

Project Directory 01

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AULA- AN URBAN UNION



Aula - project for an urban union

<u>section</u>	<u>contents</u>	
1	project information	1.1 thesis outline p5
		1.2 the UMIST Campus p6
		1.3 project brief p8
		1.4 strategic approach p10
		1.5 typological invention p11
		1.6 cultural programme p12
2	detailed proposals	2.1 architectural synopsis p13
		2.2 urban integration p20
		2.3 tectonic strategy p24
		2.4 material hierarchy p25
		2.5 elements - cradles p27
		2.6 elements - aedicules p28
		2.7 elements - cabinets p29
		2.8 canons of good design p30
		2.9 superseded scheme p31
3	technical information	3.1 operation and administration p32
		3.2 access and safety p33
		3.3 planning and legal obligations p34
		3.4 current regeneration plans p34
		3.5 register of research outputs p35
		3.6 L1000 proposed plans app.
		3.7 L1100 proposed elevations app.
		3.8 L1200 proposed sections app.



Aula - project for an urban union

stage 01
design
project

is phase one of a two stage combined design and research project within the broader thesis of

Spaces of Edification - re-integrating the urban university campus

overarching
MPhil thesis
project

1.1 Thesis Outline

Spaces of Edification is a project which examines the relationship between higher education and the built environment. As inferred by the term 'edification', this project concerns the edification of students as good citizens, one objective of the modern university, and the etymological cognate in the word 'edifice', denoting the university campus as an environment dedicated to individual and collective betterment.

The broader thesis in which the Aula project is situated consists of a bipartite design project nested within a research project whose scope extends beyond the immediate design concerns captured in this document. This thesis examines the university campus type, in particular the urban campus within the city. Campuses are physical realisations of the idea of the university as a self-sufficient polity - a contained miniature city, with its own form of government, world-view, population, residence, objectives, pedagogy, policing, social hierarchies etc - the campus is a physical infrastructure capable of accommodating the polyvalence of the modern university.

This thesis is concerned primarily with the postwar proliferation of university campuses in England coinciding with the democratisation of higher education under the welfare state. One such campus planned in this period, which forms the site of this study, is the University of Manchester Institute of Science and Technology (UMIST) Campus. The containment of this campus at the fringe of Manchester City Centre elicits a rare urban situation: whereby the campus, as a small city itself, is implanted within the fabric of another city which circumscribes it.

Through a joint design and research project, this thesis examines the contradiction of how the insular UMIST Campus can be re-integrated into the larger urban entity of the city in such a manner to assert its autonomy, whilst splicing connections across the vacuum created at its border with the city. The first phase, an architectural project to anchor a cultural programme within the campus, is the subject of this document. The Aula, which will be succeeded by a wider urban strategy to refurbish the vacant shells of the existing campus buildings, will form the nucleus of this new microdistrict and urban enclave.



1_ project information

above

figure 1.01

The existing condition of the UMIST Campus site as a series of urban squares and verdant quadrangles

overleaf

figure 1.02

A citadel of learning - 'citadel', meaning small city, accurately describes the compact urban character of the campus

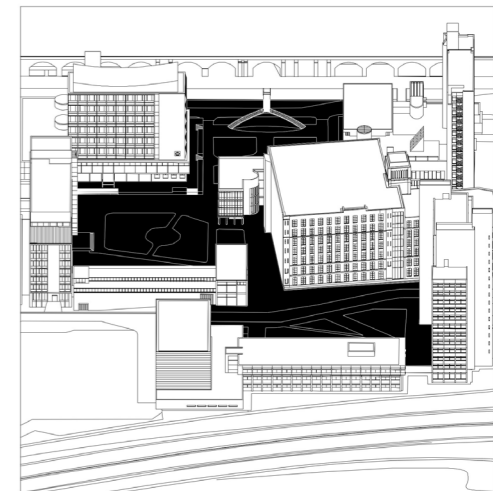


1.2.2 Spatial Parameters

The site as encountered today remains largely severed from the city fabric by a raised railway viaduct, and is cut off from the university proper by a number of major arterial and orbital roads around its perimeter. Consequently, the UMIST Campus has no coherent outward-facing urban image: buildings and structures which are designed and arranged to shield the site from noise and fumes create a series of barriers to movement which render the campus an urban island.

