MSc Advanced Sustainable Design

Applicant Information Pack

THE UNIVERSITY *of* EDINBURGH
Edinburgh College of Art

contents

programme
introduction

Community Building
Elfi Lempida, Andreas Makas

Welcome to our programme

When you join our programme you will work to understand underlying principles of sustainable design and be able to make intelligent and informed decisions to solve complex problems.Our programme does not set out to provide narrow specialist technical training in an aspect of planning and construction but instead to equip you with the knowledge and expertise to create persuasive sustainable strategies realised through excellent design.

You are taught in a number of different ways. We have lectures and workshops but your work has its foundation based on a series of projects. These are carefully staged so you are supported during the process with group and individual tutorials.

You will have your own workroom in our Minto House building where teaching, tutorial and review sessions are held. Minto House also hosts our Art and Architecture specialist library that has a comprehensive selection on books and resources in this field. You have a computer lab with workstations with specialist environmental software and a broad range of wide format printing facilities in house. You also have access to our workshop, one of the best equipped in the UK with woodwork, metal work, CAD CAM and rapid prototyping all available.

ASD Studio: Project Exhibition: Energy Landscapes : Cockenzie

Fieldtrip: Textile Factory : Colour Matching

How we work

We encourage group working and learning from each other and actively encourage you to explore beyond the boundaries of your existing professional and academic skill sets.Our students come from architecture and related built environment disciplines in engineering and landscape architecture but we welcome anyone with a deep interest in design and sustainability. The programme is outward looking, with guest lecturers and critics throughout the session. **The most effective strategies for sustainable development are those built around understanding a specific place or challenge scenario. Our curriculum works in global contexts and you have opportunities to work in climates and contexts of your choice.**

We enjoy putting together projects that deal with real problems such as post industrial planning, settlement regeneration and the design of future workspaces. We often work with students from other disciplines and run workshops and design participation sessions. We have worked in Edinburgh, Pitlochry and Galashiels where you visit and immerse yourselves in a place. Over the course of a semester you might transition from planning at a civic or even regional scale to the detail investigation of part of a building. Often we put on exhibitions to show your work to a wider audience.

Leith Interventions: A project involved working in the port area of Edinburgh with local communities to understand what are the real priorities for sustainable settlements. (Image Mari Kyprioti)

Resilient Borders:
Our Resilient Borders Project was a live project looking at how we transform towns through an integrated approach to network. Through community workshops we produced a Toolkit for future development. Find out more here

Graduate Careers

Fieldtrip: Keilder Observatory

Our students are an international community that come from: Australia Belgium England Chile Canada China Colombia Ecuador Germany Galapagos Greece India Indonesia Iran Italy Malta Malaysia Mexico Netherlands Nicaragua Norway Pakistan Paraguay Qatar Scotland Spain Switzerland Thailand Turkey UAE USA Venezuela.
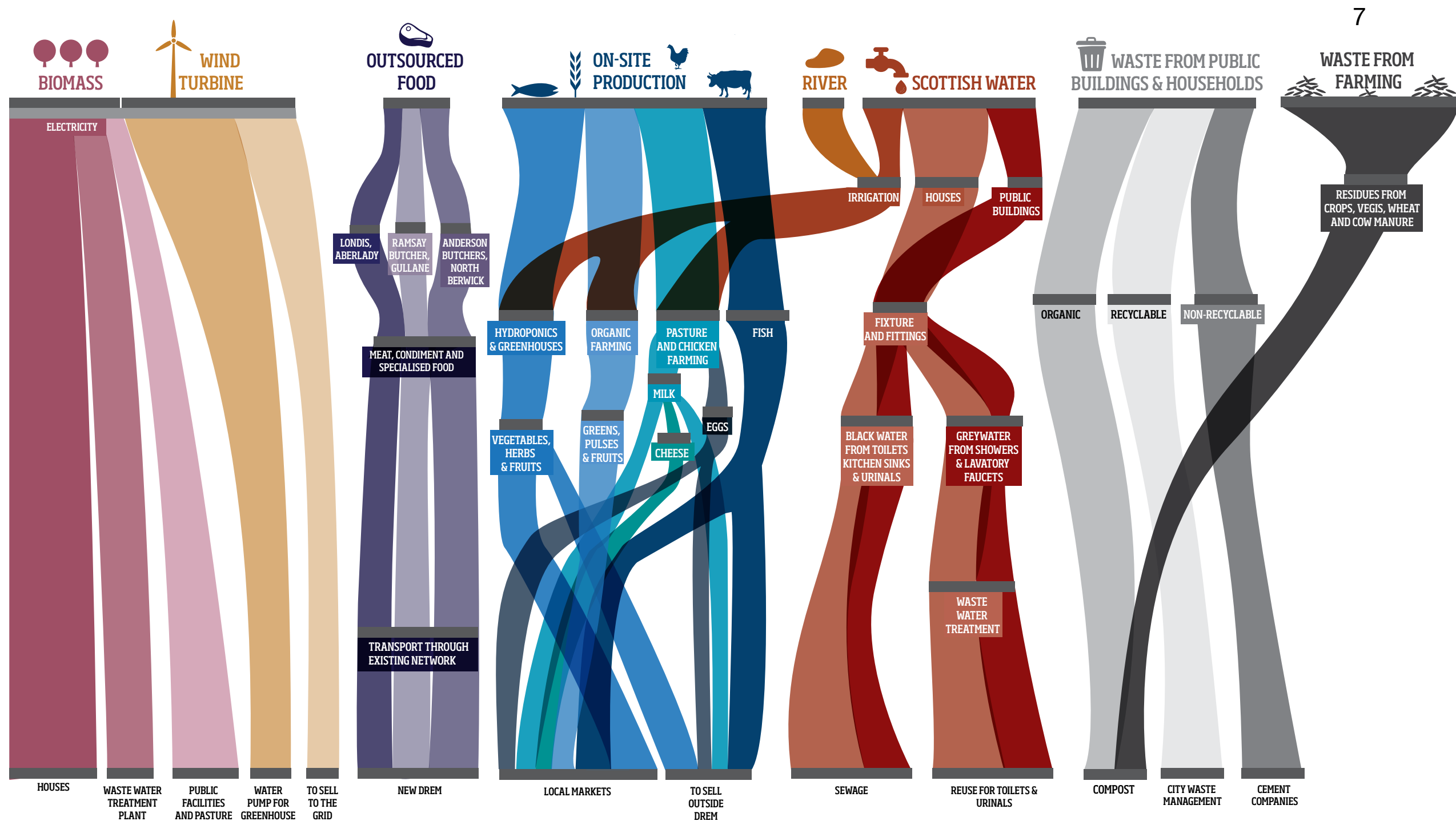
Our graduates are employed in a wide spectrum of occupations making good use of our globalised curriculum. Many of you use your degree to practice a sustainable specialism within their profession. Our graduates also work for specialist sustainability consulting organisations as well as government bodies.

