational studies of two AHMM Architects’ buildings at William Street Quarter, studies of Architype Architects’ recently completed Mandeville and Horsenden Schools, and comparison of one of Walter Segal’s original self-built dwellings with one recently refurbished. Term 2 design research focused on alternative design proposals for a site near Peckham Library in South London. Dissertation work is well advanced with 15 of the students who had joined the programme in September 2016 continuing into 2017-18 for the last stage of the MArch.

Some 70 papers co-authored by staff and students were published in journals and conference proceedings in the five years 2012-17 since the programme’s last revalidation. A book is in preparation with support from an RIBA Research Award on environmental studies of selected London buildings undertaken as part of Term 1 course work. Publication of research papers based on MSc and MArch Dissertation projects will continue into 2017-18.

In 2017-18, Refurbishing the City, a continuing SED research agenda, will start a new chapter of collective design research in collaboration with London architectural and engineering practices. This will involve environmental performance studies of selected London buildings in Term 1, followed in Term 2 by design research based on the findings of these building studies. In Terms 3 and 4, MSc and MArch students will embark on individual dissertation projects that will extend into many other cities and climatic regions. Recent SED dissertation projects have addressed warm climates, passive environmental features, outdoor living and occupant-centred adaptive strategies encompassing home, work, learning and mixed-use environments.

Refurbishing the City Projects

London Building Studies, Term 1
With London as laboratory and project teams that combine MSc and MArch students, on-site observations and environmental measurements in selected buildings will be followed by use of advanced computational tools to investigate the relationship between building, climate and occupants highlighting the role of empirical and analytical investigations in informing design research and architectural practice.

Design Research, Term 2
The insights gained from the Term 1 building studies will provide the starting points for design research applying the methodology and computational tools of adaptive architecturing to address key issues relating to urban morphology, climate change, building and lifestyle trends and technological developments that shape the future of the city.

MSc & MArch Dissertation Research, Terms 3 & 4
Individual research for the MSc and MArch dissertation projects provides the opportunity to explore design options and computational studies across climatic regions, building types, design specifications and operational conditions addressing social and environmental research agendas of direct interest to their home context.
3 PROGRAMME SPECIFICATION: AIMS AND LEARNING OUTCOMES

Common aims of the MSc and MArch in Sustainable Environmental Design are to provide objective criteria for conceiving, defining, designing and assessing the environmental functions, attributes and performance of buildings and outdoor spaces. Taught courses, project work and research toward dissertations aim at equipping participants with cognitive, experiential, analytic and generative skills enabling them to engage in interdisciplinary design research and practice. The main areas of application of the knowledge and skills provided by the programme are urban environments and individual buildings, new or existing, in different climatic and geographic contexts. Project work explores the relationship between form and performance, especially the dynamic and adaptive potential of the building envelope in different climatic regions and for different building types. Learning outcomes are listed below. These are listed under groupings relating respectively to the acquisition of knowledge and understanding, to specific skills and transferable skills. Most are common to both the MSc and MArch options. Those specific to MSc or MArch are identified in the listings below.

3.1 Knowledge and understanding

On successful completion, MArch / MSc in Sustainable Environmental Design participants will be able to:
A1 demonstrate knowledge and understanding of key concepts of sustainable environmental design
A2 demonstrate familiarity with building energy modelling and simulation tools and understanding of their applicability to inform design decisions
A3 identify and characterise significant architectural typologies and built precedents
A4 demonstrate understanding of the environmental attributes of historic and contemporary buildings
A5 take a critical position in relation to wider issues and objectives of sustainability
A6 take a critical position in relation to parallel contemporary tendencies in architecture and urbanism.

3.2 Subject specific skills and attributes

On successful completion, MArch / MSc in Sustainable Environmental Design participants will be able to:
B1 undertake critical reviews and appraisals of key technical and theoretical aspects of environmental sustainability in architecture and urban design
B2 plan, implement, process and interpret fieldwork involving observations, surveys and measurements in and around buildings and outdoor spaces using specialist instruments and data acquisition techniques.
B3 use specialised analytic tools and performance assessment techniques to inform design decisions and assess the environmental impact and performance of buildings and urban spaces
B4 identify, compare and assess environmental attributes of buildings using on-site observations and measurements, as well as comparative performance data and calculated results
B5 assess the potential offered by new materials and technologies
B6 (MSc) formulate guidelines and proposals for new or existing buildings taking account of context, climate, and occupancy
B7 (MArch) develop and test original design applications.

3.3 Transferable skills and attributes

On successful completion, MArch / MSc Sustainable Environmental Design participants will be able to:
C1 use appropriate analytical tools and other research techniques to formulate and test research hypotheses
C2 engage in environmental research as a member of interdisciplinary international team.
C3 use a variety of media to communicate effectively with clients and colleagues.
C4 continue expanding their knowledge using the skills acquired on the course.
3.4 Curriculum Map

The Curriculum Map below shows how outcomes are deployed across the study programme. It relates the delivery and assessment of the learning outcomes listed above to the different inputs and outputs of the programme. The tabulation indicates which study units assume responsibility for delivering (shaded) and assessing (X) particular learning outcomes. To simplify the tabulation, lecture series have been grouped under three broad categories relating respectively to principles and theories of sustainable environmental design; practice and built examples; and analytic tools. Each of these is identified in terms of the learning outcomes delivered. Project workshops and individual and group tutorials are shown as relating mainly to the assessment of learning outcomes though in practice they also contribute to the delivery of the outcomes. Assessed work in the form of projects, essays, technical studies and dissertations is listed as representing both delivery and assessment of learning outcomes.

| Curriculum Map | A1 | A2 | A3 | A4 | A5 | A6 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Knowledge and understanding of key concepts of sustainable environmental design | | | | | | | | | | | | | | | | |
| of building energy modelling and simulation tools and applicability to design | | | | | | | | | | | | | | | | |
| of significant built precedents | | | | | | | | | | | | | | | | |
| of environmental attributes of historic and contemporary buildings | | | | | | | | | | | | | | | | |
| of wider issues of environmental sustainability | | | | | | | | | | | | | | | | |
| critical position in relation to tendencies in architecture and criticism | | | | | | | | | | | | | | | | |
| Specific skills and attributes | | | | | | | | | | | | | | | | |
| reviews of technical and theoretical aspects of environmental sustainability | | | | | | | | | | | | | | | | |
| plan, implement, process and interpret fieldwork in buildings and outdoors | | | | | | | | | | | | | | | | |
| use of analytic tools and performance assessment techniques in design | | | | | | | | | | | | | | | | |
| assess the potential offered by new materials and technologies | | | | | | | | | | | | | | | | |
| guidelines for buildings taking account of climate, site and occupancy | | | | | | | | | | | | | | | | |
| use, develop and test original design applications | | | | | | | | | | | | | | | | |
| (MArch) | | | | | | | | | | | | | | | | |
| Transferrable skills and attributes | | | | | | | | | | | | | | | | |
| use analytic tools and research techniques to test hypotheses | | | | | | | | | | | | | | | | |
| engage in interdisciplinary environmental research | | | | | | | | | | | | | | | | |
| use a variety of media to communicate effectively | | | | | | | | | | | | | | | | |
| continue expanding their knowledge using the skills acquired | | | | | | | | | | | | | | | | |

Terms 1-3 Lecture Series

<table>
<thead>
<tr>
<th>Terms 1-3 Lecture Series</th>
<th>PRINCIPLES &amp; THEORIES</th>
<th>PRACTICE &amp; EXAMPLES</th>
<th>TOOLS &amp; TECHNIQUES</th>
</tr>
</thead>
</table>

Terms 1-4 Workshops & Tutorials

<table>
<thead>
<tr>
<th>Terms 1-4 Workshops &amp; Tutorials</th>
<th>TOOLS WORKSHOPS</th>
<th>DESIGN WORKSHOPS &amp; TUTORIALS</th>
<th>DISSERTATION SEMINARS &amp; TUTORIALS</th>
</tr>
</thead>
</table>

All Assessed Work

<table>
<thead>
<tr>
<th>All Assessed Work</th>
<th>PROJECT I</th>
<th>ESSAYS</th>
<th>TECHNICAL STUDIES</th>
<th>PROJECT II</th>
<th>MArch DISSERTATION</th>
<th>MSc DISSERTATION</th>
</tr>
</thead>
</table>
4 TEACHING AND LEARNING STRATEGIES

The programme’s Lecture Courses are complementary and practice-oriented. In conjunction with the weekly workshops, seminars and tutorials they provide the knowledge, analytic tools and guidance needed for undertaking real-life project work. On the MSc / MArch Sustainable Environmental Design, projects are cross-course vehicles focused on different aspects of the design, making, experience and assessment of architectural spaces indoors and outdoors. In Terms 1 and 2, project work is undertaken in teams of four that combine MSc and MArch students. Dissertation research is started collaboratively under thematic groupings and continued individually so that students can contextualise their projects for the climatic and other specificities of their chosen geographic region and urban environments.

4.1 Lecture Courses
Attendance of all the lectures and other weekly events offered by the programme is compulsory for Phase I students registered for the MSc / MArch in Sustainable Environmental Design. In Term 1 the lecture input provides a common cognitive background and the skills and tools needed for project work. In addition, lectures address current issues and professional concerns thus providing a critical overview of the research directions pursued by the programme and by the field as a whole. Term 1 lectures are given by the programme’s regular staff so as to ensure continuity and direct support to project work. In Terms 2 and 3 many of the lectures are given by invited researchers and designers. This provides diversity of opinion, variety of input, and links with research and practice outside the programme. The structure and overall contents of the taught programme are reviewed annually as well as at the beginning and end of each term. Throughout the year lecture topics are selected so as to feed directly into each term’s project agendas. Lectures are stored in electronic format and are available to students for further study after their delivery. Section 7 of this Guide introduces the programme’s core lecture series and section 8 provides Reading Lists organised according to key topics of interest. Owing to the vast amount of published information in the various fields of sustainability, the reading lists given here are focused on items that have proven to be of direct relevance to the programme’s areas and project work.

4.2 Seminars & Workshops
The Research Seminar is a weekly forum on information sources, research methods, report writing and visual presentation. The Modelling & Simulation Workshop provides hands-on training in the use of a wide range of specialist tools and software; it aims to develop the empirical and analytical skills required for field studies and design research.

4.3 Study Trips & Special Events
Study trips involve visits to buildings of interest, meetings with designers and researchers and taking part in international conferences and other events. In the early weeks of the year visits will be for fieldwork within London. A study trip will take place during Term 2 or 3.

4.4 Team Projects
On the MSc / MArch Sustainable Environmental Design, projects are the vehicles for integrating the inputs of all of the taught programme’s lectures and workshops. Projects are based on realistic briefs and sites closely related to the kind of work the programme’s graduates will be expected to undertake in practice after graduation. Project work is supported by weekly tutorials and monitored by regular presentations and review sessions. Each team project accounts for a total of 35 credit units (a nominal 350 hours of student effort including attendance of related courses) per student including Technical Studies. Assessment is discussed in section 6. Project learning outcomes and assessment criteria are discussed in section 9 of this Guide and the organisation and submission of project reports is discussed in section 11.

4.5 Research Papers
Research papers are expected to provide a critical overview of published literature on selected topics relating to the programme’s lecture courses and project briefs. Choice of topic, literature research and writing of the research papers are supported by regular individual tutorials. Research papers should be targeted at between 3,000 and 4,000 words. Each paper represents 10 credit units (a nominal 100 hours of student effort including attendance of related courses). Assessment is discussed in section 6. Learning outcomes and assessment criteria are listed in section 9 of this Guide and the organisation and submission of research papers is discussed in section 11.
4.6 Technical Studies
Technical studies may involve fieldwork and/or use of computational tools introduced by the taught programme. They are undertaken as part of project work and shared between project team members. Support is in the form of weekly tutorials and regular presentations of research results. A Technical Studies submission represents 10 credit units (a nominal 100 hours of student effort including attendance of related courses). Assessment is discussed in section 6. Learning outcomes and assessment criteria and guidelines are listed in section 9 of this Guide and the organisation and submission of reports is discussed in section 11.

4.7 Dissertation Projects
The Dissertation Project represents 90 credit units, 50% of the total credit for the MSc and MArch in Sustainable Environmental Design. Dissertation Projects are vehicles for undertaking a significant piece of research that reflects the programme's areas of specialisation and students' personal interests, backgrounds, special skills and plans for the future. The MArch dissertation research should lead to a design application for a specific site and building programme. MSc dissertations deal with the design applicability of their research outcomes and as such have a broader geographic, climatic and typological scope than the MArch. A list of all completed MSc and MArch Dissertation Projects is included in the Appendix highlighting differences in the respective research agendas. Dissertation topics are decided by the end of Term 2 and confirmed with the submission of written outlines aimed at providing evidence that the proposed topic is within the student’s grasp, capabilities and workplan. A brief first stage of dissertation research lasting a couple of weeks at the beginning of Term 3 may be undertaken collaboratively. Supervision of dissertation work is through weekly individual tutorials. There are progress presentations attended by the programme’s teaching staff and external reviewers. Learning outcomes and assessment criteria are discussed in sections 6 and 9 of this Guide and the choice of dissertation topics and the planning, development and submission requirements of Dissertation Projects are discussed in detail in section 10. A list of completed and continuing Dissertation Projects is included in the Appendix.

