

Edinburgh Centre on Climate Change

Stage C Summary

A basic description of the project and building

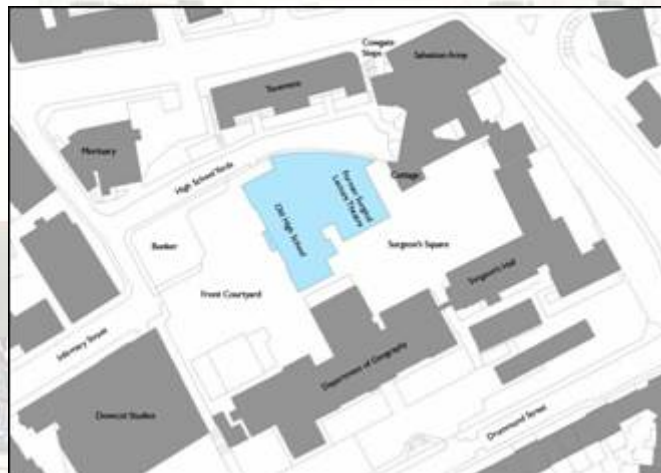
Introduction

The ECCC is a collaborative project led by The University of Edinburgh and involving Heriott Watt University. The centre will accommodate world leading research into climate change and provide a national hub of efforts to tackle climate change. The vision is to create a world class interdisciplinary research and teaching facility focussed on key climate related challenges facing society.

The ECCC will:

- bring together and direct high-quality research;
- address the significance of climate change at the science-society interface;
- inform political decision making; and establish Edinburgh as a leading university in the field.

The ECCC is to be based within the Old High School building at High School Yards, Infirmary Street, Edinburgh and will include the landscaping of the front courtyard, bunker and surgeons square (see plan below).



Site context plan

Sustainability

The objective is to create a low energy, efficient building targeting a minimum BREEAM rating of 'Excellent' and an aspirational rating of 'Outstanding,' with a minimum EPC rating of B, and an aspirational rating of A (Scottish Methodology).

Project Brief

Proposals have been developed which are best suited to the existing building arrangement, considering: room areas and heights; appropriate level of privacy; accessibility; daylight provision; ventilation; services restrictions; structural restrictions; and the ability to adapt or subdivide spaces without being detrimental to the character of the space. The outline proposals include an appropriate and interesting variety of spaces and uses.

The planned accommodation will provide teaching/seminar space, lecture/conferencing facilities, meeting/break out rooms, press/television room, a re-configured and refurbished exhibition space, offices for staff and a student hub incorporating a computer suite, social space and informal meeting/idea generation areas.

A strategic hierarchy of spaces has been established, based on the principal that the building will be open and welcome to visitors and public, at entrance level, becoming less public on the upper levels, which are dedicated to management, study and research. The preferred sectional hierarchy has been agreed as:

LEVEL 00: GROUND FLOOR:	'public' spaces – visitors / centrally bookable lecture theatres / undergraduate students / café
LEVEL 01: GROUND FLOOR MEZZANINE:	'staff' rooms – ECCC academic + support staff; phd students; visitors on a 'short stay'
LEVEL 02: FIRST FLOOR, FRONT:	'private' spaces – seminar / tutorial rooms; break-out rooms; smaller meeting rooms; business development; visitors on short or medium stay
LEVEL 03: FIRST FLOOR REAR,	rear block: 'master's' area – master's student base / hub

Internal Organisation

The outline proposals include an appropriate and interesting variety of spaces and uses, including:

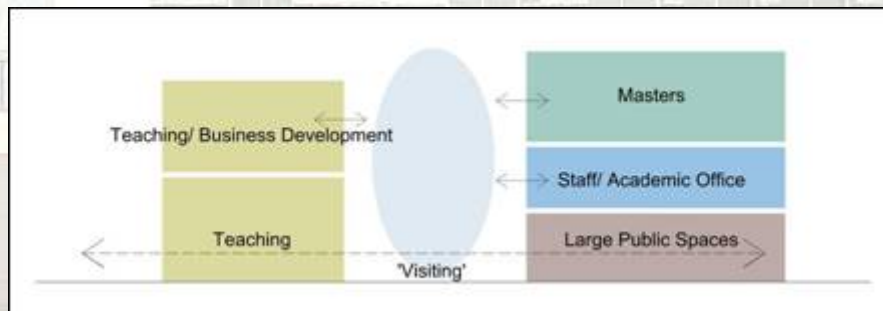


Diagram of internal arrangement strategy

Circulation

Above Ground Floor (Level 00), none of the levels to the existing front or rear buildings are consistent with one another. This is possibly the greatest restriction on the existing building arrangements (practically, functionally and architecturally). By removing the connecting link building between, these two significant building parts (front and rear), are then reconnected in a fashion which can improve the building's legibility, accessibility, openness, user interaction and provides a more flexible, social and 'usable' circulation space.

The existing front entrance remains the principal building entry, leading through a reception area, into the Social Space. On the public Ground Floor, this loose and flexible circulation area gives opportunity to meet and mingle, before leading into the main public uses: Main Lecture/ Conference space, with adjacent Small Lecture/ Conference; Café; main Teaching spaces and WC/ Changing provision. It is intended that the Social Space itself can work as a break out, or informal meeting space, with group seating provided.