The sense of insularity is heightened by the urban form of the campus as a typological state of exception to the urban form of the city. Both the city and campus are grid-based structures, where the city is typified by an order of gridded streets with a parallel street edge, the campus is ordered on a chequerboard grid of alternating courts and object-buildings, connected by a continuous pedestrian ground plane. It is only at UMIST that the MEP plan for an integrated academic precinct was realised - this privileging of the pedestrian, the open form of connected courts, and the transformation of the city grid, establish UMIST as an alternative urbanism to the city which is neither entirely autonomous nor entirely mimetic.

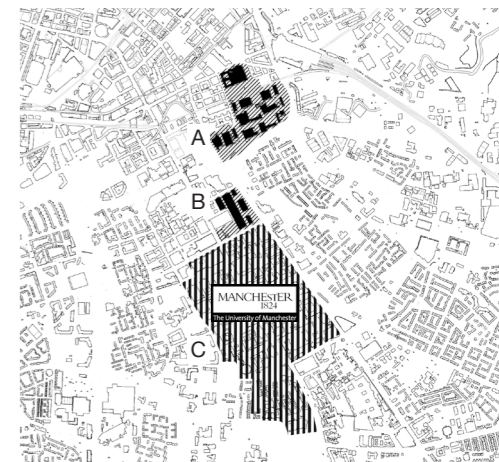
In counterpoint to the city's urban logic as an array of cellular parcels of land, the UMIST Campus is arranged more indeterminately as an open field - evoking the etymology of the word 'Campus' - that is, an environment conceived on landscape urbanism principles instead of the city planned on rational economic principles. Landscaped courts occupy a comparable footprint to buildings, conferring equivalence to the architectural (figure) and urban (void) elements of the campus. In sum, the UMIST Campus is an insular infrastructure of integrated parts. This conception of the campus is fundamental to the project for the Aula, which seeks to apply urban campus-planning principles in an architectural setting.



1.2.3 Current Status

Having merged with UMIST in 2004, the site's owner, the University of Manchester, seeks to regenerate the site as an Innovation District, involving the near-complete demolition of the campus. At the time of writing, the Manchester Engineering Campus (MEC), successor to UMIST, has been completed, and will accommodate the university's science and engineering schools. Upon accepting the first new cohort in 2022, UMIST as both a university and as a campus will become obsolete, clearing the way for new development.

This project aims to demonstrate that a viable alternative strategy is available to the university, which disputes that demolition is the most desirable course of action. Furthermore, this alternative 'counterproject' contends that market-led redevelopment for extramural purposes should not be a function of the university, instead proposing a civic and cultural programme whose programme direction would be the function of the university. The architectural and programmatic strategy for this proposal, titled the Aula, will be developed over the course of this document.

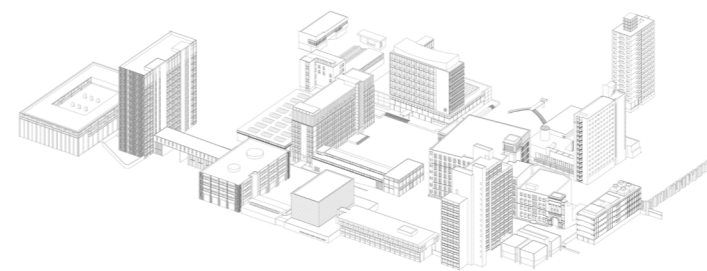


1.2 The UMIST Campus

1.2.1 Site History

The University of Manchester Institute of Science and Technology Campus, known commonly as UMIST, is located at the fringe of Manchester City Centre. The UMIST site was built as part of a masterplan for a new campus for the eponymous university which itself was subject to the larger Manchester Educational Precinct plan, which comprised a number of distinct higher education institutions reconciled by a collective development strategy. The MEP plan envisioned a substantial sector of the urban fabric zoned and ensconced from the city proper, with plans to divert road traffic away from the precinct in order to create an idealised academic environment of parks, piazza, and elevated pedestrian walkways.