4.8 Tutorials
The overall direction and progress of student work within the Masters programme, and the development of projects and other course work are monitored and supported by weekly individual and/or team tutorials. Staff are available for tutorials by appointment and/or at pre-arranged times.

4.9 Project Presentations & Reviews
Project presentations by individual students and project teams are regular events aimed at monitoring progress as well as developing students’ oral and visual presentation skills.

4.10 Student Feedback
Student feedback to the taught programme’s structure, content, delivery and teaching methods is sought throughout the year. Such feedback is important in helping to plan forthcoming events of following terms, as well as for improvement and updating of the contents of the programme from year to year. A written questionnaire is submitted by outgoing students at the end of the course.

5 RESOURCES
General facilities that are available to all students will be introduced during Introduction Week before the beginning of the academic year. These include the School's Library, Computer Lab, Prototyping Labs and Materials Workshop. The AA Student Handbook provides detailed information on all aspects of the AA School’s organisation, resources and facilities, and its academic and administrative policies. The resources and facilities listed in this section are those specific to students on the MSc / MArch in Sustainable Environmental Design.

5.1 Reading Lists & Reference Material
Material that needs to be available to students at all times is mostly provided as a download from the programme's folder on the School’s File Server (\jupiter\Unit-Space\EE). To have access to the EE Folder students must first register with the AA Computer Lab. The EE folder contains a comprehensive collection of dissertations and team projects from previous years in pdf format. Printed copies of all team
projects and dissertations are kept in the Programme’s Offices. Lectures, software, project briefs and all other material required on a daily basis for the course are also stored in this folder for access by the programme’s current students. The AA Library (www.aaschool.ac.uk/library) stocks all of the books listed on the programme’s Reading Lists (see Section 8 of this Guide). A selection of material from these Lists is also held on a separate shelf at the Library for easy access. For scientific papers the AA Library provides access to the Science Direct site from where papers published in journals such as Energy and Buildings can be downloaded for study. The Open University provides library resources that can be accessed from: www.open.ac.uk/library/libpartnerships.

5.2 Computing
Students are expected to own a laptop computer running Windows. Ownership of a fast inkjet printer is strongly recommended. Software introduced by the taught programme for use on project work will be made available as needed. Students are required to observe the Studio Rules of Conduct that apply to the use of software within and outside the School.

5.3 Communications
Students on the programme are required to confirm their email addresses on arrival and to check their emails on a daily basis for updates on regular events, tutorials and reviews. Most spaces within the School provide wireless Internet access.

5.4 Scientific Instruments
The programme owns a wide range of portable scientific instruments for taking measurements of environmental variables on field studies as well as in the SED Studio. Instructions on how to use the instruments and how to record, process and present the results are given by the Term 1 “Tools” course and accompanying workshops. To borrow instruments students must place a formal request with the programme staff responsible for their keep. Instruments are available on a first come first served basis according to students’ research requirements. Especially early notice is needed when they are to be taken abroad.

5.5 Modelmaking & Prototyping
The AA School has in-house facilities for fabrication and model making. The large workshops at Hooke Park in Dorset offer opportunities for producing experimental structures such as those fabricated by the programme’s students in previous years. Students wishing to use the AA School’s Bedford Square workshops must attend introductory training sessions on the first week of the academic year.

5.6 Studio
The programme’s studios are open from early in the morning till late evening on weekdays and weekends. All of the programme’s specialist software can be run from the studio and the programme’s scientific instruments are kept there.

6 ASSESSMENT
All submissions are assessed and marked by two members of the programme’s teaching staff. Submitted work is also reviewed by the External Examiners whose role is to ensure fair and objective marking and the maintenance of high academic standards. All marks and assessments are reviewed by an Examination Board composed of the programme’s teaching staff and External Examiners. The Examination Board has the responsibility for the final marking and for making recommendations on the award of distinctions or the need for resubmission. Notification of results is given to students by the Registrar’s Office through the Graduate School’s Administrative Coordinator.

Submissions for the MSc / MArch in Sustainable Environmental Design are assessed on:
1. Knowledge and understanding of the principles introduced by the taught programme
2. Clarity of the approach followed in the investigation of research questions and hypotheses
3. Application of critical faculties and observational skills
4. Use of fieldwork and analytical tools to test hypotheses and find new data
5. Ability for comparative analysis and interpretation of results
6. Application of new knowledge and tools in design research and practice
7. Demonstration of team effort, innovative thinking and creativity
8. Clear and concise writing and presentation of project results
9. Referencing of sources of information using agreed conventions
10. Adherence to project briefs and other preset requirements

The marking of projects, essays and dissertations is on a scale of 0-100% with pass mark at 50% and grades as shown below. These are common to all Masters Programmes at the AA School.

<table>
<thead>
<tr>
<th>Mark</th>
<th>Grade</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 and above</td>
<td>A</td>
<td>Excellent Pass / Distinction</td>
</tr>
<tr>
<td>65-69</td>
<td>B+</td>
<td>High Pass</td>
</tr>
<tr>
<td>60-64</td>
<td>B</td>
<td>Good Pass</td>
</tr>
<tr>
<td>57-59</td>
<td>C+</td>
<td>Satisfactory Pass</td>
</tr>
<tr>
<td>54-56</td>
<td>C</td>
<td>Adequate Pass</td>
</tr>
<tr>
<td>50-53</td>
<td>D</td>
<td>Low Pass</td>
</tr>
<tr>
<td>49 and below</td>
<td>F</td>
<td>Fail</td>
</tr>
</tbody>
</table>

The marks awarded by the internal assessors are averaged to establish an agreed mark for each submitted piece of work. An average mark is then calculated for the course work as a whole using the credit rating of each team project and research paper. Section 9 lists the credit ratings of each of these. To qualify for the masters award students must attain the 50% threshold mark on both the course work and their Dissertation Project. An overall mark is then calculated with the course work representing half of the total credits and the Dissertation accounting for the other half. The MSc / MArch is awarded "with Distinction" when the combined weighted average of the course work and dissertation marks is 70% or higher.

Students who fail to attain a pass mark on a team project or research paper will be required to resubmit the failed item and pass to be eligible to continue on the course. Students who fail to attain an overall mark of 50% on their dissertation will be allowed to resubmit once for the Examination Board of the following academic year. Failure to resubmit or to achieve a pass mark on resubmission will lead to disqualification from the degree.

Non-submission or late submission (7 or more days after the deadline) of team projects, research papers or dissertations without accepted mitigating circumstances is marked as Fail. In those cases, resubmission will be subjected to mark capping at 50%. Any pieces of work submitted up to seven days after the deadline without accepted mitigating circumstances will have 10 marks deducted for each calendar day of lateness incurred, down to the 50% mark. Deferment of a submission may be considered in case of illness or other exceptional circumstances. In such cases the deferred submission is classed as a first submission.

The AA School requires all students to sign a declaration form confirming that the contents of each of their submissions is their own work and that reference to the work of others is duly acknowledged following agreed conventions discussed in Section 10 of this Guide. Failure to provide such acknowledgment, whether deliberate or unconscious, constitutes plagiarism. Plagiarism is a most serious academic offence that can lead to disqualification from the degree.

For more detailed information on the above see AA Graduate School Academic Regulations and the AA Student Handbook.

7  PROGRAMME STRUCTURE & CORE COURSES

The taught programme for the MSc and MArch in Sustainable Environmental Design combines lecture series, seminars, cross-course team projects, fieldwork, software workshops, and other activities including building visits and study trips. These formal events and activities provide the conceptual, empirical and analytical tools and information needed to address environmental issues in design research and architectural design. Projects provide the main vehicle for student work. Project work is closely supervised by the programme’s teaching staff in regular individual and group tutorials. Dissertation projects represent the largest component of student work. Topics for dissertation projects are decided half way through the programme’s duration and the work is developed under close individual supervision.
Students are accepted on the programme either for the MSc or for the MArch. Switching degrees is only allowed under exceptional circumstances and then only to the shorter degree. Students with compelling reasons for such change should approach the programme director by the beginning of Term 2. They will be required to submit a written statement explaining how this may influence their dissertation work. In considering such applications the programme staff will take account of students’ Term 1 course work results.

The taught programme is divided into four terms. Most of the lecture content is delivered in the first two terms (October to March inclusive) and is common to both MSc and MArch students. Over the same period, course work combines team projects, technical studies and individual research papers. Term 1 and 2 project teams combine MSc and MArch students. In Term 3 students embark on the research for their individual Dissertation Projects. MSc students work on their Dissertation projects non-stop through the summer for submission before the start of the next academic year. MArch students are expected to take a summer break returning to the School in Term 1 of the following academic year. Both MSc and MArch dissertation projects start with the formulation of research agendas derived from literature research and study of built precedents. Students then proceed with fieldwork and computational studies aimed at identifying potential for worthwhile improvements that serve the programme’s stated objectives. MSc dissertations present their research outcomes by mapping and documenting their applicability across the range of geographic, climatic or programmatic situations encompassed by the students’ chosen research agenda. The MArch dissertation research is expected to lead to a design application for a specific site and building programme of the students’ choice.

Credits for course work and dissertation projects are given for each 10 hours of learning time. Learning time includes lectures, seminars, course reading, workshops and tutorials, as well as time spent on projects, essays and other assigned tasks. A total of 180 credits is required for the MSc / MArch in Sustainable Environmental Design representing 1800 learning hours over 45 weeks. Course work is assigned by academic term, but extends into the vacation periods. Credits are distributed between the four terms of the year as follows:

i. Term 1 Project I & Research Paper 1 45 credits 25% of total credits
ii. Term 2 Project II & Research Paper 2 45 credits 25% of total credits
iii. Terms 3&4 Dissertation Project 90 credits 50% of total credits

For a detailed breakdown of credits and a listing of the respective aims, learning outcomes and assessment criteria for each item see section 9 of this Guide.

Summary outlines of the taught programme’s lecture courses and seminars are given below. All weekly events and project work take place in the SED studio which is open seven days a week. Regular courses and Term 1 projects start on the second week of the academic year following two weeks of induction which include special events and introductory activities. The first week of induction is the AA School’s Introduction Week for all new students. This includes introductions to the School’s facilities and site visits around London. Information on Introduction Week events and activities will be provided at registration. The AA postgraduate programmes are introduced on Week 1 of the academic year. The SED programme’s incoming MSc and MArch students will introduce themselves with short presentations on that week.

Definitive listings of the programme’s weekly events are published in the weekly Events List available in printed form and online. Required and Recommended readings related to individual courses are listed in Section 8 of this Guide.

Lecture Courses & Workshops

Sustainable City, Term 1
This course reviews theories of urban sustainability and introduces the instruments and tools applied to its assessment. The effects that urban morphology can have on microclimate, energy consumption and climate change are illustrated with case studies of new and refurbished schemes in different urban contexts with scales ranging from the regional to that of the urban block.
Adaptive Architecturing, Term 1
Providing local solutions to global issues requires an understanding of what makes a good environment for its occupant and how this varies across climates, building types and individual preferences. How does architecture contribute to this and can it reclaim its historical role as a tool of sustainable environmental design? This course introduces a generative framework for an adaptive, culturally sensitive occupant-centred architecture aiming for a symbiotic relationship with the city.

Environmental Simulation & Performance Assessment Tools, Terms 1 & 2
This hands-on course runs in day-long weekly sessions that follow step-by-step the weekly tasks of the Term 1 and 2 team projects introducing the analytical procedures and computational tools that drive the SED research methodology. The course begins by introducing fieldwork techniques starting with indoor and outdoor visual observations and scientific measurements, followed by diagnostic interpretation, computer modelling of selected spaces, calibration of models with measurements, simulations of solar, thermal, airflow and daylighting processes, and assessment of results against targets and benchmarks. Completion of this process initiates the application of modelling and simulation to inform design and assess the environmental merits of architecture practice. A range of computational tools will be introduced over Terms 1 and 2. Their application will be explored initially through the team projects thus providing the essential expertise that is required for undertaking the MSc and MArch dissertation research in Terms 3 and 4.

Environmental Design Primer, Terms 1 & 2
This course introduces key areas of sustainable environmental design research and practice as these relate to architecture and urban design. Topics include urban climatology and the theories of environmental comfort; the physics and architecture of natural light, airflow and thermal processes; the ecology and environmental performance of materials; renewable energy technologies in the urban environment; and the science and art of measurement and performance assessment.

Lessons from Practice, Term 2
This course involves a number of architects, engineers and researchers invited to present recent projects that illustrate their philosophy practice and experience of sustainable environmental design. Individual presentations are followed by roundtable sessions providing a platform for discussing specific issues as well as the relationship between research and practice. The course includes building visits and study trips in the UK and abroad.

Research Seminar, Terms 1–4
In Terms 1 and 2 the seminar provides a regular forum for discussing the literature research and critical reading expected in support of the two individual research papers that will act as the foundations for dissertation projects undertaken in Terms 3 and 4. During the latter the seminar complements the weekly individual tutorials providing specific support on the contents and production of the dissertation.

Studio Projects

London Building Studies, Term 1
With London as laboratory and project teams that combine MSc and MArch students, on-site observations and environmental measurements in selected buildings will be followed by use of advanced computational tools to investigate the relationship between building, climate and occupants highlighting the role of empirical and analytical investigations in informing design research and architectural practice.

