3.2 Public Wing

Introduction

As well as providing the main entrance to the Cavendish the public wing will accommodate all the facilities that the department shares with the university. The lecture theatres will be bookable by other departments and therefore the design of the wing is intended to cater for a large volume of visitors that are potentially unacquainted with the layout.

People Flows

The public wing is designed to be legible and as naturally intuitive for visitors as possible. The lecture theatres are highly visible from the entrance as are the circulation routes which follow desire lines to their entrances. The arrangement of general circulation space, and break-out space, has been tested throughout Stage 3 in-order to ensure appropriate space to comfortably accommodate greater numbers of people during intense periods of use. A series of scenarios were modelled to test the open space provision, which has informed the final general arrangement of the wing and its staircase and balcony widths. A series of enlarged open spaces have been incorporated around the atrium and lecture theatres in-order to disperse the population in lieu of a single large open space that would otherwise be redundant for prolonged periods of time.
Interior Design
3.2 Public Wing

- Public Entrance Square
- Common Room Terrace
- Entrance Hall
- Reception
- Common Room
- Small Lecture Theatre
- Atrium
- Common Room Breakout
- Large Lecture Theatre
- Central Admin Office
- Outreach
- Breakout Space
- Learning Resource Centre
Interior Design
3.2 Public Wing

**Entrance & Reception**

From the raised public square, the main entrance leads directly into a generous double height lobby containing informal seating and a clear line of sight to the reception desk located below the fan shaped small lecture theatre. Within the reception area there will feature exhibition cabinets showcasing scientific material and apparatus from past to present. This will mark the start of a carefully curated display of exhibits focussed in and around the public wing intended to engage visitors. The top lit atrium is intended to naturally guide the visitor from the reception towards the main accommodation staircases.
Interior Design

3.2 Public Wing

Entrance Hall, First Floor
Interior Design
3.2 Public Wing

Upper Atrium, Third Floor
Interior Design
3.2 Public Wing

Lower Atrium, Ground Floor
Interior Design

3.2 Public Wing

Large Lecture Theatre

The design team explored a variety of lecture theatre formats during the concept design stage. The brief required a theatre sized to accommodate all students in one sitting for periodic events throughout the academic year (up to approximately 430 capacity). In addition, the department also hosts open house lectures and seminars open to the wider university population and the public, often as part of evening events.

The radial fan arrangement was selected by the Logistics Committee as the preferred layout. This format offers improved sight lines, naturally better acoustics and a more inclusive arrangement for an audience of this size in comparison to a straight row seminar layout. The auditorium is supported by a dedicated lecture preparation room for setting up mobile demonstration tables, the room will also accommodate remote AV controls.

The finishes of the auditorium have been developed to assist the acoustic performance of the space. The articulation of the soffit as a series of radial timber planes is a direct result of the need to reflect sound from the speaker to the centre of the audience. The slatted rear surface acts as an acoustic absorber to control reverberation. The lighting is designed to be scene set for different events ranging from practical demonstrations, audiovisual presentations, audience participation discussions, and musical recitals. Individual pivoting seats with high backs and writing benches have been incorporated. The fixed seats will accommodate circa. 385 for day to day use, however an upper capacity of circa. 430 seats is achievable with several rows of loose/folding seats planned for at the front and rear. Dedicated wheelchair positions will be provided at the front and rear to offer a choice of positions for both audience and speakers alike.

To the teaching wall a triple projection screen (each of 16:9 format) has been incorporated above a continuous linear blackboard. The AV strategy is covered in detail under Volume III: Services Engineering.

The department would also like to utilise the large lecture theatre for potential small scale musical performances, for example a string quartet or piano recital. This secondary function has been given greater significance by the announcement of the Dolby donation to the Cavendish. A further visit to the Fitzwilliam Auditorium by the design team and members of the department provided a built example of a theatre designed to operate in two modes. The department has emphasised that speech audibility during lectures should remain the primary function of the theatre, but through the inclusion of a voice lift system (a digital system controlling reverberation time, for example the Meyer Constellation system), this could enhance the space so it would be suitable for other events and types of music. However, the seating design currently assumes a fixed writing bench in a radial arrangement to each row. To make the auditorium more versatile for events other than academic lectures (both musical and conferences) the department would like to be able to either fold down or temporarily remove all, or a suitable proportion, of the benching. Chairs incorporating individual fold down writing tablets are widely available from the market. This could provide a solution, however the preference from the department is for a larger surface area to be available for students in daily use. The department would like to pursue removable, or easy to remove bolt on benching. This benching may connect or slot onto brackets on the seat stanchions. The Department and Estate Management will need to determine this change during Stage 4 prior to progressing the lecture theatre seating.
Interior Design