The UMIST Campus superseded a former industrial area on the river Medlock, which was designated a Comprehensive Development Area and almost entirely razed, with the river culverted and redirected. This holistic planning solution enabled a tabula rasa condition for a newly formed institution with a purpose built campus. As the most central constituent of the MEP plan, the UMIST Campus was developed more 'intensively' than modernist planning principles recommend, as such, the campus retains a greater sense of urbanity than other elements of the plan.



above figure 1.03
Modernist picturesque: the UMIST Campus site as an urban walled garden

above figure 1.04
aerial view of the campus morphology as a grid-based cluster of point towers, tower on podia, and low rise wings

above right figure 1.05
the configuration of courts at the UMIST campus based on a chequerboard grid arrangement

below right figure 1.06
A: former UMIST Campus
B: MEC Campus
C: Main Campus

Aula (ˈɔːlə)

noun a large place where people can congregate, such as a hall
aula magna a great hall or large classroom used for special occasions at a university

1.3 Project Brief

1.3.1 Stage 01 Project - the Aula

Loaned from the nomenclature of a university assembly hall, the Aula is a new typology adapted from a previously institutional setting which generates a novel civic programme. The project assembles a varied cultural programme within a single integrated environment, alongside leisure, civic, and public service programmes. Foremost, the Aula is a non-institutional interior for public assembly, supported by an evolving programme of event and activity, it seeks to condense the cosmopolitan condition of a campus into public complex and generate new social and cultural possibilities from the combination of people and event within.

In such a regard the Aula emulates another university typology which has no immediate extramural equivalent: the student union. The Aula should provide the personnel and physical apparatus for citizens to stage their own events and campaigns, and offer services for public representation to facilitate a democratic urban citizenry. The Aula hosts local municipal services, societies, and citizen's support groups, and combines that programme with an open cultural programme to elicit a new typology of an urban union.

Whilst the brief for the Aula specifies a collection of primary cultural programmes, the overarching purpose of the Aula is its indefinite function as a public commons, an indeterminate vessel of public interaction without a requisite programme and absent of convention and instruction prescribing codes of use. The non-prescriptive 'unprogrammed' spaces account for a large proportion of the overall floor area and are intended as a sort of mixing hall for the various programmes which aggregate around it - enabling the Aula to act as a space of public potentiality.

<u>Unprogrammed areas</u>	m ²
Aula Floor	800
Public Stoa	250
Concourse	750

<u>Primary Programme</u>	
People's Hall	250
Tower Library	550
Picture Gallery	450
Georgian Theatre	220
Citizen's Bureau	400
Roof terrace	300
Common Room	300
Bookshop	200

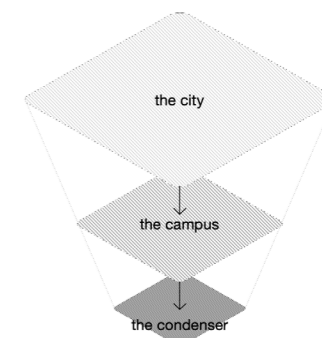
<u>Ancillary Programme</u>	
Kiosks	60
Canteen	70
Bridge Cafe	40
Bar	40
Pariser Foyer	180
Mill Foyer	200
Staff House	150
Staff Administration	350
'Attic' Back of House	400

1.3.2 Thesis and Brief Alignment

Whilst not a conventional university building in itself, the Aula is an attempt to capture the 'urbanity' of the university campus in an architectural form as a cultural condenser. Conceiving higher education under the broader umbrella of 'edification' permits fecund typologies (such as the union) to be translated from a university to a public context without translating the institutional and paternalistic tendencies of the university. This broadening of the terms of reference attempts to fulfil broader thesis questions regarding how a university campus can be made urban, and therefore re-integrated into the city. The Aula therefore has a double orientation, to its conceptual progenitor of the campus, and beyond as an analogue of the city at large.