Design Research, Term 2
The insights gained from the Term 1 building studies will provide the starting points for design research applying the methodology and computational tools of adaptive architecturing to address key issues relating to urban morphology, climate change, building and lifestyle trends and technological developments that shape the future of the city.

MSc & MArch Dissertation Research, Terms 3 & 4
Individual research for the MSc and MArch dissertation projects provides the opportunity to explore design options and computational studies across climatic regions, building types, design specifications and operational conditions addressing social and environmental research agendas of direct interest to their home context.
8 READING LISTS & INTERNET SOURCES

8.1 Reading Lists & Information Sources

The published literature on the topics covered by the SED programme is vast and continues to grow rapidly. Random reading and uncritical internet surfing are strongly discouraged. The items listed here have been carefully selected to match the specific objectives and learning outcomes of the taught programme. They include recent books and papers as well as earlier publications that have stood the test of time. Items preceded by an ‡ are Required Reading. These must be sought and scrutinised carefully early in the year as they deal with material that is essential to the taught programme and SED project work. Items marked with an † are Recommended Reading. These contain important information and technical data that will be needed in the course and project work. Other items can be consulted in due course. For clarity and ease of use, the books and papers listed here have been grouped under the following thematic categories:

- Building Examples & Case Studies
- City microclimates, Design of Outdoor Spaces
- Comfort, Post-Occupancy Evaluation, Behavioural Studies
- Daylighting
- Environmental Design Principles
- Environmental Engineering
- Environmental Design Data & Assessment
- Materials & Construction
- Passive Heating & Cooling
- PLEA Conference Proceedings
- Sustainability Theories & Issues
- Ventilation

Books and papers that relate to more than one topic may appear more than once. The symbol < see also: > is used to cross-reference the thematic categories; it also highlights additional bibliographical sources. All of the publications listed here can be consulted at the AA Library in printed and/or electronic forms. Some of the Required and Recommended items can be downloaded in pdf format from the programme’s EE folder which is on the AA School’s File Server. These items are identified below with [FS]. Access to the AA File Server requires registration with the AA Computer Lab at the beginning of the academic year. Items available on CD or memory stick are identified below with [CD].

The AA Library provides online access to numerous resources including scientific and architectural journals and technical guides with relevant information for the SED course. Students must follow the induction events organised by the Library. The AA Library can also order copies of papers for students through the British Library. Open University library resources are also available to AA students and can be accessed at: www.open.ac.uk/library/libpartnerships. Advice on reading and discussion of selected readings will be a regular feature of the weekly Research Seminar in Term 1. Further reading material will be introduced as the year progresses.

Built Examples, Case Studies


City Microclimates, Design of Outdoor Spaces


See also http://www.metoffice.gov.uk/climatechange/

**Comfort, Post-Occupancy Evaluation, Behaviour Studies**


Baker N.V. (2001). *We are really outdoor animals*. Moving comfort standards in the 21st century Conf. [‡]


See also: PROBE (Post-occupancy Review of Buildings and their Engineering) case studies at: www.usablebuildings.co.uk/

**Daylighting**


See also The European Database of Daylight and Solar Radiation www.satel-light.com/core.htm
Environmental Design Principles

† Ford, B., R. Schiano-Phan, E. Francis (Eds 2010). The Architecture & Engineering of Downdraught
Cooling. PHDC Press.
Gething, B. and K. Puckett (2012). Design for Climate Change. RIBA.

see also sections on: Passive Heating and Cooling; Ventilation; Daylighting; Solar Control.
see also multilingual glossary of terms: www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf

Environmental Design Data & Assessment

of Building Services Engineers, London. [FS]
Jankovic, L. (2012). Designing Zero Carbon Buildings - using dynamic simulation methods. Routledge,
RIBA (no date). Climate Change Tools. Royal Institute of British Architects. See in particular the
booklets on Whole Life Assessment for Low Carbon Design and Carbon Literacy Briefing.
no. 23, pp237-249, Elsevier Science.
see also: Specialist environmental software used on SED project work.

see also: BRE Green Guide www.bre.co.uk/greenguide

see also: BREEAM www.breeam.org/

see also: CarbonBuzz www.carbonbuzz.org/

see also: PROBE (Post-occupancy Review of Buildings and their Engineering) case studies at: www.usablebuildings.co.uk/

see also: UK Building Regulations and Building Research Establishment (BRE) Publications.

Materials & Construction Techniques


see also Environmental Design Principles & Data, Engineering Manuals, Environmental Analysis Tools & Data.

Passive Heating & Cooling


see also: Daylighting; Design Principles; Ventilation

PLEA Conference Proceedings

PLEA 2017 Edinburgh; see online at: https://plea2017.net/
PLEA 2016, Los Angeles, USA; see AA Library for proceedings.
PLEA 2015, Bologna, Italy see Book of Abstracts and online at plea2015
PLEA 2014, Ahmedabad, India see online at: plea2014.in/proceedings/
PLEA 2013, Munich, Germany see online at: plea-arch.org
PLEA 2012, Lima, Peru see online at: plea-arch.org
Eindhoven Technical University. [CD]


– see plea-arch.org for free access to PLEA Proceedings online
– see AA Library for printed copies of PLEA Proceedings from 1982 to 2011.

Sustainability Theories & Issues


Ventilation


8.2 AA SED Staff & Student Publications 2012-17

2017


2016


Over a dozen papers were presented by AA SED at PLEA 2015 held September 2015 in Bologna, Italy (left: PLEA 2015 Parallel Sessions; right: Pavitra Sanath Kumar (AA SED MSc 2014) presenting her dissertation project on Jaalis in one of the sessions).

2015


2014


Projects in India. An exhibition of 12 AA SED Dissertation Projects curated by Simos Yannas and displayed at CEPT University Ahmedabad on the occasion of the PLEA 2014 Conference.


2013


Exhibition of 12 AA SED Dissertations on India at the PLEA 2014 Conference in Ahmedabad, December 2014


2012


*For pre-2012 AA SED publications see staff CV.*
8.3 Internet Sources

**AJ Sustainability**
http://www.architectsjournal.co.uk/designingbuildings/sustainability/index.html

**Biomimicry Database**
http://database.portal.modwest.com/start.php

**BUILD UP**: European portal for energy efficiency in Buildings
http://www.buildup.eu/

**British Library**
http://www.bl.uk/

**Building Green**
www.buildinggreen.com

**Building Research Establishment (BRE)**
www.bre.co.uk

**CIBSE**
www.cibse.org

**Construction Resources**
Ecological building materials
www.constructionresources.com/

**Department of the Environment, UK**: Sustainable development, building regulations, etc.
www.defra.gov.uk
www.sustainable-development.gov.uk

**Earth Systems Environmental Virtual Library**
http://earthsystems.org/Environment.shtml

**ECOark Environmentally Friendly Projects and Urban Ecology Initiatives (Norway)**
www.ecoarc.net

**EDUCATE**
www.educate-sustainability.eu/

**EnergyPlus.net**
Documention

**European Commission Research**
http://ec.europa.eu/research/research-eu/

**Eurostat European Statistics**
http://europa.eu.int/comm/eurostat/

**Florida Solar Energy Center**
Building Case Studies and other information
www.fsec.ucf.edu/bldg/baihp/casestud/index.htm

**Global Eco-Village Network**
www.gaia.org/index.htm

**Grasshopper for Rhino**
http://www.grasshopper3d.com/

**Green Building Council**
www.ukgbc.org

**Housing Energy Efficiency, UK**
www.housingenergy.org.uk

**IEA Energy in Buildings & Communities**
www.iea-ebc.org

**International Energy Agency Renewable Energy Projects**
http://www.caddet-re.org/

**International Institute for Sustainable Development**
www.iisd1.iisd.ca

**International Union of Architects**
www.uia-architecture.org

**Lawrence Berkeley Laboratory**
www.lbl.gov/

**London Ecological Footprint**
www.citylimitslondon.com

**Macquarie University’s Adaptive Comfort Project**
http://atmos.es.mq.edu.au/~rdedear/ashrae_rp884_home.html
MIT Design Advisor
http://designadvisor.mit.edu/design/

National Refurbishment Centre:
http://www.rethinkingrefurbishment.com

NCEUB Network for Comfort and Energy Use in Buildings
www.nceub.org.uk

Open University
www.open.ac.uk

Open Studio / Energy Plus
www.openstudio.net/

Passive and Hybrid Downdraught Cooling
www.phdc.eu

PLEA (Passive and Low Energy Architecture) Sustainable architecture and urban design
www.plea-arch.org

POWER HOUSE Part of EU-funded Intelligent Energy Europe Programme
www.powerhouseeurope.eu

Radiance
http://radsite.lbl.gov/radiance/

RETScreen Renewable Energy Project Analysis Software
http://retscreen.gc.ca

RIBA Royal Institute of British Architects (Student membership)
http://members.riba.org/student

Satel-light Database
http://www.satel-light.com/core.htm

Sciencedirect.com
to locate scientific journal papers

Solstice Online source for sustainable energy information
http://solstice.crest.org

Sustainable Development Gateway
http://sdgateway.net

Tas
edsl.net

UK Weather Information Site
http://www.weather.org.uk/index.htm

United Nations Environment & Climate Change Programme UNEP
http://www.unep.ch/iucc/

Usable Buildings (PROBE Studies)
http://www.usablebuildings.co.uk/

US Department of Energy National Renewable Energy Laboratory (NREL)
http://www.nrel.gov

World Architecture Community
http://www.worldarchitecture.org/main/

World Meteorological Organisation
http://www.wmo.ch

Weather Data (Met Office Integrated Data Archive System)
http://catalogue.ceda.ac.uk/uuid/220a65615218d5c9cc9e4785a3234bd0
# 9  COURSE CREDITS, LEARNING OUTCOMES & ASSESSMENT CRITERIA

## 9.1  Course Credits

The course credits, learning outcomes and assessment criteria listed below encompass the team projects, technical studies, research papers and dissertation work in each term of the academic year. The hourly breakdowns are indicative.

<table>
<thead>
<tr>
<th>TERM 1</th>
<th>Hours</th>
<th>Credit</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture course attendance</td>
<td>50</td>
<td>50</td>
<td>14%</td>
</tr>
<tr>
<td>Workshops, Tutorials &amp; Class Presentations</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Reading &amp; Research &amp; Design &amp; Presentation</td>
<td>180</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>250</strong></td>
<td><strong>25</strong></td>
<td><strong>14%</strong></td>
</tr>
<tr>
<td>TECHNICAL STUDIES (Project I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course attendance</td>
<td>10</td>
<td>10</td>
<td>5.5%</td>
</tr>
<tr>
<td>Workshops, tutorials</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Analytic work</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Writing &amp; Illustrating</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>100</strong></td>
<td><strong>10</strong></td>
<td><strong>5.5%</strong></td>
</tr>
<tr>
<td>RESEARCH PAPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course attendance</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Seminars, tutorials</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Reading &amp; Research</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Writing &amp; Illustrating</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>100</strong></td>
<td><strong>10</strong></td>
<td><strong>5.5%</strong></td>
</tr>
<tr>
<td><strong>TOTAL TERM 1</strong></td>
<td><strong>450</strong></td>
<td><strong>45</strong></td>
<td><strong>25%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TERM 2</th>
<th>Hours</th>
<th>Credit</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture course attendance</td>
<td>50</td>
<td>50</td>
<td>14%</td>
</tr>
<tr>
<td>Workshops, Tutorials &amp; Class Presentations</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Reading &amp; Research &amp; Design &amp; Presentation</td>
<td>180</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>250</strong></td>
<td><strong>25</strong></td>
<td><strong>14%</strong></td>
</tr>
<tr>
<td>TECHNICAL STUDIES (Project II)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course attendance</td>
<td>10</td>
<td>10</td>
<td>5.5%</td>
</tr>
<tr>
<td>Workshops, tutorials</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Analytic work</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Writing &amp; Illustrating</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>100</strong></td>
<td><strong>10</strong></td>
<td><strong>5.5%</strong></td>
</tr>
<tr>
<td>RESEARCH PAPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course attendance</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Seminars, tutorials</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Reading &amp; Research</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Writing &amp; Illustrating</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>100</strong></td>
<td><strong>10</strong></td>
<td><strong>5.5%</strong></td>
</tr>
<tr>
<td><strong>TOTAL TERM 2</strong></td>
<td><strong>450</strong></td>
<td><strong>45</strong></td>
<td><strong>25%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TERMS 3 &amp; 4</th>
<th>Hours</th>
<th>Credit</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISSERTATION PROJECT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminars, reviews, &amp; tutorials</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Reading, Research &amp; Writing</td>
<td>850</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL TERMS 3 &amp; 4 DISSERTATION PROJECT</strong></td>
<td><strong>900</strong></td>
<td><strong>90</strong></td>
<td><strong>50%</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1800</strong></td>
<td><strong>180</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
In Term 1, the course work submitted for assessment consists of a team project (25 credits for each team member), technical studies (10 credits for each member when submitted as team) and a research paper (individual submission worth 10 credits). Technical studies are normally part of project work. The work of each student must be clearly identified in all team work. Term 1 accounts for a total of 450 study hours representing 45 credit units or 25% of the total credit for the MSc / MArch in Sustainable Environmental Design (see above for a breakdown of study hours and credit units).