Students who take our simulation pathway gain expertise in industry standard software to predict the environmental and carbon behaviour of buildings and work as graduate engineers.

Many graduates use their specialist knowledge and expertise to establish or grow their own businesses or help build start-ups.

Some of you have used this degree as a springboard to research through PhD study both here and at other institutions.

BIOMASS

ELECTRICITY

WIND TURBINE

OUTSOURCED FOOD

ON-SITE PRODUCTION

RIVER

SCOTTISH WATER

WASTE FROM PUBLIC BUILDINGS & HOUSEHOLDS

WASTE FROM FARMING

RESIDUES FROM CROPS, VEGIS, WHEAT AND COW MANURE

LONDIS, ABERLADY

RAMSAY BUTCHER, GULLANE

ANDERSON BUTCHERS, NORTH BERWICK

IRRIGATION

HOUSES

PUBLIC BUILDINGS

MEAT, CONDIMENT AND SPECIALISED FOOD

HYDROPONICS & GREENHOUSES

ORGANIC FARMING

PASTURE AND CHICKEN FARMING

FISH

FIXTURE AND FITTINGS

ORGANIC

RECYCLABLE

NON-RECYCLABLE

MILK

VEGETABLES, HERBS & FRUITS

GREENS, PULSES & FRUITS

CHEESE

EGGS

BLACK WATER FROM TOILETS KITCHEN SINKS & URINALS

GREYWATER FROM SHOWERS & LAVATORY FAUCETS

WASTE WATER TREATMENT

TRANSPORT THROUGH EXISTING NETWORK

HOUSES

WASTE WATER TREATMENT PLANT

PUBLIC FACILITIES AND PASTURE FARMING

WATER PUMP FOR GREENHOUSE

TO SELL TO THE GRID

NEW DREM

LOCAL MARKETS

TO SELL OUTSIDE DREM

SEWAGE

REUSE FOR TOILETS & URINALS

COMPOST

CITY WASTE MANAGEMENT

CEMENT COMPANIES

Infrastructure Futures Project

Elfi Lempida, Aning Kurswinarni Mariela Martinez Mayela Salazar
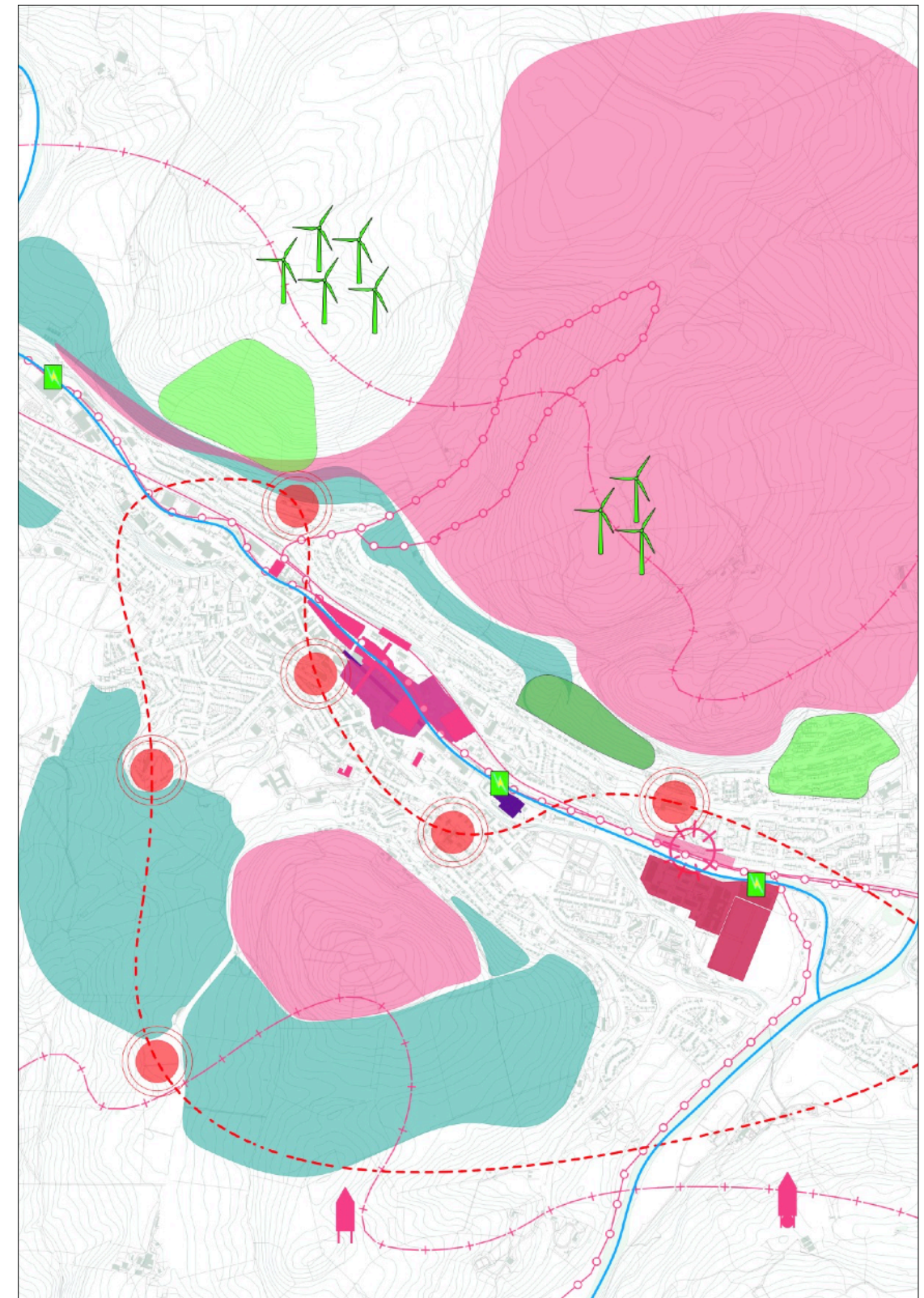
programme design

Programme Design

Advanced Sustainable Design is structured to give you more control of your learning as your studies develop. We don't think that simply delivering facts is useful where every context you work in is different, all with their own complexities and opportunities.

You do learn skills especially in design, communication, sustainable metrics and infrastructures as well as a pathway available to you in environmental simulation. However, we think it is just as important that you learn how to be an active researcher and to be critical of what you're finding out.

Our programme consisted of three stages. In Semester 1 we concentrate on **Principles and Skills** through an intensive series of projects and assignments. Semester 2 is about **Design Integration** where you apply many of the techniques from Semester 1 in a comprehensive design project at a series of different scales. Finally you undertake a sustained period of **Independent Research** over summer in a field of your choice.

Resilient Borders Project: Extract from Participative Masterplan

programme design: semester themes

Semester 1

1

Principles and Skills

This covers the theoretical natures of architecture and sustainability. It is taught through seminars and lectures. Key learning and teaching information is delivered via our LEARN online learning portal. You work collaboratively in design projects that examine a specific aspect or scale of sustainable design. In your first semester you take an elective course or can follow our building simulation pathway.