3.2 Public Wing

Large Lecture Theatre, Event Mode
Cluster Seminar Room

Cavendish III will promote modern teaching methods through the incorporation of a collaborative seminar room. This space is primarily focussed on group and activity based learning. As part of their studies undergraduates will regularly participate in problem solving based tasks in the form of an 'Examples Class'. This type of seminar space will offer an arrangement of small cluster seating modules designed to allow lecturers and teaching staff to freely circulate within the room supervising and assisting with exercises and discussions. The Cluster Seminar Room will also benefit Outreach teaching which allows smaller groupings of students for group discussion without the need to rearrange furniture.

Small Lecture Theatre

The second lecture theatre will provide circa. 120 seat capacity in a shallow raked format for smaller lectures and seminars. The Cavendish envisage this to be focussed towards research group use. Externally the 'hull' of this auditorium is expressed in the main entrance and has been used as a focal point to identify the main reception desk upon arrival. The small lecture theatre will have matching internal finish specification as the larger auditorium, with the exception of the teaching wall which will be a twin arrangement.
Interior Design

3.2 Public Wing

Small Lecture Theatre
**Interior Design**

**3.2 Public Wing**

**Common Room**

Intended for the use of staff, students and visitors, the common room will be the social ‘heart’ of Cavendish III. In order to encourage casual interaction, chance meetings and informal collaboration, the seating area will be a very welcoming space with good daylighting, an impressive ‘elevated’ view towards the centre of Cambridge and a direct link to an adjacent external amenity terrace with views over the Cavendish entrance square towards the J.J.T Gardens. A variety of seating types will be provided catering for different dwell times as well as informal working or purely relaxation. The space will be centrally located atop the public wing, and highly visible from the central atrium and street.

The provision and selection of food and beverage will be organised by the department but could be managed by a private operator. The common room servery will be operated during standard working hours. However, there will be additional snacks available from vending machines to support the primary purpose as a common room/collaboration space out of core working hours. The associated kitchen will mainly handle food regeneration, storage, wash-up and hot and cold serveries. It is not anticipated to be a commercial grade kitchen for preparation of food and should not require grease traps and other associated infrastructure.

The kitchen and servery will be operated during core Cavendish opening hours (typically 8:30-5pm). However, the tea room will be accessible to staff and Cavendish students 24/7. To support out-of-hours use the tea room incorporates a kitchenette allowing users access to microwaves and hot beverage facilities. On the occasion of evening events the tea room will be utilised for break-out prior to, or post talks, lectures and symposiums. This will be organised and managed internally by the Cavendish.
Interior Design

3.2 Public Wing

Common Room, Servery
Learning Resource Centre

The Cavendish Learning Resource Centre (LRC) will provide both traditional educational resources (i.e., books, journals, and audiovisual material), alongside electronic information resources. The new Cavendish III LRC will address the shift towards online resources and the prevalence of users bringing their own electronic devices. A key aspect of a contemporary Learning Resource Centres is the application of self-study in a variety of different ways. These usually include computers, a range of places to study and the need for areas of defined group study space without disturbance to individuals.

Layout

The Design Team engaged with the Cavendish librarians and has followed the guidance outlined by the University of Cambridge ‘Futurelib’ project paper. This document has informed the internal layout for the LRC, in particular the concept of ‘intensity gradient’, an approach to defining areas for different types of study to humanise the library and create a comfortable, welcoming environment. The department has expressed the need for mostly ‘medium’ and ‘higher’ intensity space within the LRC to preserve the space for focussed private study needed for greater concentration. Low intensity, more relaxed spaces ideal for peer to peer learning has been incorporated to the northern end outside of the main LRC room, but directly connected. Additional break-out study space is available at the southern end of the LRC at the base of the atrium. Careful selection of loose furniture will be required at a subsequent stage to ensure the break-out space is optimal for this purpose. The librarian’s office will be contained within a freestanding pod adjacent to the entrance formed by full height flanking bookcases and accommodating reference PCs for access to online resources.