In Term 2 the assessed course work consists of a team project (25 credits), technical study (10 credits) and a research paper (10 credits) as in Term 1. Term 2 accounts for a total of 450 study hours representing 45 credit units or 25% of the total credit for the MSc / MArch in Sustainable Environmental Design.

In Terms 3 & 4 the assessed work consists of the Dissertation Project which is undertaken individually. Dissertation Projects account for a total of 900 study hours representing 90 credit units or 50% of the total credit for the MSc / MArch degree.

9.2 Term 1  Project I

Credit Units
25 credit units (13.9% of total credits) 250 study hours including attendance of relevant lecture courses and other programme activities (see below for breakdown).

Brief
Study of environmental attributes, design features and performance of urban environments and building structures. The project makes use of all the inputs, tools and resources provided by the taught programme in Term 1. The Project Brief is distributed and introduced on Week 2 of Term 1 and project work starts on the same week. Work on Project I is in teams of 4 students.

Aims
The project aims to develop observational, analytic and synthetic skills, and the ability to ask and answer questions using the knowledge, scientific instruments and computational tools provided by the taught programme. It also tests how individual students perform as part of a team. It is typical of work graduates from the programme may be doing in practice.

Learning outcomes:
On completion of this project students can be expected to be able to:

i. undertake field studies involving building surveys, occupant interviews and environmental measurements.

ii. undertake a critical appraisal of the environmental design attributes of buildings and outdoor spaces using on-site observations and measurements, as well as comparative performance data and calculated results

iii. make proposals for improvements to existing buildings and outdoor spaces taking account of specificities of site, climate, building type and form, construction and occupancy.

Project Assessment criteria:
Assessment of project reports is based on the following criteria:

i. understanding of the principles, methods and tools introduced by the taught programme

ii. application of observational skills and critical faculties

iii. ability to test research hypotheses and find new data

iv. demonstration of innovative thinking and creativity

v. clear structure, writing and presentation of project results

vi. referencing of sources of information using agreed conventions

vii. individual contributions within the team.

9.3 Term 2  Project II

25 credit units (13.9% of total credits) 250 study hours including attendance of relevant lecture courses and other programme activities (see below for breakdown).
Brief
The findings of the Term 1 projects provide starting points for a new round of team projects focusing on the design of adaptive environments. The Project Brief is distributed and introduced at the beginning of Term 2. Work on Project II will be in teams of 4 students.

Aim:
To apply the knowledge and tools provided by the taught programme to the development of design proposals for a specific building programme, climate and site.

Learning outcomes:
On completion of this project students can be expected to be able to:

i. develop designs for new buildings and urban environments taking account of the specificities of climate, site, and building type and exploring the possibilities offered by new materials and technologies

ii. use information from built precedents to complement and support analytic work and as means of explaining / justifying design decisions

iii. use selected environmental performance assessment and design research tools as and where needed to inform design decisions and assess the environmental impact and performance of proposed designs.

Assessment criteria:

i. learning from built precedents and contextual studies applied to design research

ii. clear approach in the formulation and investigation of design concepts and hypotheses

iii. application of new knowledge and analytic tools introduced by the taught programme

iv. ability for comparative analysis and interpretation

v. demonstration of innovative thinking and creativity

vi. adherence to project brief and preset requirements

vii. clear structure, writing and presentation of project results

viii. individual contributions within the team.

9.4 Terms 1 & 2 Research Papers / Technical Studies

Credit Units
Each Research Paper / Technical Study is equivalent to 10 credit units (5.5% of total credits) representing 100 study hours including attendance of compulsory taught components (see detailed breakdown). Each student must complete and submit one Research Paper and one Technical Study in each of the first two terms.

Topics:
Research Papers are critical reviews of published literature on any of the topics covered by the programme’s lectures and project work. Submission format is to be based on a paper template that will be introduced in the Research Seminar. Maximum size of Review Paper submission: 3,000-4,000 words.

Technical Studies are reports on analytic work undertaken on Projects I and II using the tools introduced in the Tools course and Design Research Workshop. They are submitted as part of team project documents.

Aims:
Doing research; familiarisation with relevant literature and research methods; organising and writing research papers and technical reports; learning to use specialist environmental design support tools and software; planning and undertaking analytic work, processing, interpreting and presenting results.

Learning outcomes:
On completion of these assignments students can be expected to be able to:

i. undertake critical appraisals of theoretical and technical concepts of environmental design in architecture and urbanism

ii. have a better understanding of selected literature

iii. make use of appropriate analytical tools in conducting environmental design research.

iv. have better understanding of how to plan, undertake, interpret and present research results.
Assessment criteria:
i. familiarity with the relevant literature 
ii. knowledge and understanding of the principles and tools introduced by the taught programme  
iii. demonstration of observational skills and critical faculties  
iv. ability for comparative analysis and meaningful generalisation.  
v. clear approach to formulating and investigating research questions and arguments  
vi. meaningful use of analytic tools in testing hypotheses and finding new data  
 vii. referencing of sources of information using agreed conventions  
 viii. clear and concise writing and presentation of research results..  

9.5 Terms 3 & 4 Dissertation Project

Credit Units
90 credits (50% of total credits) representing a minimum of 900 student learning hours including attendance of seminars and review sessions.

Brief
The Dissertation Project (DP) is supported by the Research Seminar that runs throughout the academic year. The DP is first introduced during Term 2 in conjunction with the Research Paper 2 from which the topic of the DP is normally derived in consultation with teaching staff. In Term 3 the brief of DPs is developed in some detail through a series of seminars and weekly tutorials.

Aim:
The Dissertation Project is a vehicle for undertaking a significant piece of research that reflects the programme's areas of research and students' personal interests, background, special skills and plans for the future. For the MArch, research is followed by a design application developed in some detail for a given design brief, site and climate. The MSc dissertation deals with design applicability of research results across climatic regions and/or building types and as such has a broader scope than the MArch dissertation.

Learning outcomes:
On completion of the MSc / MArch dissertation project students can be expected to be able to:
i. undertake critical reviews of environmental design topics in contexts of their choice  
ii. study the environmental attributes of selected buildings and urban contexts  
iii. engage in design research investigating aspects of environmental sustainability  
iv. use analytic tools to inform design decisions and/or assess environmental impact and performance of buildings and cities  
v. develop design proposals and design applicability studies for new and existing buildings taking account of the specificities of climate, site, building type and architectural form  
vi. assess the possibilities and potential offered by new materials and technologies  
vii. plan, document and illustrate research results encompassing fieldwork, analytic work and design proposals.

Assessment criteria:
i. Knowledge and understanding of the principles, methods and tools introduced by the taught programme  
ii. Application of critical faculties and observational skills  
iii. Ability to use field studies and analytic tools to test research hypotheses and find new data  
iv. Application of new knowledge and tools in design research and practice  
v. Demonstration of innovative thinking and creativity  
vi. Responsible application of technical knowledge and analytic tools  
vii. Clear and concise writing and visual presentation of project results  
viii. Referencing of sources of information using agreed conventions.
10 ORGANIZATION & SUBMISSION OF DISSERTATION PROJECTS

10.1 Choice of Dissertation Topics

The dissertation project is the final and most substantial piece of work for the MSc and MArch. Students are expected to confirm their choice of dissertation topic by the end of Term 2. This is formalised with the submission of a written outline followed by oral presentation to a review panel. The outline should identify the climatic region, urban context, building type and precedents (vernacular as well as contemporary), and particular environmental design research problems to be tackled. The development of dissertation research is supported by weekly individual tutorials. A list of MArch, MSc and MA Dissertations completed since the programme’s initial validation for a Masters degree in 1994 is included in the Appendix.

10.2 Preparation of Dissertation Research Outline & Plan of Work

A written outline of the proposed Dissertation Project must be submitted by the end of Term 2. This should provide the following:

i. Descriptive title of Dissertation Project

ii. Overview of proposed research area: what is the topic, why is it of interest, what are the problems identified from the literature or through work accomplished so far this year, how to approach them.

iii. Research questions and hypotheses: specific topics to investigate.

iv. Methodology: how research hypotheses are to be tested. This may include:
   - literature review published sources consulted and to be consulted.
   - review of relevant built precedents.
   - fieldwork (if any); where, when, for how long and with what expected outcome.
   - analytic work (if any); what parameters will be considered, how are results to be assessed.

v. Expected outcome(s): what kind of outcomes are expected from the research and how you expect to communicate them and / or use them in practice.

vi. Sources & Key references: List of sources already consulted as well as those to be consulted.

vii. Timetable.

10.3 Dissertation Document Structure & Contents

The Dissertation for the MSc / MArch Sustainable Environmental Design is an illustrated book of some 15,000 words (+/-1,000 words) for the MSc and 12,000 words (+/-1,000 words) for the MArch excluding references and appendices presenting the work as described below.

i. Cover Page: this must include the title of the Masters degree: MSc or MArch Sustainable Environmental Design 2017-18 or 2017-19; the name of the school: Architectural Association School of Architecture; the title and subtitle of the Dissertation Project; student name(s) and surname(s); type of submission (Dissertation), month and year of submission (September 2018 for the MSc, January 2019 for the MArch.

ii. Abstract: summary of dissertation project and its key findings (1-2 paragraphs).

iii. Authorship Declaration Form (see 10.5 below)

iv. Table of contents: a numbered list of Chapter headings and subheadings and the page number of the start of each section.
v. **Acknowledgments**: individuals and/or institutions acknowledged for having helped with information, support, sponsorship (including bursaries and scholarships, e.g. Commonwealth Scholarship, AA School Bursary).

vi. **Introduction**: summary of issues, problems and questions which led to the choice of the DP topic; what is the dissertation aiming to do; research questions and hypotheses tested; how was the work carried out (including reference to methods and tools used); summary of results obtained; how are the the contents organised and presented (2-3 pages).

vii. **State-of-the-Art / Literature Review** (or any other appropriate title): Critical review of published literature identifying and characterising the problems being addressed by the dissertation; formulation of research hypotheses. This chapter must demonstrate knowledge and understanding of the relevant literature not just your ability to quote or paraphrase from it. (10 pages or longer including illustrations).

viii. **Context & Precedents** (or any other appropriate title): This may be a single Chapter or a multichapter Part. **Context** information should include weather data and climate analysis in a concise and meaningful manner. Introduce urban context and issues; this could be more or less extensive depending on your topic. **Precedents** should be a critical review of historical, vernacular and contemporary built examples. It is better to have few well selected case studies that were visited and looked at in some detail than many examples that are shown superficially (Context and Precedents could add up to a total of 15-20 pages or more).

ix. **Fieldwork** (if any): Brief overview explaining why the fieldwork was undertaken, what it involved, how it was done, with what results and how are the results used in the dissertation.

x. **Analytic Work**: This could comprise separate chapters for different types of analytic work; each section must include explanations on what the analytic work was performed for, how spaces were modelled, what parameters were considered, what values were given to these parameters, what results were obtained, how these informed the DP’s research questions, etc. Further information on assumptions, input data, and outputs from individual runs should be included in an appendix.

xi. **MSc Research Outcomes & Design Applicability** (or any fitting title relating to your project): Synthesis of the various research threads and results from literature, field studies and analytic work. Translation into design applicability proposals. **MArch Research Outcomes & Design Application** (or any fitting title relating to your project): Synthesis of research threads and results from literature, field studies and analytic work. Translation into design brief and design application.

xii. **Conclusion**: summary of main findings and proposals (1-2 pages).

xiii. **References**: listing of all published and unpublished sources consulted including Internet sources (see further information in this Programme Guide on how to cite bibliographical sources).

xiv. **Appendices** (if any) with complementary information or data.

10.4 **Referencing Conventions**

_Citation of sources of information_

All sources of information and data must be cited in project documents, research papers and dissertations. This must follow the conventions introduced below. Sources to be cited include books and other publications (journal and conference papers), material presented in lectures or given in a private communication (a tutorial, interview, telephone conversation, email message etc.) by SED staff, invited speakers, architects whose buildings were studied, occupants, etc. Information generated by taking measurements, processing data, performing simulations and/or by producing drawings and designs should also be attributed to sources consulted and the tools that were used in the process.

_a) Citation within main body of text:_ References to bibliographical sources should be incorporated into your sentence syntax in one of the following ways:
Smith (2014a, 2014b, 2015) found that . . .
Recent work (Smith, 2017) suggests that ... 
Early studies (Smith, 1975; Smith and Jones 1980; Jackson 1990) ...

b) Tables and Figures: the source must be cited below the table or figure. Example: (Source: Smith 2000). Tables or figures prepared especially for the document being submitted do not need to have a source cited unless some of the data contained were originated by others than the student submitting the work. However, previous works by the student should be cited if used as a source.

c) Quotations: A quotation is an exact reproduction of a statement or passage of text written by someone else. A quotation is always inserted in quotation marks and the text is formatted so as to be clearly differentiated from the main body of your text. For example:

“Cities that are beautiful, safe and equitable are within our grasp.”
(Rogers, Cities for a Small Planet, 1997)

Quotations should be followed (or preceded) by citation of their source using one of the citation conventions listed above. Reproduction of work by others verbatim without reference to the source is plagiarism, a most serious offence that can lead to disqualification from the degree (see AA Student Handbook and Academic Regulations for details).

d) Footnotes: footnotes at the bottom of the page can be used to comment on a source of information, statement or fact, or provide a definition or clarification, without interrupting the flow of the main text.

e) References: All sources cited in the text should be listed at the end of research papers and reports. Both published and unpublished items should be listed. There are several different ways of doing this. The following system should be followed on SED submissions:

- start with the first author’s (or editor’s) surname(s) followed by the initial(s) of his/her first name(s); where there is more than one author or editor, the names of the second and subsequent authors/editors should be preceded by a coma and entered initial first followed by surname (see examples below).
- next enter, placed in parenthesis, the year of publication or completion; where the person named is not the author but the editor of the document, precede the date with “Ed.” (see examples below)
- next type the title of the book or paper followed by the subtitle (if any), and/or title and other details of publication where the referenced item appears (e.g. in the case of a paper which is published in a journal or a volume of conference proceedings); highlight the title of the publication in bold or italics. (see examples below)
- next list (for papers or sections of books which are referenced) the page numbers relating to the start and end pages being referenced.
- next give the publisher’s name.