Semester 2

2

Design Integration

You apply what you have learned in a design project that looks at the transformation of a settlement and its hinterland. You work collaboratively with each other, examining the critical stages in the design process. You supplement this with an elective course or continue to follow our building simulation pathway.

Summer

3

Independent Research

Over summer you complete a research dissertation. This is a substantial critical and research oriented study of a specific aspect of sustainable design. It is your chance to study in depth a topic that is based around your home context, professional interests or simply a subject you're personally engaged with.
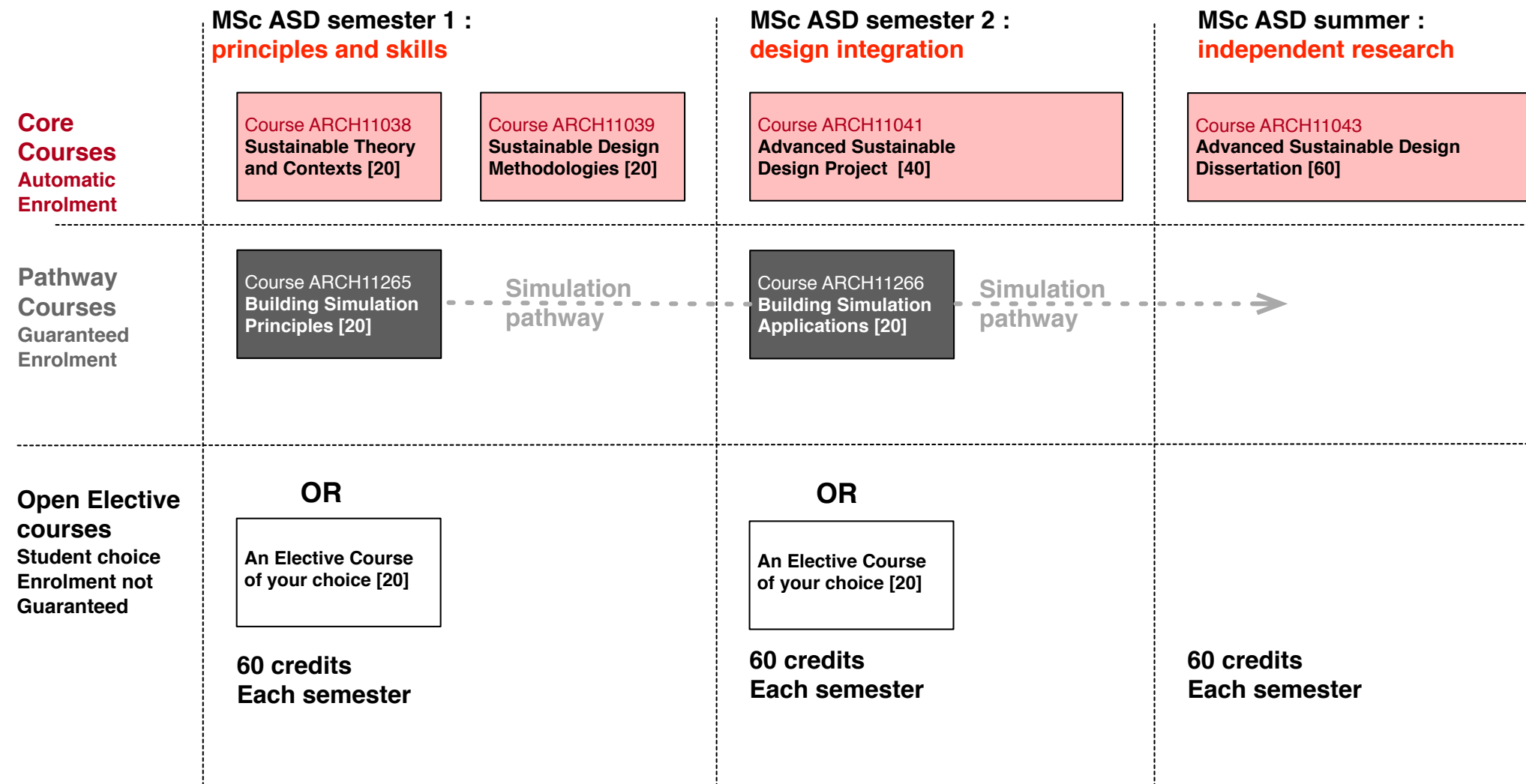
programme design: structure

Our programme is constructed of a series of courses all of which are credit bearing. Each credit corresponds to 0.5 European Credit Transfer and Accumulation System [ECTS]. So a 20 credit course is equivalent to 10 ECTS. Our programme runs for 12 months and consists of 180 credits worth of learning at postgraduate level.

Each of the first two semester consists of 40 credits of learning that are core curriculum for our programme. You then have two choices. This is because our students have a wide range of interests and want different experiences on programme

You can either follow our building simulation pathway and take one or two courses that provide you with knowledge and skill in predicting carbon and energy behaviours in buildings. Or you can take a course from our sibling programmes in Edinburgh College or Art or the wider University in fields such as sustainable development, building conservation, material technologies, and digital and parametric design. The choice is yours.

	MSc ASD semester 1 : **principles and skills**	MSc ASD semester 2 : **design integration**	MSc ASD summer : **independent research**
Core Courses Automatic Enrolment	Course ARCH11038 **Sustainable Theory and Contexts [20]** Course ARCH11039 **Sustainable Design Methodologies [20]**	Course ARCH11041 **Advanced Sustainable Design Project [40]**	Course ARCH11043 **Advanced Sustainable Design Dissertation [60]**
Pathway Courses Guaranteed Enrolment	Course ARCH11265 **Building Simulation Principles [20]** — Simulation pathway	Course ARCH11266 **Building Simulation Applications [20]** — Simulation pathway	
Open Elective courses Student choice Enrolment not Guaranteed	OR An Elective Course of your choice [20]	OR An Elective Course of your choice [20]	
	60 credits Each semester	**60 credits Each semester**	**60 credits Each semester**

programme design : timetables

You can find here outline timetables for semester 1 and semester 2. We concentrate core teaching on Monday and Thursday of each week allowing time for your studio practice, independent study and other activities.

This timetable does not include your elective courses. These need to run outside of our core teaching periods for the programme.