View of new Social Space

Teaching Areas

A mixture of small, medium and large teaching spaces are provided. At Ground Floor, there are two dedicated teaching spaces and a single 'Immersive Teaching' space. This space is based on 'plectrum' shaped table arrangement to cater for group working. The main Lecture Theatre and Small Conference Room also work as potential teaching spaces. It is envisaged that the Café can additionally operate as informal break out.

On First Floor (Level 02), front building, rooms are intended to cater for teaching as well as business development. The required audio visual/ projection will be included to allow for teaching but when used as a business development space the rooms will be more akin to an office or meeting space. Smaller spaces suited to single or double occupancy office space have also been provided at this level.

Lecture, Conference and Break Out Facilities

Accessible directly from the Social Space is the Main Lecture space. The existing raked seating is to be removed making the space considerably more flexible with the potential to use loose seating and connecting directly into the new Small Lecture/Conference space. A new opening is to be made in the external elevation this will provide natural light into the lecture theatre and provide a connection back the Surgeon's Square beyond. This brings activity and views to the space and animates the rear elevation when viewed from Surgeon's Square. The Main Lecture space is well suited for conference needs and will accommodate catering.

The Small Lecture/ Conference area provides a particularly flexible, multi use space functioning as break out from lecture or conference; exhibition; meeting and small lecture. The space can be made open, as a 'large pocket', off the Social Space, with hinged semi acoustic partitions to create smaller (but still open plan) spaces for breakout discussions. This room is naturally lit by roof light, and proposals allow for a passive ventilation solution.

The Café

As has been established, the Ground Floor is an opportunity for the variety of building users, visitors and the public to interact and engage with the ECCC. The Café is an important function within the building, which in a different way to the Social Space, forms the social focal point for the building and for the other University buildings in High School Yards. This is a significant opportunity for the ECCC to open up to Surgeon's Square and give an 'open door' feel to the building and Square.

Academic and Staff Offices

The lower ceiling height of Level 01 lends itself to small cellular office spaces as does the new build element directly above the Café.

Masters Hub

Since alterations in 1904, the rooflights have been covered; suspended ceiling introduced and steel trussed boxed in. The proposals look to uncover and reinstate the original arrangement, to form the Masters Hub study space. This will create a light and airy feel that will offer an ideal and inspirational 'clear thinking' space, catering for a mix of individual and group study.

Since it is still important that the Masters Hub is well connected to the heart of the building a generous opening is to be introduced. This will overlook the Social Space and across to business development area on Level 01.

External Spaces

Proposals have been developed on the basis that car parking will be removed from the front and rear of the ECCC, with the exception of essential vehicle use and potentially City Car Club parking.

A large area of lawn will prove more usable external space, improve connections and views across the Square. The Café will engage with the Square making a delightful useful space, where staff and students can interact. MFA have begun developing ideas for all landscaped areas.

The design of the landscape areas is being developed by MFA in conjunction with an Ecologist to maximise the potential for extending the biodiversity of the site.



View to ECCC main entrance



View from Surgeon's Square

BREEAM Rating and score

The requirements for sustainability include a minimum BREEAM rating of 'Excellent' and an aspirational rating of 'Outstanding,' with a minimum EPC rating of B, and an aspirational rating of A (Scottish Methodology).

The key innovative and low-impact design features of the building

Re-use - of existing building

Design - improving the building circulation and usable spaces to suit the building users

Material - Natural and locally sourced materials

M+E - Maximum use of passive measures and designing out M+E systems. Novel use of energy monitoring data. Connection to the University's District Heat and Power Network (CHP).

Basic Building Cost -£5 950 000

Services Costs - £2, 080, 000 (Services cost £891/m²)

External Works -£ 900, 000

Gross floor area – 2333m²

Total area of site – 0.479 hectares

Function areas and their size 1130m²

Area of circulation 519m²

Area of storage 113m²

The grounds will be open access and available for the General Public to enjoy.

10% area of buildings to be used by community (small and large conference spaces)

Predicted electricity consumption 43 kWh/m² (Source – Stage C SBEM)

Predicted fossil fuel consumption 98 kWh/m² (Source – Stage C SBEM)

Predicted Low Carbon Energy Generation (i.e. CHP) = 130kWh/m²

Predicted water use 4.9 m³/person/year

11% of predicted water use is to be provided by rainwater harvesting

The steps taken during the construction process to reduce environmental impacts, i.e. innovative construction management techniques

Using the 'WRAP', waste reduction toolkit.

Building specification will consider the potential use of locally sourced materials, reducing the transport cost and hence, embodied energy of materials.

Building specification will consider the potential use of naturally sourced building materials, reducing the long term toxicity of materials within the building and improving the health and safety implications of installing toxic materials.

Tendering of the building contract will consider contractors that have an understanding of sustainable building design and construction.

A list of any social or economical sustainable measures achieved/piloted.

- Social:
 - *Educational facility –Wider public education/ information*
 - *Increasing the area of soft landscaping with the introduction of native species improving the natural environment for the surrounding area.*

- Economical:
 - *Various rainwater harvesting options are being assessed*
 - *Viability of Ground Source cooling is being assessed*
 - *Exploring the options for low energy use PC's and other hardware.*

Design Team comprises:-

Malcolm Fraser Architects,
North Bridge Studios, Edinburgh.

Lead Designer

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M&E Consultant

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Structural Consultant

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Cost Consultant

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CDM Coordinator and SWMP

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BREEAM Assessor