Examples:


Figures and Tables
The word “Figure” applies to all illustrations (drawings, photographs, maps, graphs, diagrams, sketches, computer screen shots, etc.). No other word should be used instead. All figures must be numbered and
10.5 Submission Requirements for Dissertations

All submissions are to the Graduate School Administrative Coordinator’s Office. Dissertation documents should be hardbound with black covers and must be submitted in two copies. Covers should be inscribed along the spine to include the following from left to right: <student first name and surname> <MSc 2018> or <MArch 2019>. There should be no inscription on the front or back covers of the document. Each copy must have an inside cover page which must contain the following information:

- Architectural Association School of Architecture
- AA SED Graduate School
- MSc (or MArch as appropriate) Sustainable Environmental Design
- Dissertation Project 2017-18 (2017-19 for MArch)
- Full Title and Subtitle of the Dissertation Project
- Student first name(s) and surname(s)
- September 2018 (MSc); January 2019 (MArch)

There is freedom in formatting and placing these titles, but the exact wordings should be as listed above. Dissertation Documents should be in A4 Portrait Format unless agreed otherwise. The size of the text of the MSc Dissertation must not fall below or rise above 15,000 words by more than 1,000 words (excluding appendices and bibliographical references). MArch Dissertations are expected to contain less text, with a target of 12,000 words, but substantially more visual material to illustrate the design application. All pages must be numbered including appendices. Sheets should be printed on both sides using paper of sufficient thickness. Text should be formatted single space using Arial or similar font, typesize 10 points for the main body of text, 8 points for captions. A convenient layout for Dissertation documents is to have the text formatted in a single column on the left or right hand page with figures and illustrations placed on the opposite page. Margin sizes are left to candidates’ choice. All Figures and Tables must be numbered, titled and referenced following the guidelines given below. Dissertation documents must be accompanied by a CD containing the full document in PDF format. In addition, all illustrations must be included individually in a folder titled <Images> in JPG format at 300 dpi resolution in their original size. Finally, the CD should also include a folder titled <Models> containing the computer models and outputs produced using the environmental software introduced by the taught programme. The student’s full name should be written on the surface of the CD accompanied by the words MSc Dissertation 2018 (or MArch Dissertation 2019). Dissertation documents must include a signed Authorship Declaration Form certifying that the contents of the document is the work of the signatory and that use of material from the work of others is duly acknowledged. The form should be bound into the document in a prominent position after the cover page. In addition to printed document and CD, a pdf file of the dissertation must be uploaded to the students’ folders on the File Server. These pdf files are used for assessment and must therefore include the complete work. The deadline for the submission of 2017-18 MSc Dissertations is the 14th September 2018. The deadline for the submission of 2017-19 MArch Dissertations is the 11th January 2019.
11 ORGANIZATION & SUBMISSION OF COURSE WORK

11.1 Project Reports and Research Papers

In each of Terms 1 and 2 the course work submitted for assessment and credit consists of a team project, including individual technical studies, and an individual research paper. Project briefs are handed out at the beginning of each term. All course work submissions are to the Graduate School Administrative Coordinator’s Office. Each document submitted for assessment must include a signed Authorship Declaration Form to certify that the contents are the students’ own work and that use of material from the work of others is duly acknowledged. The form should be bound into the document in a prominent position after the cover page. Course work items are submitted in a single copy only. This must be bound with metallic spiral ring binding. Team project reports are normally submitted in A3 Landscape format. All other submissions are in A4 Portrait Format unless otherwise agreed. Each document must have a cover page with the following information:

- Architectural Association School of Architecture
- AA SED Graduate School
- MSc / MArch Sustainable Environmental Design
- Term 1 (or 2) Project (or Research Paper) 2017-18
- Full Title / Subtitle of Project / Paper
- Student first name(s) and surname(s)


There is freedom in formatting and placing these titles, but the exact wordings should be used as listed above. All submissions must be accompanied by a CD containing the full document (including illustrations) in PDF format. In addition, all illustrations must be included individually in a folder titled <Images> in JPG format at 300 dpi resolution in their original size. The students’ full names should be written on the surface of the CD accompanied by AA SED 2017-18 and the Project / Research Paper title. In addition to printed document and CD, a pdf file of each team project and research paper must be uploaded to the students’ folders on the File Server. These pdf files are used for assessment of course work and must therefore include the complete work.

11.2 Document Structure for Research Papers

All submissions must include the following sections:

- **Cover page:** this must include the information listed above.
- **Authorship Declaration Form**
- **Abstract:** a very brief summary of the paper (1 paragraph).
- **Table of contents:** a numbered list of the main headings and subheadings of the paper and the page number of the start of each section.
- **Acknowledgements:** individuals who have helped or provided resources, advice and information (including acknowledgment of sponsorships, bursaries or scholarships toward your studies at the AA School).
- **Introduction:** overview of issues and questions which led to the chosen topic with reference to the relevant literature; what did your paper set out to do and how; results obtained; how is your paper structured (1 page).
- **Main body of the document:** subdivided according to thematic, procedural or methodological criteria.
- **Conclusions:** summary of main findings and proposals.
- **References:** published and unpublished sources consulted including Internet sources (see below for academic conventions on how to cite bibliographical sources).
12 TEACHING STAFF CV's for details and lists of publications see aaschool.ac.uk

Simos Yannas has led environmental design research at the AA School since the late 1970s and is a founding member of the PLEA international network on sustainable architecture and urban design. His most recent writings are on adaptive architecturing, learning from vernacular architecture and refurbishing the city.

Paula Cadima has worked for the European Commission in Brussels managing world-class research projects on energy efficiency, renewable energy sources and emerging fields. She chaired the sustainable architecture working group of the Architect’s Council of Europe in 2009 and is a past-president of PLEA.

Jorge Rodríguez Álvarez has undertaken his PhD research on the planning of cities for the post-carbon age and is co-founder of SAAI, an international environmental design consultancy.

Nick Baker is a physicist specialising in building science and environmental design with special interest in thermal comfort and daylighting.

Klaus Bode is a co-founder of BDSP Partnership, an environmental engineering practice whose projects have included the Welsh Assembly Building, Bocconi University and the London School of Economics.

Gustavo Brunelli led the environmental design team for the London Velodrome and is currently in charge of the advanced building optimisation team at Hurley Palmer Flatt.

Herman Calleja is an environmental analyst with Chapman BDSP specialising in the use of parametric environmental design tools.

Mariam Kapsali is a design architect with Architype. She was previously a research architect with the Oxford Institute of Sustainable Development.

Byron Mardas is an environmental designer with Foster + Partners specialising in daylighting optimisation, outdoor thermal comfort and parametric modelling.
13 EXTERNAL LINKS

The programme has established contacts with fellow teachers, researchers and practising architects and engineers in many countries and has been involved in a variety of collaborative projects. The taught programme draws from this network of contacts. Colleagues who have contributed to the taught programme or collaborated in joint research or consultancy projects include:

Prof. Servando Alvarez & Prof. J.-L. Molina School of Engineering, University of Seville

Denise & Rab Bennetts Bennetts Associates Architects

Prof. Michael Bruse Johannes Gutenberg-University, Mainz, Germany

Prof. Federico Butera & Prof. Gianni Scudo Politecnico di Milano, Italy

Prof. Joao Cabral Technical University Lisbon

Peter Chlapowski PCKO Architects, London

Prof. Oscar Corbella Faculty of Architecture and Urbanism, Federal University of Rio de Janeiro

Mario Cucinella MCA, Bologna, Italy

Prof. Claude Demers & Prof. Andre Potvin Universite Laval, Quebec, Canada

Prof. Andre De Herde, Matriciel, Belgium

Dr Arnaud Evrard, VERNAtec, Germany

Dr Sophie Trachte, Dr Magali Bodart Architecture et Climat, Catholic University of Louvain, Belgium

Bill Dunster Bill Dunster Architects, London

Prof. Andy Ford South Bank University

Prof. Brian Ford Natural Cooling Ltd, UK

Prof. Bill Gething University of West England

Prof. Dean Hawkes (Emeritus) Welsh School of Architecture

Richard Hawkes Hawkes Architects

Catherine Harrington Architype Architects

Dr Alan Harries Integration, London

Prof. Andreas Matzarakis German Weather Service

Prof. Fergus Nicol Low Energy Architecture Unit, London Met

Becci Taylor Arup, London

Ben Humphreys Architype Architects, London

Prof. Gary Hunt University of Cambridge

Prof. Kazuo Iwamura Murashi Institute of Technology

Prof. Yuichiro Kodama University of Kobe

Prof. Isaac Meir, Prof. Evyatar Erell, Prof. David Perlmutter Centre for Desert Architecture and Urban Planning, Ben Gurion University of the Desert

Prof. Edward Ng Chinese University Hong Kong

Manit & Sonali Rastogi Morphogenesis, New Delhi

Prof. Emmanuel Rey EPFL & Bauart, Switzerland

Prof. Harald Røstvik Bergen School of Architecture, Norway

Prof. Alan Short University of Cambridge

Dr Derek Taylor Altechnica & Open University

Alexandros Tombazis Tombazis & Associates, Athens
Recent AA SED Alumni working in London

Rafael Alonso Candau  Atmos Lab
Alexandra Andone  PRP Architects
Joyce Chan  HOK
Meital Ben Dayan  Architype Architects
Marina Breves Costa  Millier
Herman Calleja  BDSP Chapman
Bruno Chialastri  Heatherwick Studio
Camila Ines Della Bitta  Avanti Architects
Larissa De Rosso  Building Design Partnership
Danah Dib  Foster & Partners
Ruth Dominguez  Foster & Partners
Kimmy El Dash  ZedFactory
Stathis Eleftheriadis  Price & Myer
Joy Anne Fleming Mowbray  Sedley Place
Irene Gallou  Partner, Foster + Partners
Dominga Garufi  Richard Hawkes Architects
Ronak Gavarwala  HOK
Anastasia Gravani  Wilkinson Eyre Architects
Pablo Gugel  Atelier Ten, London
Vidhi Gupta  Price & Myers Engineers, London
Javier Guzman Dominguez  MV-BIM
Mina Hasman  SOM London
Amy Holtz  PLP Architecture, London
Kristin Hoogenboom  Foster + Partners, London
Shashank Jain  Chapman BDSP, London
Eleni Kaltsogianni  CFW Architects London
Mariam Kapsali  Architype Architects
Georgia Katsaouni  SPPARC Architects, London
Sooseok Kim  Populous London
Ayelet Lanel  Austerlitz Architecture
Victor Lopez Rioboo-Gil  Gordon Ingram Associates
Maria Lumbreras  Atkins, Colchester
Byron Mardas  Foster + Partners
Patricia Martin del Guayo  Shepheard Epstein Hunter
Ricardo Messano  Foster + Partners, London
Jose Millan  Broadway Malyan
Juan Montoliu  Feilden Clegg Bradley Architects
Mileni Pamfili  Building Design Partnership BDP London
Pilar Perez del Real  Herriot Watt University
Kartikeya Rajput  Chapman BDSP London
Jose Ramirez  Bennetts Architects
Rodrigo Rodrigues  Aedas Architects
Rudrajit Sabhaney  Associate, Foster + Partners, London
Vera Sarioglu  Arup London
Amedeo Scofone  WSP Environmental London
Danielle Severino  Eva Menz London
Milena Stojkovic  Associate, Foster + Partners, London.
Harsh Thapar  Associate, Foster + Partners, London.
Olga Tsagkalidou  Hodkinson Consultancy
Leonidas Tsichritzis  University of Kent
Pier Luigi Turco  SOM London
Laura Vasquez Bueso  AHMM Architects
Yiping Zhu  Make Architects, London.