This timetable is indicative and may change

Outline Calendar : Advanced Sustainable Design		
Semester 1	Early September	Welcome Week
	Mid September	Start of teaching
	Beginning December	End of teaching [preparation of assignments continues]
	Mid December	End of semester
Semester 2	Mid January	Start of teaching
	Early April	End of teaching [preparation of assignments continues]
	End May	End of Semester
Summer	Mid August	Submit Dissertation
	November	Graduate

Indicative Timetable : Semester 1 (does not include your chosen elective course)					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
09.00-11.00	Sustainable Theory and Contexts: lectures and workshops	Available for elective study	Available for elective study	Sustainable Design Methodologies: Studio	Available for elective study
11.00-13.00	Sustainable Theory and Contexts: tutorials, workshops and presentations	Available for elective study	Available for elective study	Sustainable Design Methodologies: Studio	Available for elective study
14.00-17.00	Available for elective study	Available for elective study	Postgraduate seminar 5pm +	Sustainable Design Methodologies: Lecture & Studio	Student Society Lecture 5pm+

Indicative Timetable : Semester 2					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
09.00-11.00	Advanced Sustainable Design Project Lecture + Workshops	Available for elective study	Available for elective study	Advanced Sustainable Design Project Studio	Available for elective study
11.00-13.00	Advanced Sustainable Design Project Lecture + Workshops	Available for elective study	Available for elective study	Advanced Sustainable Design Project Studio	Available for elective study
14.00-17.00	Available for elective study	Available for elective study	Available for elective study	Advanced Sustainable Design Project Studio	Student Society Lecture 5pm+

our staff

Our programme staff are academics working on cutting edge research and practitioners with excellent experience in the delivery of sustainable buildings. Many of our academic staff also practice and this ensures a clear focus on design that lies at the heart of the programme.

Professor John Brennan

John Brennan is Programme Director and Professor of Sustainable Architecture. He is a partner in Brennan & Wilson Architects whose built work has been recipient of the Saltire Prize for housing. He has worked in the field of holistic sustainable design for 20 years with a specialism in timber construction and rural design. John has published research on the aesthetics of sustainable architecture, rural design and adaptability.

David Seel

David is an architect and a Teaching Fellow at our University. He worked with ARC Architects, and earlier in Austria and Germany. David has specialisms and expertise in environmental simulation modelling and alternative models for housing procurement. He edits the journal of the the Scottish Ecological Design Association.

Dr W Victoria Lee

Victoria is a lecturer at ESALA and is Co-Director of Equality Diversity and Inclusion at ECA. Her research interests include indoor environmental conditions, occupant perceptions & behaviours, occupant comfort, health & wellbeing, environmental design and energy retrofit practices.

Dr Kate Carter

Kate lectures in architectural technology and is a professionally qualified Architect with ten years practice based experience. Kate obtained a PhD in the delivery of Sustainable Social Housing. She has since led and collaborated in research projects incorporating sustainability into the built environment.

We also work with tutors who are practicing architects or specialists in their fields including passive house design, community empowerment, sustainable urban data and circular economy. They contribute to our class teaching and tutorials as well as acting as research dissertation supervisors.

links and information

You can find out more about our programme on our Edinburgh College of Art page. It gives a good overview of the programme and a series of weblinks.
Advanced Sustainable Design ECA Web Page

We have a Facebook page where we post news
Advanced Sustainable Design Facebook Page

Find out what our students say:
Veronica Mayela Paul Ernesto

Our Project Archive
http://www.asd.eca.ed.ac.uk

Cockenzie Aquaponics 2016

Alex Gonzalez, Daniela Ruano, Surendran Aalone, Anna Ruiz

information for applicants

course catalogue

Leith Transformations : Aurangzeb Mirza

You can find here a brief description of our courses with links to key information about timetabling, learning outcomes and credit weightings.

ASD course catalogue

ARCH11038 Sustainable Theory and Contexts

This course engages with key theories and contexts of sustainable development in the built environment. The course does not require any specific design skills but you should have an interest and engagement with buildings, neighbourhoods and cities.

This course has three key themes:

Communicating Complexity: This theme immerses you in sustainable design discourses. You gain skills to navigate a path through large volumes of information, to conduct intelligent analysis and construct legible and relevant sustainable design frameworks.

Building Capacity: How do we get the tools we need to undertake sustainable design? This is about gaining skills to be critical in your research and how to communicate effectively.

Critical Theories and Practice: Much of what we understand as sustainable architecture is underpinned by theory. We engage with some of the key foundations of environmental design and how it affects design practice in the built environment.

[Link to more information about this course](#)

ASD course catalogue
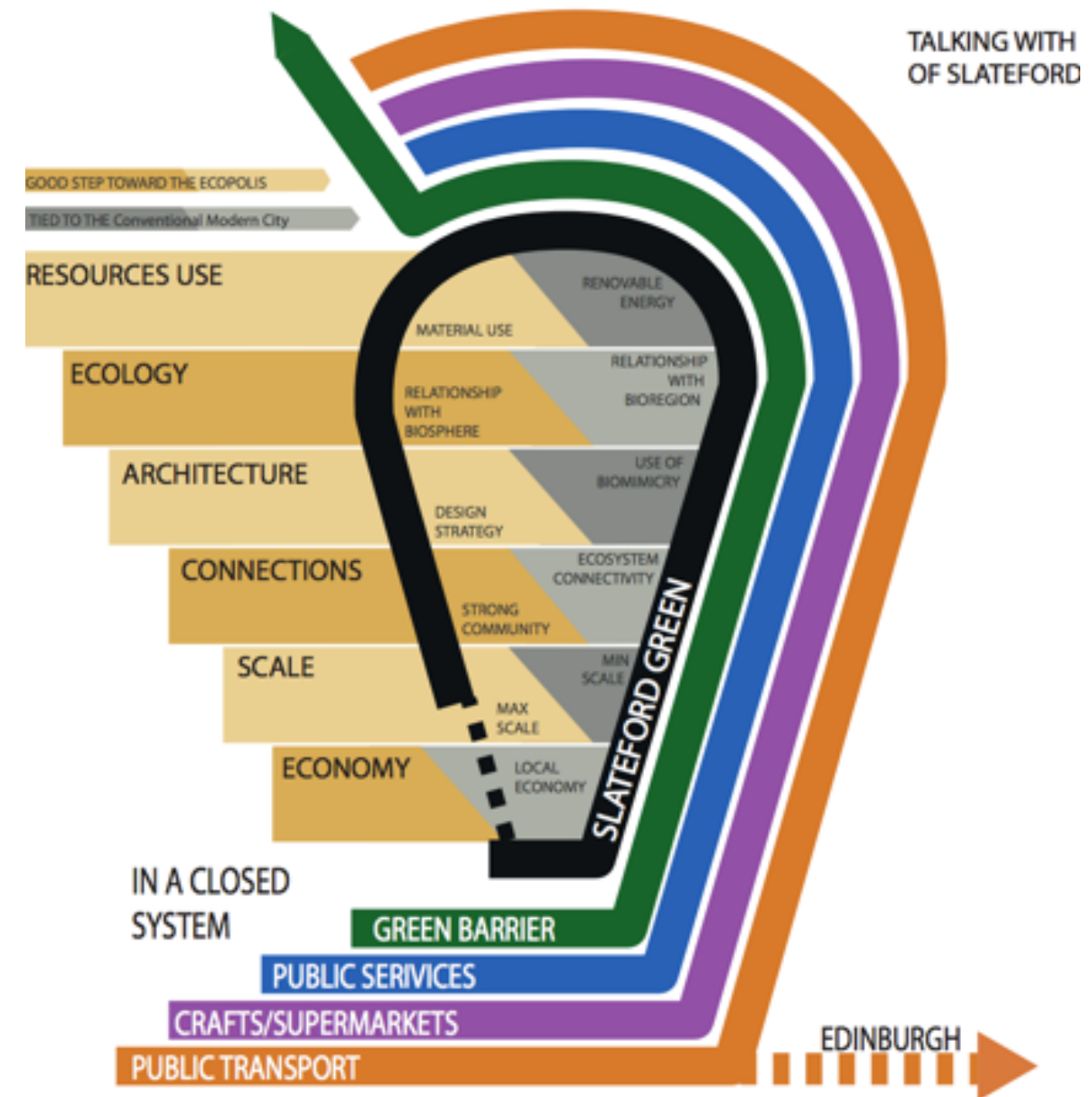
ARCH11039 Sustainable Design Methodologies