To this end the Aula project has two ambitions:

- 1 - to intervene in the UMIST Campus to introduce a civic dimension to an otherwise institutional environment
- 2 - to apply the idea of the campus, and the attendant urbanity, to an architectural form



left **figure 1.07**
 the People's Hall - an 'Aula' in the conventional meaning of the term: a large congregation hall shown here during a people's assembly with local politicians



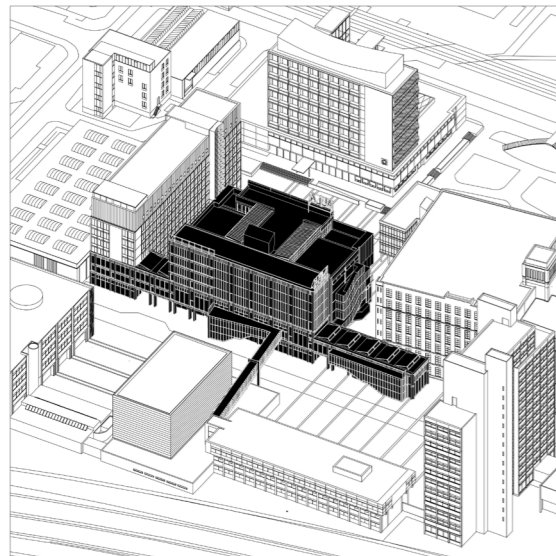
top right **figure 1.08**
 distillation of urban archetypes: from the city, to the campus, to the 'condenser' typology.

above **figure 1.09**
 early conceptual proposition which sought to reify the urban structure of the campus on a microcosmic scale

1.4 Strategic Approach

1.4.1 Aula and Campus - a Two Stage Framework

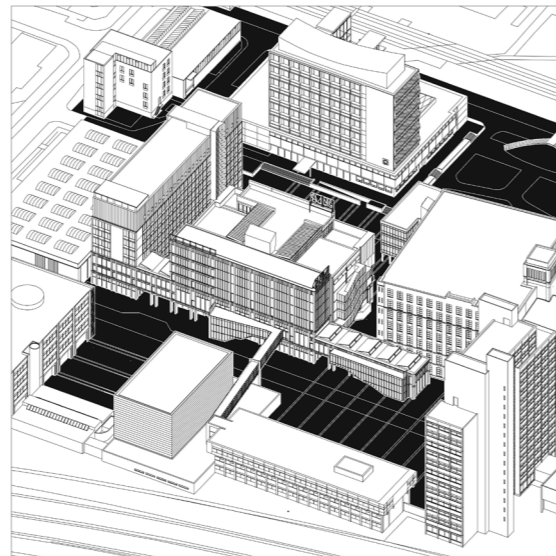
On a schematic level the project is conceptualised in two stages, however the two stages overlap to ensure a cohesive and reciprocally informed architectural and urban design strategy:



Stage 01 - Aula

Discipline: architecture
Intervention: new build

architectural project which integrates existing buildings and immediate public realm to initiate later development.



Stage 02 - Campus

Discipline: urbanism
Intervention: renovation

project to repurpose the existing building stock and re-integrate the campus with a coherent urban design strategy.

1.4.2 Holistic Architectural and Urban Design Approach

The Aula typology, having been removed from a strictly university-related domain is freed of institutional restraint. Its cultural programme would be developed reciprocally alongside its architectural development, and whilst the cultural programme would be managed by the university as part of its civic mission, the true client would be the public it serves. This process mimics the formulation of the new universities which form the subject of this thesis: where concerted development of the architecture, urbanism, and an innovative 'map of learning' formed a new idea of a more democratic university (campus). This approach, of conceiving of architecture as a medium of broader social, cultural and political ideas is fundamental to the Aula - which becomes an fulcrum for a new microdistrict, a foyer for the campus.