Recent AA SED graduates abroad:

Hiroki Abe  ABE Design Group, Portland, Oregon, USA
May Al-Hinai  Atkins, Oman
Carole Aspeslagh  Aspeslagh & Steyaert Architects, Brussels, Belgium
Laura Apezteguia  A+E Pamplona, Spain
Rodolfo Pedro Augspach  SDLA Sustainable Design Lab Architecture Brussels, Belgium
Tiffany Broyles  Thornton Tomasetti, New York
Aaron Budd  Sun Architects Manila, Philippines
Anne Cherian Matthew  Consulting Engineering Office, Abu Dhabi, UAE
Francisco Casablanca  Cline Bettridge Bernstein Lighting Design, New York
Irech Castrejon  Deimel Oelschager Architekten, Berlin
Joao Cotta  Oliveira Cotta Architects Campinas, Brazil
Ana Dias  AECOM Germany
Ece Durmaz  A Tasarim Mimarlik, Ankara
Rania El Zouki  American University, Beirut, Lebanon
Robert Fryer  Philadelphia University
Rohit Garg  Populous, New Delhi
Hina Gazi  Imar Urban Consultants, S. Arabia
Irene Giglio  MCA Architects, Bologna, Italy
Oindrila Gosh  Singapore University of Technology
Piya Gupta  Morphogenesis, Delhi, India
Shanuli Gupta  Cannon Design, Mumbai
Benito Gutierrez Blanco  ITESM Campus, Aguascalientes, Mexico
Alexandre Hepner  Studio ARKIZ, Sao Paulo
Blake Jackson  Tsoi Kobus & Associates Boston, USA
Atishay Jain  AJ Studios, Jaipur
Aarushi Juneja  Morphogenesis, New Delhi, India
Dong Ku Kim  Hyundai, Seoul, South Korea
Mili Kiropoulou  HKS, Houston
Bilge Kobas  Super Eight Collective, Istanbul, Turkey
Varun Kohli  HOK & Merge Studio, New York
Aimilios Kourafas  Archutopia, Dubai, UAE
Ashwini Kovithila Thazhe Veedu  Space Matrix Design Consultancy, Bangalore, India
Amy Leedham  Atelier Ten, San Francisco
Eleni Malaktou  University of Cyprus, Cyprus
Patricia Martin Del Guayo  Shepheard Epstein & Hunter
Jenna Mikus  Intelligent Building, Arlington
Humberto Mora  Escalar, Bogota, Colombia
Pulane Mpotokwane  Arup, Johannesburg, S Africa
Swastika Mukherjee  Purple Leaf Co., Beijing, China
Tuan Anh Nguyen  RM Studio Beijing, China
Barak Pelman  Technion Institute of Technology, Israel
Shravan Pradeep  Pradeep Architects, Bangalore, India
Rawan Qobrosi  Clay & Stone, Amman, Jordan
Omar Rabie  Auroville Earth Institute, Auroville, India
Isha Rathee  Populous, Delhi, India
J.-F. Roger France  Greenarch Architects, Brussels, Belgium
Ricardo Rosa  KRIPTON Architects, Lisbon, Portugal
Andrea Rossi  MCA Architects, Bologna, Italy
Izzati Mohamad Salim  Malaysian Resources Corporation Berhad Kuala Lumpur
Tomas Swett  Browne & Swett, Santiago, Chile
Afsaneh Tafazzoli  MJM Architects, Toronto, Canada
Boyoon Zang  Korea Institute of Construction Technology, Seoul, Korea

See also SED LinkedIn Group; see AAEESED in Facebook; AASchool_SED in Twitter
APPENDIX  LIST OF SED DISSERTATION PROJECTS

This Appendix lists the topics of all MA, MSc and MArch Dissertation Projects completed successfully since the Environment & Energy Studies Programme was validated for Masters degrees in 1994-95. MA Dissertations in Environment & Energy Studies (AA EE) are from the ten year period 1995-2005. The MSc and MArch Dissertations in Sustainable Environmental Design (AA SED) start from 2006. These are listed separately for MSc and MArch following a reverse chronological order, starting from the more recent output. The listing includes the 11th cycle of AA SED that started in October 2015 and completed in September 2016 for the MSc and January 2017 for the MArch. Printed copies of all AA EE and AA SED Dissertations are kept in the SED Office. The AA Library stores a small selection. A larger selection is available in pdf format on the School's Jupiter File Server. MPhil and PhD Dissertations related to the programme's areas of research are listed at the end of the Appendix.

SED 12th Cycle 2016-18

MArch Dissertations to be submitted January 2018

Maria Luisa Arze
Diversification of the Chilean Mediagua

Mohannad Abu Suhaiban
Microclimate Devices for Outdoor Spaces in London

Swati Bhargava
Courtyards and Jaalis as Environmental Strategies in Workspaces

Kanishk Bhatt
Office Design in Ahmedabad

Georgina Di Gironimo
Adaptive Living Environments in Buenos Aires

Tingting Gao
Microclimate Sensitive Design along the Thames

Daniel Ibarra Flores
Energy Efficient Office Buildings in Mexico City

Karthica Kalyanasundaram
Passive Design strategies for housing clusters in the Tropic

Anupa Ria Kurian
Learning from Kerala's Vernacular Architecture

Pavithra Lakshmi
The House that Follows its Occupants from Chennai to Delhi

Naitikkumar Patel
Passive Design for High-Rise Residential Buildings in Dubai

Anjana Suresh
Redesign of Gandhi Street Market, Trichy

Poonam Sachdev Kaur
Redesigning the Bazaar in Mumbai

Gunveer Singh
24/7 IT Office in Delhi NCR
Deep Kiran Gala  
Designing Vertical Financial Village in Mumbai.

MSc Dissertations to be submitted September 2017

Nader Gebran  
Improving Walkability in Beirut, Lebanon's hot climate

Athanasia Georgiadou  
Solar control in educational buildings in Greece

Sara Cansin Güngör  
Design Guidelines for New High Rise Residential Buildings

Rana Hammad  
Overheating in London Housing

Borja Juncos Redondo  
Solar Control & Daylighting Problems in Office Buildings

Anneloes de Koff  
Converting Vacant Churches into Housing in the Netherlands

Maria Chiara Multari  
Office Building Design in London

Artem Oslamovskyi  
Settlement Proposal for the Displaced in East Ukraine Conflict

Matthew Richardson  
Building Up Housing: Vertical Interventions with CLT

Doaa Salem  
Daylighting in Markets

Anna Zachariadou  
Conversion of Industrial Buildings to Office Buildings

SED 11th Cycle  
2015-17

MArch Dissertations completed January 2017

Rafael Alonso (Distinction)  
Whole-Life Carbon in Office Building Design in London

Ma Kristina Alvarez  
Back to Basics: The Design of an Eco-Resort in the Philippines

Elias Anka  
Preserving Cultural Heritage: Environmental Retrofit of the Beiruti Rose House

Timothy De Los Santos  
Design of Sports Centre in Metro Manila

Angela Dub  
Redefining Urban Living. Strategic Design for the urban block of Buenos Aires
Paolo Flores  
Design of an Educational Complex in Metro Manila

Romaissa Hadji (Distinction)  
Intermediate Spaces and its Environmental Impact on Office Towers in Dubai

Varunya Jarunyaroj (Distinction)  
Rethinking HDB Flat. Applicable Design of Public Housing in Singapore

Zahraa Makke (Distinction)  
Design of Village for Children of War in South of Lebanon: an orphanage and a school

John Salama  
Occupying Residual Spaces Under Bridges. Adaptive Multi-Use Art Hub

Shruti Shiva  
Learning from the Chawl: design of low-cost social housing in Mumbai

Wan Fong Wu  
Urban Synergy: Adaptive Infill Living London – Central London Prototype

MSc Dissertations completed September 2016

Angeliki Antoniou (Distinction)  
Redifining the Balcony on Residential Buildings in Thessaloniki, Greece

Zina Berrada  
Design Guidelines for Villages in the Warm and Semi-Arid Regions of Morocco

Drin Chulakasyena (Distinction)  
Design Guidelines for High Rise Housing in Bangkok

Florence Collo  
Solar Urbanism and Building Design in Buenos Aires, Argentina

Ipsita Dash  
Low-Cost Housing in Coastal Odisha, India

Olivier Dambron  
Potential of Bamboo Construction, Bali, Indonesia

Ana Dias  
Design Guidelines for High-Rise Office Buildings in Rio de Janeiro, Brasil

Ece Durmaz (Distinction)  
Daylight and Thermal Performance of Office Buildings in Ankara, Turkey

Paknam Eid  
Passive Design for Office Buildings in the Middle East

Aksor Gurunlian  
Passive Building Envelopes for Buildings in Lebanon

Müge Inan  
Adaptation of Historical Buildings into Working Environments in Istanbul

Anusha Nanavati  
Design Guidelines for Schools in Tropical Climates, Mumbai
Xiaxi Qiu
Case Studies of Residential Buildings in Warm-Humid Climate, Singapore

Thajnu Rashid
Retrofitting of Office Buildings in London

Eashita Saxena
Passive Strategies for Office Buildings in London

Maya Sharif
Reconstructing Camps in Beirut, Lebanon

Malgorzata Anna Tomczuk
Exhibition Pavilions in London

Trishta B Vardhan
Window Design Strategies for Work Environments in Mumbai, India

Elena Vilches
Learning from the Traditional Architectural Features of Cadiz, Spain

Chunni Zhou
Moisture Control for Housing in Lingnan Region, Guangzhou, China

SED 10th Cycle 2014-16

MArch Dissertations completed February 2016

Antonio Almeida
Integration of Industrial Remains at Sea Side Village of Trafaria, Portugal

Sandheep Ellangovan
Performative Stand for Outdoor Urban Markets

Oindrila Ghosh (Commended for Dissertation)
Revitalising the Informal City in Kolkata, India

Irene Giglio
Retrofitting Project for the Corviale, Rome, Italy

Nimya Mariam
High-Density Urban Living in Warm-Humid Climates, Cochin, India

Wasinee Prasongsumrit (Commended for Dissertation)
Shop-house Prototypes, Bangkok, Thailand

Cindrella Semaan
Integrating Vernacular Strategies into Contemporary Designs in Lebanon

Monica Toledo
Shopping Outdoor Spaces, Santiago, Chile

Julia Torrubia Aznárez
Perceived Environments in Offices, Madrid, Spain

Ameer Mustafa Varzgani
Ephemeral Art Pavilion, London, UK
Jiaji Yang (Commended for Dissertation)
Urban Village Design for Communal Living, Guangzhou, China

Daniel Zepeda
Free-Running Office Building, Guadalajara, Mexico

MSc Dissertations completed September 2015

Irech Castrejon
Design Strategies for Sustainable New Housing Projects In The Toluca Valley

Jet De La Rosa (Commended for Dissertation)
Comfort In The City: The Potential of Cooling Outdoor Urban Spaces in Metro Manila

Mª Francisca Echeverri
Environmental Potential of Flat Roofs in The Urban Context of Bogotá. Refurbishing The Informal City.

Sheila Esteve Ganau
New Urban Strategies for the City of Valencia: A Bioclimatic Rethink for the Historical City

Lu Jing
The Design of Glazed Balcony for Residential Buildings in Zhengzhou, China

Aarushi Juneja
Potential of Courtyards in Educational Buildings of New Delhi: Exploring Outdoor Learning Spaces for Primary School Students

Michelle Kuei
Shading the Outdoor Markets for Tapei City

Jennifer Liao
Balconies as Outdoor Living Spaces in High-Rise Buildings in Sao Paulo.

Aly Mahmoud
Strategies for Affordable Housing in Cairo

Chad Mckee (Commended for Dissertation)
Adaptive Bay Window Design Strategies for High-Rise Residential Buildings in Hong Kong

Mariana Moniz
Guidelines Towards Retrofitting an 18th Century “Solar” into a Rural Hotel in the North of Portugal

Mattis Mussault
The potential use of natural ventilation in office buildings in Tokyo

Arturo Reyes
Narrow stepped canyons in Mexico City. Improving outdoor comfort and water cycles.

Maria Teresa Sanchez
Lessons from Domestic Vernacular Buildings

Victoria Soto Magan
Daylighting Design for Non-Visual Effects in Research Environments

Augusta Stanitsa (with Distinction)
Environmental Retrofit of the Unexploited Roofscape of Athens

Olga Tsagkalidou (with Distinction)
Environmental Retrofit of the Unexploited Roofscape of Thessaloniki
Tolga Uzunhasanoglu
Environmentally Responsive and Inhabitant Centered State Secondary Schools in Istanbul, Turkey

April Wang
A Porosity Paradigm: Reconfiguration of Shophouse Morphology in Kaohsiung City.