This is a studio based course that puts into practice some of the knowledge and theoretical basis of the programme that is found in sustainable theories and contexts. It explores themes through practical design studies at the scale of settlement and that of individual building. New design practices are explored to allow confident and original solutions in both urban and rural environments.

We look at how settlements can be designed through examining sustainable infrastructures and how to work and develop social and economic structures. The concept of the autonomous settlement is critically assessed as well as ideas around productive and protective landscapes.

At a closer scale the relationship between building skin and building services is explored with specific reference to Stewart Brand's idea of shearing levels of change

Link to more information about this course
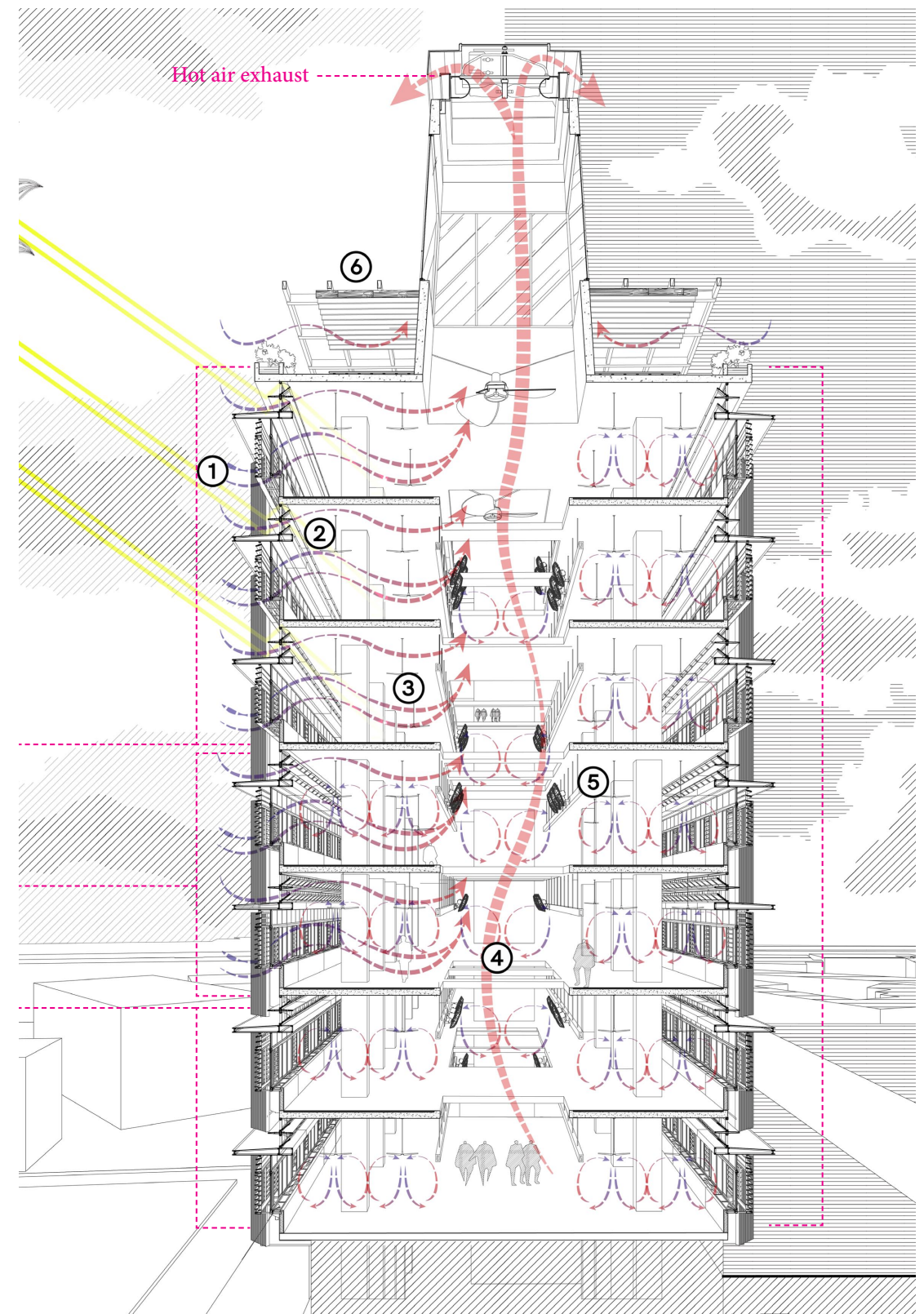
Tower Retrofit : Singapore. Tatyana Kusumo

ASD course catalogue

ARCH11041 Advanced Sustainable Design Project

Architectural design projects are often misunderstood as having a conclusion in a resolved proposition, revealed in at an increasing level of detail. Instead through a series of specific design narratives you will learn skills that will help you to intervene in the built environment in a creative way.

These design narratives connect to encourage lucid and deeply informed design proposals. It gives you knowledge and skill to deploy sustainable solutions and strategies that have both breadth and depth. You have opportunities to work collaboratively in groups and also develop your individual response to design contexts and programmes. Your work will follow the aims and objectives of the course but also can be moulded to your own professional background, skills and experience.

It is a studio based course that engages with the built environment at a series of scales. You will be encouraged to use a variety of digital and physical media.