Any project concerned with campus design necessarily operates on a double scale: the architectural scale of the single building, and the urban scale of the whole campus. As denoted in part 1.1, a true campus is conceived as a *gestalt* - an integrated entity which signifies more than the sum of its constituent parts, and can be conceptualised further as a small city. Therefore, current planning convention which conceives of an architectural project within the boundary of the 'red line' legal demise negates the possibility of designing a campus as an infrastructure of mutually interdependent parts. A holistic approach is required.

This project seeks to rectify myopic design practices with a two stage project framework on first; an architectural scale of the Aula project itself, and second; a strategic plan for re-use of the existing campus buildings and cohesive public realm improvements. The Aula is considered the civic anchor building at the nucleus of the campus, whose cultural programme initiates the process of gradual re-inhabitation of the quarter.

above

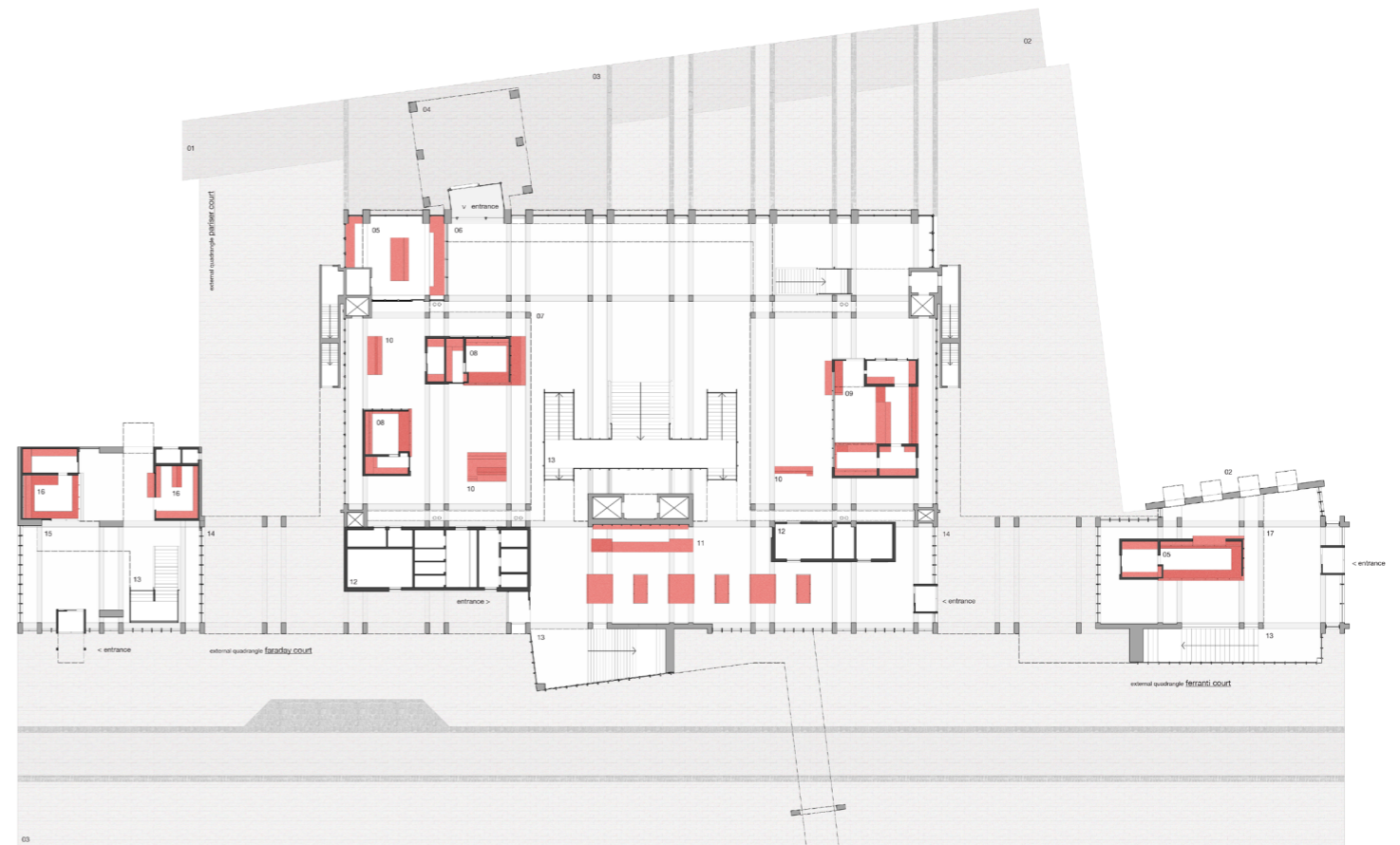
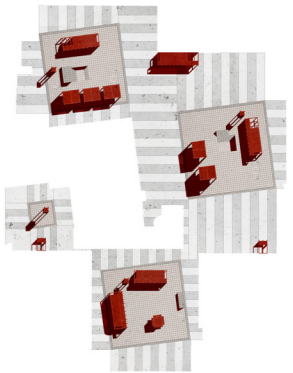
figure 1.10 and 1.11