SED 9th Cycle 2013-15

MArch Dissertations completed February 2015

Han Chen (with Distinction)
Design for High Density Residential Community

Adriana Comi
Social Housing in Mexico City

Kimmy El-Dash
Designing Out Fuel Poverty

Mahmoud Ezzeldin
The Future of Library Design

Francisco Godoy (Commended for Dissertation)
Eco Tourism in Chile

Anahi González
Primary Educational Spaces

Madhulika Kumar
School for Dance and Music

Ayelet Lanel
Educational Spaces - Learning from Nature

Rhiannon Laurie (Commended for Dissertation)
Future Library and Co-working Design

Gabriela Nuñez-Melgar
Temporary Shelter for the Homeless

Artem Polomanny
Resilient Commercial Environments

Hyosik Pyo
Design of Tall Residential Building in Daegu, S Korea

Jorge Ramirez
Local Identity for Rural Social Housing

Andrea Rossi
School & Community Centre in Lampedusa Island

Praew Sirichanchuen (Commended for Dissertation)
“Co-Production” of Low-Income Community in Bangkok

Ganesh Sivakumar
Affordable Housing Design
Pierluigi Turco  
Migrant Centre in Lampedusa Island

Mariyam Zakiah  
Self-Build Houses in the Mountains

MSc Dissertations completed September 2014

Georgina Campbell (Commended for Dissertation)  
Reconstructing Township Primary Schools

Larissa C De Rosso  
Outdoor Comfort in Small Open Spaces in São Paulo

Neusa Fernandes  
Refurbishment of Porto’s Historic Centre

Maria Lumbreras (Commended for Dissertation)  
Re-activating the Building Skin  
Jose Millan  
Retrofitting the Village of Orcera in Andalucia

Patricia Nogueira  
A Different Scenario for Residential Buildings in Brazil

Pavitra Sanath Kumar  
Traditional Perforated Screens of India

Leonidas Tsichritzis (with Distinction)  
Residential Refurbishment

SED 8  
2012-14

MArch Completed February 2014

Adriana Briseno Campos (Commendation for Dissertation)  
Design of Primary Schools in San Luis Potosi, Mexico, A School for the Community

Camila Della Bitta  
Rethinking the MarketDriven Urban Block, Capital Federal, Argentina

Alessandra Ghione  
Architecture to take away- design of a minimal, flexible, movable tourist accomodation

Shanuli Gupta  
Design of office buildings in warm and humid climates of Mumbai

Javier Guzman  
Slow Urbanism - Developing the abandoned urban infrastructure in Seville, Spain

Sooseok Kim  
Sustainable Built Form High Density Urban Areas of Seoul, Korea

Juan Montoliu  
(Awarded Distinction)  
Crisis Architecture, Colonizing Existing Concrete Structures

Mileni Pamfili (Commendation for Dissertation)  
Re-defining Urban Living in Central Athens
Sanyukta Pande  
Corporate Work Environments, New Delhi, India

Shravan Pradeep  
Design Strategies for 24 hour Work Environments in Bangalore

Kartikeya Rajput  
Rethinking Tradition, Passive housing in the Desert

Chandhana Ramesh  
Environmental Principles of Vastu Shastra for the Design of a residential community

Harshini Sampath Kumar  
Respite Architecture, an alternative to sustain fishermen's livelihood

Amedeo Scofone  
Reshaping Cities After Natural Disasters

Danielle Severino  
Layering Microclimates, Atacama Desert, Chile

Polina Vorobyeva  
Adaptive Building Skin for a High-rise Office Building in Temperate Climate of Moscow

Yiping Zhu (Commendation for Dissertation)  
Extending Spaces and Fading Borders, Primary School Design in Xiamen, China

May Al-Hinai  
Contemporary Passive Buildings, Lessons from the Traditional Typologies in Muscat

Sarah Arboleda  
Use of local materials for low cost Housing in Bogota

Marina Breves Costa  
Design guidelines for Informal Urban Communities in Rio de Janeiro

Anne Cherian Matthew  
In Transition, Third working spaces as means to improve comfort in office buildings in UAE

Rupalim Choudhury  
Enclosure Design for animals in captivity

Juan Fernandez  
Rethinking the Work Environment in Bogotá

Dominga Garufi  
Refurbishment of low-income housing in Palermo, Italy

Wei Gong  
The Low Energy Use Office Building in Beijing

Anastasia Gravani (Commendation for Dissertation)  
Refurbishing the City Centre : a.Urban Canyons

Piya Gupta  
Climate Responsive Architecture for Urban Residence in New Delhi
Eleni Kaltsogianni (Commendation for Dissertation)
Refurbishing the City Centre : c. Arcades

Eleana Malaktou
Environmental refurbishment of the vernacular residential buildings in Cyprus

Byron Mardas (Commendation for Dissertation)
Refurbishing the City Centre : b. Urban Block

Swastika Mukherjee
The Veranda Office Mumbai, India

Megha Nanaiah (Awarded Distinction)
Lessons from the Masters, A Study for Tertiary Educational Buildings in India

Jonathan Natanian (Awarded Distinction)
Climatic adaptation of the office building typology in the Mediterranean

Rawan Qubrosi (Commendation for Dissertation)
Keeping the Nomad, Adaptive Bedouin House in Wadi Rum

Isha Rathee
Renaissance: Rural Housing Development in the Desert state of Rajasthan, India

Swarnima Ray
Outdoor Thermal Comfort in Warm and Humid Climate, Study of Urban Parks in Kolkata

Tommaso Rosso
Balcony Renovation: A chance to Rethink a Space

Rashmei Sangtani
Transitional spaces in Residences in the Composite Climate of Nagpur

Vera Sarioglu
Improving the Environmental performance of traditional Ottoman houses in Istanbul, Turkey

Juan Vallejo
Environmental responsive conversion of heritage buildings in southern Spain

Zhenzhou Weng
Development of a Framework of Rapid and Compact Design-Oriented Thermal Analysis

Boyoon Zang
A Study for the Reduction of Heating and Cooling Load in Seoul, Korea

SED 7
2011-13

MArch February 2013

Alexandra Andone
Density & Urban Form. Integrated environmental refurbishment of the peripheral superblocks in Bucharest

Pedro Augspach
Environmentally Responsive Architecture in the Urban Tissue of Buenos Aires
Jose Luis Barros  
Self-Build Social Housing in Esmeraldas, Northern Equador

Valli Chidambaram  
Passive cooling strategies for high rise office buildings in the warm and humid climate of Chennai

Danah Dib  (Awarded Distinction)  
Residential Development in Kuwait City

Ronak Gawarwala  
Reinterpreting Courtyard Architecture as an Environmental Strategy for Tall Building Design in UAE

Benito Gutierrez  
Environmental Strategies for Low-cost Communities in Hot-dry Regions of Mexico

Ignacio Medina  
Beyond Energy Efficiency: Passive Strategies for Environmental Refurbishment in Madrid

TA Nguyen  
Adaptive Housing in Climate Change: A Paradigm for Ho Chi Minh, Vietnam

Saachi Padubidri  
Bazaars of Mumbai - outdoor thermal comfort in a hot-humid climate

Pilar Perez Del Real  
Environmental strategies and comfort studies for a Research Center in Seville

Izzati Mohamad Salim  
Designing Working Environments with Natural Ventilation in Warm and Humid climates: with reference to the case study of Kuala Lumpur

Tomas Swett  (Awarded Distinction)  
Office Building in Santiago, Chile. Rethinking the Office Building Typology for future scenarios.

Ajaree Tedkajorn  
Cooling Strategies for Self-sufficient Social Housing in Bangkok

Filippo Weber  
Contemporary passive shelters: A multi-functional development in Tuscany

MSc September 2012

Chandini Agarwal  
Study of Urban Voids: Thermal Comfort in Outdoor Spaces in Composite Climate of Delhi

Laura Apezteguia  
Refurbishing Navarra’s Abandoned Stone Farmhouses

Meital Ben Dayan  (Awarded Distinction)  
Environmentally responsive primary school buildings in the UK

Mariana Lebrao Cassins  
Passive Cooling for seaside hotel Buildings

Payal Chaudhary  (Commendation for Dissertation)  
Solar Control Strategies for Schools in Tropical warm and humid climates.
Jayce Chen
Moving towards User-Oriented Intelligent Systems: a study to balance user comfort and system efficiency in work environments

Joao Cotta (Awarded Distinction)
Impact of Window Design on Environmental Performance of work environments in S Paulo

Nikhil Deotarase
Cooling strategies and environmental quality for office buildings in Pune, India

Rania El Zouki
Environmental performance of the central hall house-Lebanon:-guidelines for reducing energy consumption in contemporary housing

Patricia Gallardo
Back to basics: upgrading environmental quality of the existing residential stock in San Juan de Los Lagos, Mexico

Katia Iliopoulou
Environmental Design Strategies for Primary School Building Typologies in Athens

Atishay Jain
Improving living conditions for rural/low income communities: Self build with earth in NW India

Ashwini KTV
Visual Comfort in Work Environments- Daylight Design, Visual Transitions and Adaptive Opportunities for IT Offices in Bangalore

Mariam Kapsali (Awarded Distinction)
Refurbishing the Urban Blocks in Central Athens

Aimilios Kourafas
Environmental Design Strategies for Urban Seaside Hotels in Southern Greece

Bilge Kobas
Smart With/out a Brain: A user-based sustainable take on intelligent skin components

Shaker Majali
Solar Gain and Thermal Mass: Passive strategies to achieve comfortable indoor environments in apartment buildings in Amman, Jordan.

Luciana Mathew
Enhancing the Thermal Performance of School Environments in Kuwait

Marcelo Mello
Refurbishing the Urban Fabric of Sao Paulo City centre

Humberto Mora
Guidelines for the Contemporary Use of Traditional Techniques in Colombia

Sandra Morikawa
Refurbishment of Underused Buildings in Central Sao Paulo

Pulane Mpotokwane
Pedestrianizing Gaborone, Botswana

Christina Poulmenti
Solar Control Design for Multi-storey Residential Buildings in Athens
Omar Rabie  
Cool Screen: Experimental Perforated Masonry for Hot Climates

Isabel Silvestre  
Environmental Refurbishment of Industrial Buildings/Warehouses in Lisbon

Laura Vasquez  
Facade Design for Environmental Quality in Office Buildings: with reference to the warm climate of Tegucigalpa, Honduras

SED 6 10-12

MArch February 2012

Priji Balakrishnan (Awarded Distinction)  
Cool Streets in Hot Climates: A means to achieve pedestrian comfort in Sharjah, UAE

Dana Bryan.  
Passive Aggression Low energy cooling in Los Angeles, USA

Ece Cakir.  
Adaptive School Environments: Elementary school design through investigation of vernacular architecture in Mardin, Turkey

Herman Calleja (Awarded Distinction)  
Cool Workspaces: Passive Cooling Strategies for a Digital Creative Industry Hub in Malta

Ana Terra Capobianco.  
Recycling Superstructures in Sao Paulo

Alda Coelho.  
Reshaping the suburbs of Maputo, Mozambique

Xavier Cordero.  
The New American Model: Sustainably Densifying the Sprawling Suburban.

Noah Czech.  
Sustainable City Blocks: Urban Microclimate, Building Envelope and Program

Rohit Garg.  
Passive Cooling Strategies for Residences in the Composite Climate of New Delhi: Applications in a Multiple Generation Family Residence.

Lourdes Gaspart.  
Alpine Rooftop Additions: Retrofit of multi-storey dwellings in the Swiss Alps.

Branden Harrell.  
Community Housing, Soweto: Creating a Sustainable Township; 17 years Post Apartheid

Mina Hasman (Commendation for Dissertation)  
Vernacular Ecology: Passive Strategies for Housing in Southeastern Turkey.

Preeti Mogali (Commendation for Dissertation)  
Optimising Building Form and Wind Towers in Dubai: Reducing energy consumption in contemporary university architecture.
Guilherme Rampazzo.
Achieving Environmental Comfort in Detached Housing in the Sao Paulo region, Brazil

Therezia Sloet Tot Everlo.
EU Cultural Center in Rio de Janeiro: Employing the use of transitional spaces to achieve thermal comfort.

MSc September 2011

Santiago Cala.
Biomimicry: Research and application of biological strategies in the heating of buildings.

Marianna Charitonidou.
Sustainable Housing Design in Mykonos: Vernacular vs Contemporary.

Ruggero Bruno Chialastri.
Passive Cooling and Heating Strategies for Affordable Housing in Rome

Francesco Emanuele Contaldo.
Smart Refurbishment in the Mediterranean Context.

Efstathios Eleftheriadis.
Biology and Architecture: A new contract for sustainable solutions in the tropics

Danai Frantzi-Gounari.
Environmental Refurbishment: Upgrading the residential stock of Athens.

Alexandre Hepner (Commendation for Dissertation)
The Amazon Research Network: Sustainable Architecture for the Tropical Rainforest.

Rita John.
The Future of the Mall Culture in India.

Georgia Katsaouni.
Updating Vernacular: Design guidelines for vernacular settlements and buildings in Cyclades, Greece

Keunjoo Lee (Awarded Distinction)
Transitional Spaces for residential tall buildings in Seoul, Korea

Patricia Linares (Commendation for Dissertation)
Creative Refurbishment of Historic Housing in Santiago de Compostela.

Jennifer Mikus.
Empowering occupants to redefine comfort in the American home – Raising awareness through education and technology to influence occupant behaviour and demand less energy.

Shreya Nath.
The Passive 24 Hour Office Building in Bangalore, India

Andrea Ortiz.
The use of brick in Housing- Design guidelines for three different climates in Colombia.

Joram Orvieto.
Changeable and Adaptive Portable Architecture

Prachi Parekh.
Responsive facade for the warm and humid climate of Mumbai.
Miryam Rizkallah.
Environmental Performance of the Traditional Lebanese Windows.

Bjorn T. Rosaeg.
London at High Level: Environmentally Sustainable Urban Renewal and Expansion Possibilities.

Philippe Saleh.
Cool Balconies: Investigating the thermal properties of balconies in Lebanon.

Peggy Shih.
Modern Sacred Environments.

Yukari Takagi.
Passive Ventilation and Humidity Control for Existing High Rise Apartment Buildings in Tokyo, Japan.

Anna Tziastoudi.
Working Environments: Environmental design and organisational principles for office buildings in London.

Aikaterini Vagianou.
Passive Building Envelope in Multi-storey residential buildings in Athens.

Joao Vieira.
Concrete in Architecture: Thermal inertia as a passive cooling strategy in working environments in Rio de Janeiro.