[Link to more information about this course](#)

Energy Landscapes: Adam He, Yuting Dong, Tatyana Kusumo
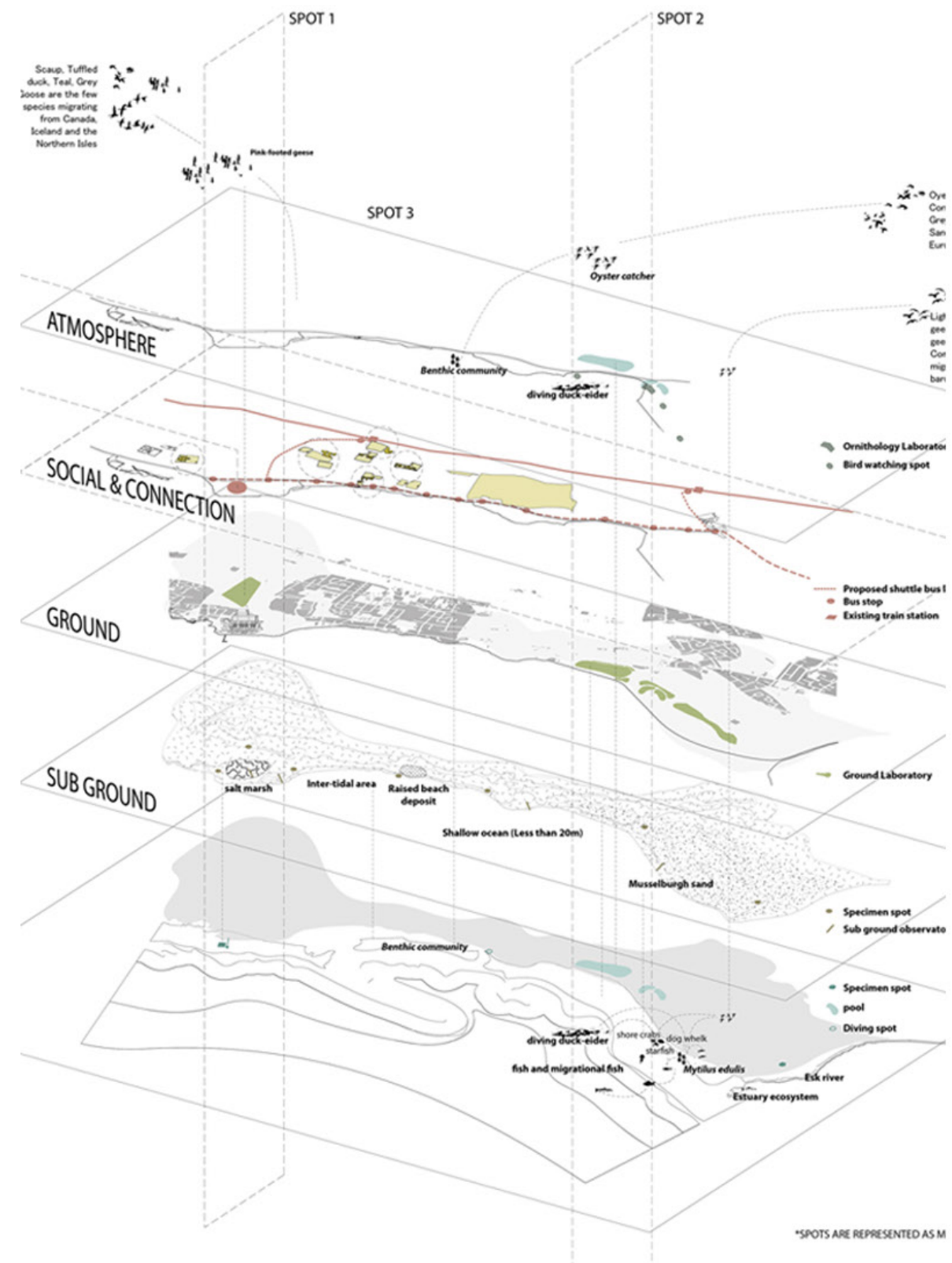
ARCH11043 Advanced Sustainable Design Dissertation

A dissertation is more than just a description of gathered research material. The best dissertations use your newly acquired knowledge of a topic to make distinctive and incisive contributions to debates and discourses in your chosen field. It involves the skills of working within the realm of academic research methodology, the gathering of information. You are taught how to develop these ideas in a mature and independent manner, and present them in a well-written and structured format.

You can choose any dissertation topic related to sustainable development and design discourses in the built environment. You can base your research around curriculum in the programme or from your own professional and academic experience. The dissertation can if requested, include an element of research by design. You are encouraged to use your dissertation study to gain expertise in a particular field that will be valuable in your future professional or academic career.