Bookcases

The overall allowance for bound volumes and books available for open-access is anticipated to reduce by approximately 50% from the current Cavendish II LRC. It is intended that a store adjacent to the rear of the Cluster Seminar room may act as an archive for additional storage. However, it is anticipated that the need for hardcopy text will diminish yet further in years to come. The LRC therefore offers two types of book shelving to respond to this change: fixed and freestanding shelving. The freestanding bookcases in the centre of the space can be removed and replaced with additional study desks, whilst a single curving ‘feature’ book wall is intended to always remain as a core book resource.

Comfort

The LRC’s location at ground floor facing outwards towards JJ Thomson Avenue will offer prominence to this principal academic resource, conversely it will achieve very good natural daylight and benefit from prime aspect to the tree lined avenue. Notwithstanding this, there will be occasions when the external glazing will benefit from some element of user glare control, all external windows will therefore incorporate internal blinds. Generous internal glazed partitioning will provide acoustic separation whilst maintaining visual connectivity to the atrium and entrance beyond. The double height scale of the LRC will create an inspiring room promoting scholarship.

The LRC will benefit from a displacement ventilation system below the floor, which incorporates a plenum below the floor ensuring a fresh air supply is evenly distributed to the whole space, refer to Volume III: Services Engineering for further detail.

Artificial lighting is designed to supplement a high degree of daylight. General ambient background lighting is provided by both uplighting the underside of the lecture theatre curved soffit and downlighting within the double height zone. Task lighting will be incorporated to the head of bookcases and individually switchable from within each study carrel, shared reading table or desk. This energy efficient approach ensures that the correct lighting is offered from a local source at the point of need without over lighting the entire volume of space.
Interior Design
3.2 Public Wing
Interior Design
3.2 Public Wing

Outreach Space

The Cavendish runs a busy and popular Outreach programme throughout the academic year. The programme engages with schools, colleges and the general public to take part in organised events, for example ‘Physics at Work’ a 3-day event that sees hundreds of secondary school students taking part in presentations and demonstrations by Cavendish physicists. The new building will accommodate regular visits of class groups up to larger public open day event. The building is designed for this temporary ‘swell’ in population with supporting spaces co-located together in the public wing, with convenient connection to the undergraduate teaching labs in the northern wing.

The dedicated Outreach Room is located at ground floor within the public wing. This is a multifunctional classroom space incorporating an acoustic sliding folding partition wall allowing the room to be setup with one side of the space for experimental work and demonstrations, the other half for seminar and discussion. It can also be fully open plan to cater for larger seminar events – supported by a large projection wall and full dim-out blinds. The room will have good connectivity to teaching labs, lecture theatre, LRC, cluster seminar room, exhibition displays and be nearby to WCL. An Outreach office and store/prep room is directly accessible off the main room. The room will be served by an array of floor boxes to allow for different furniture layout permutations.
Interior Design
3.2 Public Wing

Outreach, Event Mode Experiential Wall
3.3 Central Administration

The central administration zone occupies the 3rd floor of the public wing and co-locates the following accommodation:

- Teaching directors
- Graduate & under-graduate support
- Central Administration (including human resources, accounts, ICT and research group clerical support)
- Meeting Rooms
- Print room and store
- Board Room
- Head of Department’s Office
- Head of Department’s PA
- Head of Department’s Meeting Room

The central admin office is open plan with a series of small private meeting rooms provided for accounts, human resources and the department administrator for confidential meetings. The zone has a central hub space with tea point and break-out zone, this doubles as a refreshment/pantry for the adjacent Board Room. All offices are designed to maximise natural daylight with generous glazing affording views across to the centre of Cambridge. Careful attention has been given to the interior finishes of the offices and support meeting rooms to achieve appropriate levels of acoustic separation. The concrete superstructure of the building is expressed and used for thermal mass in-order to balance out peaks in temperatures. Highly absorbent suspended acoustic baffles will mitigate acoustic reverberation, in addition the floor finish will be carpeted throughout to eliminate footfall. Walls will be a mixture of drylined or glazed partitioning (for adaptability), with hardwood oak veneer doors to match and continue the natural wood finish throughout the public wing.

The Board Room will receive an enhanced level of finish with the addition of a slatted acoustic wood panelled storage wall and additional feature lighting to a soffit suspended acoustic island raft. The furniture selection will be made at a subsequent stage, the adjacent illustrations set out the design intent to coordinate the architectural aspirations.
Interior Design

3.3 Central Administration
3.3 Central Administration