Helene-Sophie Vlachos (Commendation for Dissertation)
Leftovers – Exploring the environmental potential of roofs and urban voids in Athens.

Juliane Wolf (Commendation for Dissertation)
Phase-Change-Materials: An Exploration of the environmental and architectural potential.

Grega Zrim.
Double Skin Facades for Ljubljana climate: Applicability Studies.

SED 5 2009-11

MArch February 2011

Suraksha Bhatla.
Tall Communities: Passive Urban Housing for the Tropics.

Ruth Dominguez.

Miguel Cardona Firpi.
Re-Thinking the Creda Agenda in Barcelona: Designing adaptive urban living environments in a courtyard block.

Celina Escobar.
Reinterpretation of Residential Courtyard Typology in Seville: Density studies and Environmental Strategies.

Pablo Gugel.
Pushing the Climate Boundaries for Urban Earth-Sheltered Housing in Spain.

Constanza Jorquera.
Achieving thermal comfort with passive means in a detached house central-southern Chile.
**Pamela Kravetsky.**  

**Amy Leedham (Awarded Distinction)**  
Re-humanizing the Hospital: Sustainable Innovations for Healthcare Architecture.

**Didar Ozcelik.**  
Underground Indoor Rock Climbing Center, Alacati, Turkey

**Jeewon Paek (Commendation for Dissertation)**  
Environmental Performance of Adaptive Building Envelope Design: Urban housing in Seoul, Korea

**Francisco Ramirez (Commendation for Dissertation)**  
Modular Low Carbon “Strawcrete”: Self-Built Application for a Rural Community in South Central Chile.

**Rodrigo Rodrigues.**  
Dynamic Roof Structures for Retail Use: A prototype for low energy design in a temperate climate.

**Fanor Serrano.**  
Massive Timber Construction: An energy efficient urban infill in London.

**Orapim Tantipat.**  
Multi-storey housing in the tropical city, Bangkok

**MSc September 2010**

**Hiro Abe.**  
Learning from the Traditional Japanese House: Applying traditional techniques to contemporary houses in Tokyo.

**Carole Aspeslagh (Awarded Distinction)**  

**Evgenia Budanova.**  
Refurbishment of industrial building into low energy residences in Moscow.

**Aaron Budd (Commendation for Dissertation)**  
Environmental Diversity in Facade Design in the urban context of Toronto.

**Francisco Casablanca**  
Environmental Assessment of housing in Puerto Rico: The Evolution of a transplanted housing typology in an island of warm and humid climate.

**Joanna Conceicao.**  
Environmental Retrofits for Residential Buildings in Sao Paulo

**Cristina Crespo.**  
Urban Microclimates of the old San Juan.

**Melpo Danou.**  
Transformations at the Street Level of Athens.

**Gabriela Tristao Ferreira.**  
Retrofitting of the traditional architecture of Terceira island in the Azores
Anna Gkouma.
The Balcony in the Greek Urban Context.

Alfonso E. Hernadez.

Kristin Hoogenboom (Awarded Distinction)
Adaptively Reusing London’s Existing Industrial Fabric – Derelict to Domestic

Shao-Fan (Eric) Hsu
Sustainable Design Guidelines for Multi-Storey Apartments in Taipei.

Shashank Jain (Commendation for Dissertation)
Passive cooling through Ground Coupling: Application of Earth Air Heat Exchangers in Delhi.

Mili Kyropoulou.
Multi-storey residential buildings in north Greece: Balancing between daylight and thermal performance through facade strategies.

Masoudeh Nooraei.
Design Guidelines for Low Energy Multi-Storey Housing in Tehran, Iran.

Joram Orvieto.
Mobile and foldable house in Italy

Niken Palupi.

Silvia Piccione.
Energy Retrofitting of Social Housing Stock in Northern Italy.

Sameena Rajendra.
Cooling Without Air Conditioning, Hot Dry Climate, Kuwait.

Gemala Rinaldi.
New Guidelines for Town house in Jakarta, Indonesia

Liliana Rodriguez.
Modifying the Urban Microclimate in Outdoor spaces to provide thermal comfort in Monterrey, Mexico

Roshanek Sajadian.
Guidelines for Low Energy Housing in Northern Tehran

Rohin Sher.
Sustenance Through shared Comfort – Learning From Quantifying Passive Cooling Strategies In Hot Dry Ahmedabad.

Roi Tzimika (Commendation for Dissertation)
Exploring the thermal balance of single family detached houses in Northern Greece.

Marco Vitali (Commendation for Dissertation)
Potential and Applicability of Mixing Concrete with Straw

Ruofan Yao.
Passive design of detached house in the Yangtze Delta Region.
ISHA ANAND.
Contemporary Religious Architecture.

CHANASIT CHOLASUEK (Commendation for Dissertation)
Sustainable Low Income Community in Bangkok.

JOSE ANTONIO ESPINOZA DE TUDELA.
Post Disaster Housing for Chile

OLGA MARIA CONTO STERLING.
Learning Environments in Informal Settlements, Colombia.

ANUJA PANDIT.
Contemporary Indian Housing, Pune, India – Making use of transition spaces as social and climatic mediator.

KATERINA PANTAZI (Commendation for Dissertation)
Urban Metaphors: Exploring the Urban Roofscape Of Athens.

GILDA RIVEROS.
Urban Social Housing in Colombia.

SARANTI, K.
Architectural Microclimatic Interventions in a Square_Patras Greece.

STOJKOVIC, M.
Dynamic Office Building Façade In Temperate Climate.

ALEXANDRA THEODOROU.
Accommodating Change: Housing in London

GEORGIOS ATHANASOPOULOS. The Environment of Wineries.

NITIN BANSAL (Commendation for Dissertation)
“Corbu” in the Tropics.

FLORIANA CALISE.
The Boulder Houses on the Island of Ischia: An environmental evaluation.

ELLEN CAMERON.
Direct Coupling: The potential of openness for energy savings.

MONIKA CHOUDHARY.
The Potential of Earth Architecture as Low Energy Design.

YUN HO CHUNG.
Thermal Performance of Typical Classrooms in South Korea.

MARIADRY.
Evaluating the retrofitting of an old barrack into a library: the case study of the public library in Corfu.

HINA GAZI.
Emerging Learning Environments, UK
Polytimi Ilia.  

Snigdha Jain (Commendation for Dissertation)  
Impact of the built form and vegetation on the micro climate in residential sector in Delhi.

Annisa Julison:  
Let the (Indirect) Sun Shine In : Daylight Retrofitting in the Courtauld’s Gallery Central Room.

Natalia Kafassis (Commendation for Dissertation)  
Exploiting Adaptation and Transitions: Learning from environments beyond the boundaries of comfort.

Sharat Kaicker.  
Low Energy, High Intelligence Shopping Experience in North India.

Kalliopi Limpou.  
Designing Outdoors: Ephemeral & Adaptive Book Shelters in Thessaloniki, Greece.

Victor Lopez-Rioboo Gil.  
Reuse of Traditional Rural Housing in Abandoned Villages in Galicia, Spain.

Viktoria Lytra.  
Environmental Design and Morphogenesis.

Ricardo Messano.  
Environmental Retrofitting of Office Buildings in Sao Paulo.

Alberto Moletto.  
Courtyard Housing Typology in a Dense Urban Area.

Elli Papacosta.  
Adaptation and Reuse of the Existing Fabric: Converting Warehouses in London.

Pushkin Passey.  
Daylighting in Adjacent Spaces of Atrium Buildings.

Barak Pelman.  
PER-FORM-AION: Building Form and Thermal Performance on the Israeli Coastal Plain.

Rudrajit Sabhanay (Awarded Distinction)  
Bioemulation: Investigation and Application of a Biomimetic Approach to Environmental Design.

Aruna Sarkar.  
Exploring The Concept Of “Passive Zone” In Warmer Climates: Case for IT offices in India.

Nicola Salis.  

Parag Savla.  
Transitional Spaces for Commercial Buildings in Warm and Humid Climates.

Anna Vogiatzi-Tampa (Commendation for Dissertation)  
Transforming The Urban Void To An Urban Scene: The Potential For Sustainable Regeneration.
SED 3                     2007-09

MArch 2009

Jorge Eduardo De Souza Hue.  
Design of a Cultural Centre in Madureira, Rio De Janeiro.

Eric Blake Jackson.  
Rethinking The AA Graduate School-Scheme for a Bioclimatic Live/Work Facility.

Gwenedd Murray.  
Ecological Learning Centre for the Marin Academy, San Rafael, California

Lucy Ely Querales.  

Ekachai Sophonudomporn.  

Anya Thomas.  
Gone Fishing. Self help development for low income fishing communities in Sri Lanka

MSc 2008

Mania Ampatzi.  
Bioclimatic Strategies for Seaside Resorts on Greek Islands.

Leonidas Beis.  
Case Study of an Electronics Megastore in Markopoulo, Greece.

Avanti Karnani.  
The potential of thermal mass in school buildings in Hot Arid Climate of Aswan, Egypt.

Gangrong Lei.  (Commendation for Dissertation)  
Naturally Ventilated Urban Housing in Southern China.

Maria Mena D.  
Dynamic Canopies: a Microclimatic Intervention for Outdoor Comfort.

Shailee Nalawade.  
Passive Strategies For Multi-Storeyed Residential Housing In Pune, India.

Dipti Naphade.  
Thermal Comfort in Outdoor Activity Spaces in the climate of Nagpur.

Kohei Omori.  
Seeking Below Ground: Potential Of Underground Office Building In Tokyo.

Lisa Ann Pasquale (Commendation for Dissertation)  
Operational Logic: Control, Behaviour and Performance Sustainment at the Eden Project.

Jorge Rodriguez Alvarez  (Awarded Distinction)  
Environmental Retrofit: Energy Upgrades of Urban Dwellings in a Mild Atlantic Climate.

Michael Smith-Masis (Commendation for Dissertation)  
Social Housing in Costa Rica’s Warm Humid Climate: Strategies and considerations for passive design.

Afsaneh Tafazzoli.  
Urban Environmental Shopping Centres: Lessons from the Environmental Function of Isfahan Bazaar.
Paria Tomprou.
Flexibility and Comfort in Dancing Environments: Building and Human Envelope Responses.

Priya Vakil.
The Intelligent Skin for Office Buildings in Mumbai.

SED 2  2006-08

MArch 2008

Kanika Agarwal.
Residential Cluster Development of a Housing Community Based on the traditional pol housing.

Yasamin Arbabi.

Tiffany Broyles.
Ground UP: Defining an Architectural Typology for the Urban Farm.

Vidhi Gupta.
Rethinking “Openings and Voids” in the design of a “Quality Workspace”

Krista Murray Raines.
Rethinking the Underground Passenger Environment.

Annie Diana Babu.
A Low Energy Passenger Terminal Building for Ahmedabad Airport, India.

Lai Min-Hui.
Low Energy Row House Community in Kaohsiung (South Taiwan).

Farah Naz.
Energy Efficient Garment Factories in Bangladesh.

MSc 2007

Mathew Frankel.
Microclimate Furniture: Defining a New Urban Typology.

Surane Gunasekara.
A Study of Wellbeing: Designing an energy efficient detached micro work space.

Yuan-Chun Lan.
Dynamic Façade: A responsive skin for multi-storey apartment buildings in Taiwan.

Sachin Rastogi.
Passive and Low Energy Design Ideas for High Rise Residential Buildings in Delhi

Harsh Thapar.
Microclimate and Urban Form in Dubai.

Lydia Yiannouloupolou.
Autonomising Community or Communising Autonomy: Seeking for an Autonomous Community.
SED 1 2005-07

MArch 2007

Giles Bruce (Commendation for Dissertation)

Haven Burkee
Comfort in the Keys: Low energy residential design in the Florida Keys.

Natalia Kokosalaki
Lightweight Stadium for Hot Climates.

Sayed Z. Majidi (Commendation for Dissertation)
Next Stop Kabul – rapid structures and climate context.

MSc 2006

Ahmed Abouzeid.
Sustainable and Informal.

Olutobi Adamolekun (Commendation for Dissertation)
Low-Income Housing in Lagos – Sustainable Techniques for Modular Construction

Joyce Chan.
Public “Living-Room” in Hong Kong

Anastasia Dretta.

Clarice Fong.
Out of the Box – Reinventing the Industrial Warehouse

Manuel Alejandro Gallardo Gonzalez.
A Prototype House for a Sustainable Small scale Development in Baja Sur, Mexico.

Varun Kohli (Commendation for Dissertation)
The New St Anthony’s School : Creating Learning Environments in the Nilgiri Hills of Southern India.

Federico Montella
Environmental Functions of a Buffer Space for a Shopping Mall.

Debra L. Raymont.
Low Income Housing – an Approach through Sustainable Design.

Vasiliki Sagia.
Double Enclosure Application for a Commercial Building in Athens, Greece.

Aadil Salim.
Outdoors-Indoors Courtyards in Kerala, India.

Sandro C. Tubertini.
Low Energy High Rise Office Buildings for Sao Paulo, Brazil

Olga Tzioti.
Redefining Libraries.

Steven Vujeva (Commendation for Dissertation)
Suburban Extensions to Single Family Detached Long Island Dwellings for Energy Efficiency.
MA Environment & Energy Studies 1995-2005

Listing is in alphabetical order of student family names. MA Dissertations marked with an asterisk (*) were awarded a Distinction or a Commendation.