Link to more information about this course
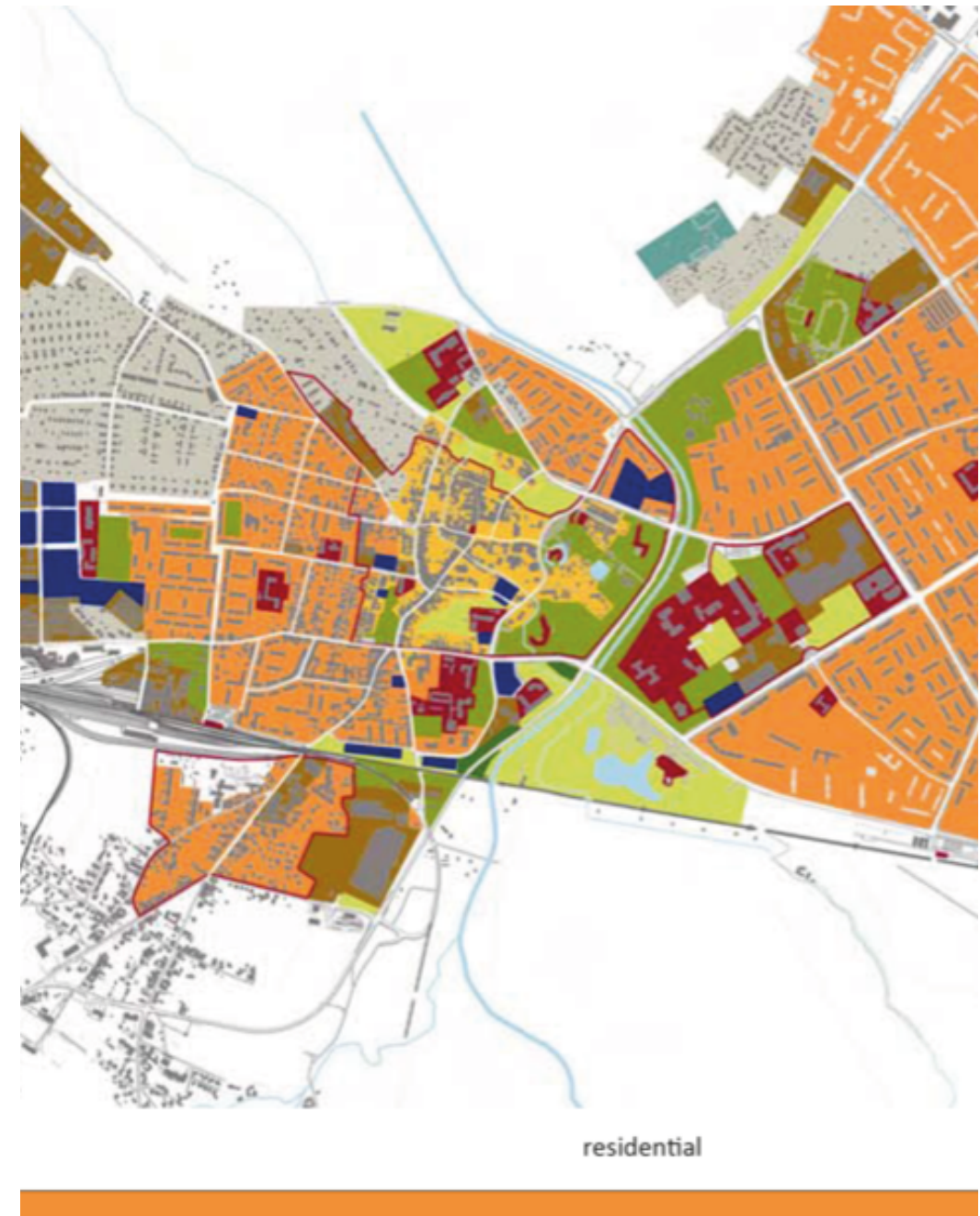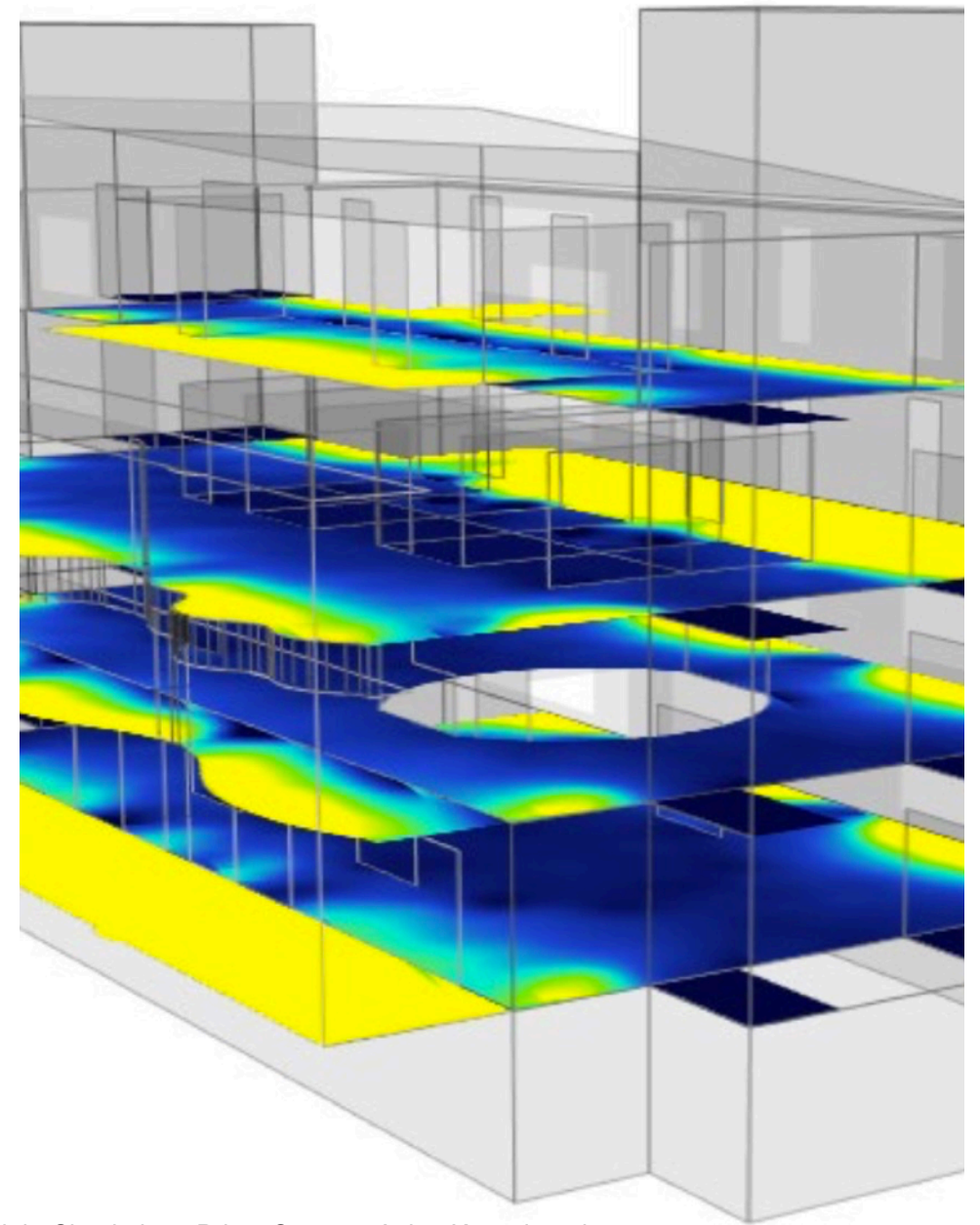

Designing for Depopulation : Brigitte Klumps

ARCH11265 Building Simulation Principles

This course is intended for students who have some knowledge and experience of building simulation. You will gain skills in applying sophisticated simulation techniques packages that define building services and user patterns in a precise way. You will deploy building simulation software to model your design work to predict its behaviour in a variety of climatic contexts

This course introduces the theory and practice of building simulation. The ability to model, predict, and iterate building proposals in terms of carbon emissions, energy loads and thermal comfort is increasingly important in design practice. The course provides skills and knowledge to represent buildings in a way suitable for analysis. Acquire expertise in modelling buildings using different constructional systems and climatic contexts.

This is an elective course - it is not a compulsory part of MSc Advanced Sustainable Design but is relevant and complementary to the programme.

Daylight Simulation : Bristo Square : Aning Kurswinarni
Elizabeth Seaver

**Link to more information about this course**

ASD course catalogue

ARCH1126 Building Simulation Applications

This course is intended for students who have some knowledge and experience of building simulation. You will gain skills in applying sophisticated simulation techniques packages that define building services and user patterns in a precise way. As part of the course you will be able to deploy building simulation software to model your own design work to predict its behaviour in a variety of climatic contexts.

This course is suitable if you already have knowledge and experience of building simulation techniques; it develops many of the themes explored in Building Simulation : Principles. This course is primarily intended for students enrolled on MSc Advanced Sustainable Design. It gives you the opportunity to interrogate your design practice from a project originating from a studio design course.

This is an elective course - it is not a compulsory part of MSc Advanced Sustainable Design but is relevant and complementary to the programme.
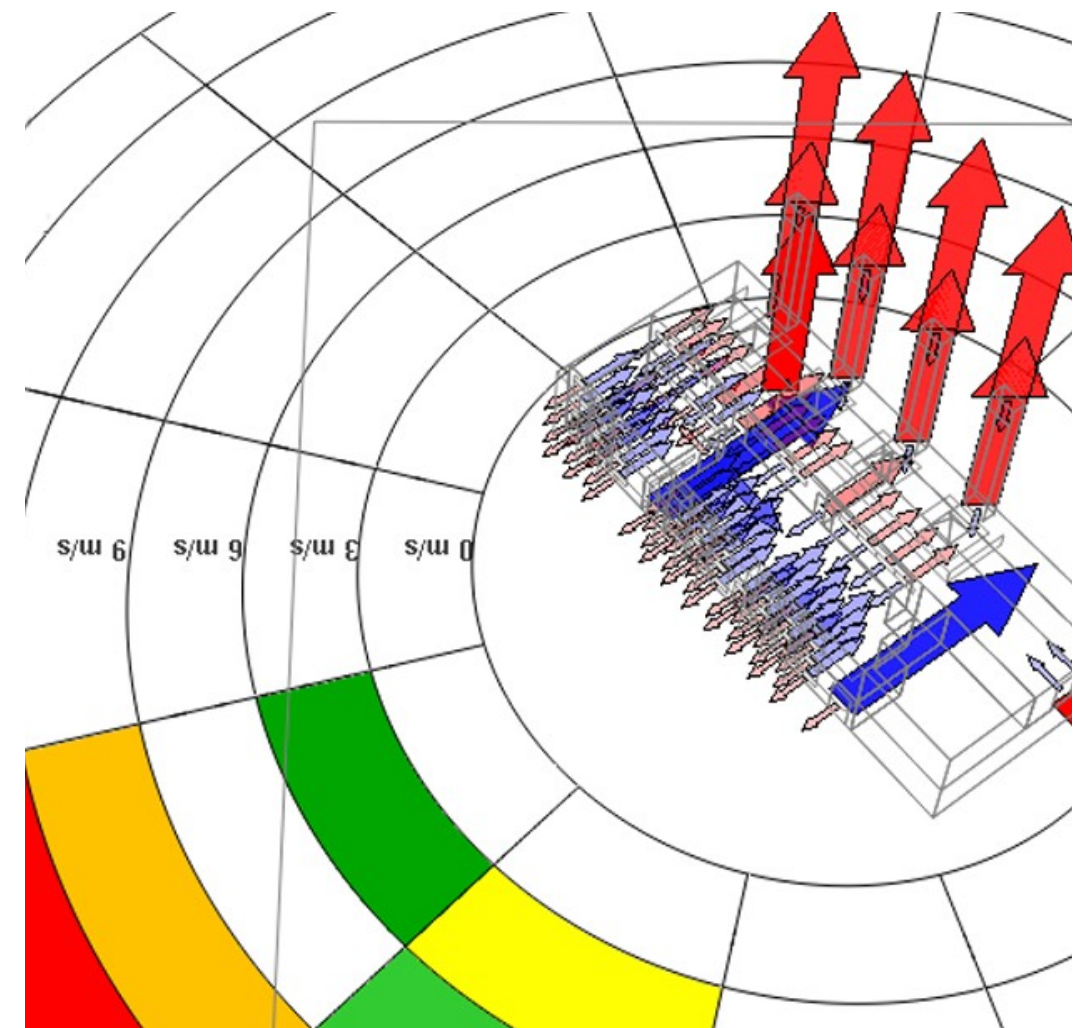
Passive Airflow using IES Macroflo. Markos Seferiadis

Link to more information about this course

how to apply

Leith Culture Box

Azar Farshidi , Mari Kyprioti

How to Apply

We welcome applications from all backgrounds and disciplines. This is a programme that is very much about design so many of our students come from architecture and design backgrounds. We have had many successful graduates from engineering, contracting and the sciences as well as those from product design, graphic design, landscape architecture and architecture disciplines.

All our successful applicants do need to demonstrate that they are engaged with sustainable issues and discourses as well as showing an interest and willingness to working within design and visual paradigms. We also welcome candidates who have wide professional experience but might not have studied for some period of time as they can make excellent contributions to the programme.

Our advice is always to apply as soon as possible. Scholarships offered both by our University and other organisations are usually determined many months before the start of a session. If you are an overseas student, you also need to factor in time to demonstrate competency in English and obtain visa clearance if required.

The Application Process

You make your application online. All applications are administered through our College Postgraduate Office. They will assess your application in terms of Degree Classification, academic transcripts and English language competency. We do not have any input into this process. Your portfolio and application form is examined by the Programme Director who advises whether an offer should be made to you.

To start the process go to:
https://www.ed.ac.uk/studying/postgraduate/applying/application

You can apply directly to the programme here:
https://www.ed.ac.uk/studying/postgraduate/degrees/index.php?r=site/view&id=417

Frequently asked questions

What kind of first degree do I need?
We normally expect candidates to have obtained, or expect to obtain, an undergraduate degree with a good classification equivalent to a UK 2:1, normally in architecture or a related discipline. In some circumstances, you can also provide evidence of an equivalent academic or professional attainment as an alternative.

I speak excellent English, why do I need a qualification?
Our University has strict rules about competency in the English Language. You can find information about this here:
https://www.ed.ac.uk/studying/international/english/postgraduate
This is non negotiable! Often we see candidates who just miss the required standard but have taken the test too late to resit. If you met our English language requirement in advance then the University can issue you quickly with an unconditional offer.

Is there a cut off date for applications?
We welcome applications in July and August BUT by this time if you do not meet our English language requirements or need to apply for a visa, it will be unlikely in August that you will have this in place for the start of the session.

How long does the application process take?
You will be kept informed online of your application's process by our Admissions Office. **We find that the best way to speed up your application is to have everything we require in place and uploaded**. This includes your transcript, reference, English language qualifications and of course your portfolio. Without your transcript, reference and portfolio, the University will not be able to make a decision to issue you an offer.

How do I get a scholarship to be able to study this programme?
There are many sources for Scholarships. Often your home country has schemes for study abroad and our University has a series of Scholarships and financial support available to prospective students. These are always very competitive and in high demand. The most important advice we can give is to research what's available and make sure you apply in time as most schemes close well before the start of the degree. You can find information about Edinburgh College of Art and University of Edinburgh scholarships here.
Edinburgh College of Art Scholarships
University of Edinburgh Scholarships

These opportunities are always openly advertised and are the only funding support offered by our University.

applications: the portfolio

Our programme asks for a portfolio from you. It is something that always generates questions. We hope that the following guidance will help you in its preparation.

Why do I need to submit a portfolio?
This is because the programme has an emphasis on communication. We need to see that you are able to order work you have done and the interests you have in a coherent and engaging way?

Does that mean I have to include examples of building design?
This depends. If your background is in architecture then it will most probably be the case that your project work will feature. If you come from a different background then we're interested to see how you communicate what you've done.

What do you look for in a Portfolio?
We look for an engagement in sustainable issues. It can include design work, or photographs and text that illustrates your interest. We also are interested in the way in which you describe your academic and professional experiences in an engaging way using visual material as well as text. We like portfolios that tell a story.

What format should the portfolio be in?
We look for a portfolio in PDF format. This can be uploaded as part of your application. You will get specific information once you begin the application process. We also will look at portfolios that are contained in a dropbox link. We do not accept portfolios by file transfer programmes.

What you shouldn't do…

…submit a portfolio that is too large in terms of size or pages. A key skill in our programme is being able to edit your work and get to what you think is important.

…prepare a portfolio that are just full of render visualisations of buildings and interiors. They don't tell us much about you.

…produce a portfolio that does not really show us the interest and experience you have around sustainable issues and discourses.