A two-stage architectural and urban design framework for redevelopment

1.5 Typological Invention

1.5.1 Figure and Field: Department Store to Factory Floor

The purpose of the Aula is a building in service to the campus and city. It adapts unlikely typologies in an attempt to create an urban interior comprised of smaller nested interiors. The Aula floor itself can be likened to varied typologies: from a department store layout to a factory floor, in its wide span unimpeded interior and open 'field' arrangement of more specific installation-like forms. In its architectural organisation it is like a department store, in the way movement on this field is non-prescriptive, and like a factory where each work-station has a distinct purpose but function collectively. The Aula draws upon diverse and incompatible typologies in order to generate an architecture which does not govern behaviour by falling back on archetypes with associated codes of conduct.



The ground plane, upon which a number of small building 'aedicules' are arrayed, forms a platform for encounter on a more intimate scale than the immensity of the hall itself. A number of figures - i.e tangible architectural forms - are arranged in the field - i.e the non-deterministic ground plane - to create pockets of space on the Aula Floor. The figures, called aedicules (meaning small buildings, see section 2.6), are buildings-in-interior. Each serving a specific function, and clustered to define programme-areas, it is the aedicule which provides the programmatic specificity in counterpoint to the otherwise use-less Aula floor. The play of figure and field is not only comparable to typologies such as the department store, and factory floor, but on a macro scale to the urban pattern associated with campuses.

The Aula seeks to distill the principles of campus planning to a 'miniature' scale of the single building. By telescoping an urban form into an architectural form a typological invention occurs. As set out in section 1.3 the project seeks to compress the urban-cosmopolitan condition associated with campuses, which in part is generated by the disposition of architectural events within a larger urban whole, into a single public interior, thus relinquishing the remaining buildings for their own typological transformation at a later stage. This attempt to harness an urban form architecturally aims to create a type of urban condenser, where space and event are mutually charged by the act of compressing different programmes into a single volume. Ultimately, the architectural proposition governing the organisation of the Aula is a question of urban planning on a micro scale, asking; how is a building like a city?

- 01 entrance to pariser building (existing)
- 02 entrance to mill building (existing)
- 03 paved forecourt (provisional layout)
- 04 porch under staff house
- 05 reception aedicule
- 06 stoa
- 07 aula floor
- 08 kiosk aedicule
- 09 canteen aedicule
- 10 seating/display plinths
- 11 bookshop
- 12 back of house area
- 13 stairs to concourse level above
- 14 loggia under concourse
- 15 pariser building foyer
- 16 concierge aedicule
- 17 mill building foyer

top left

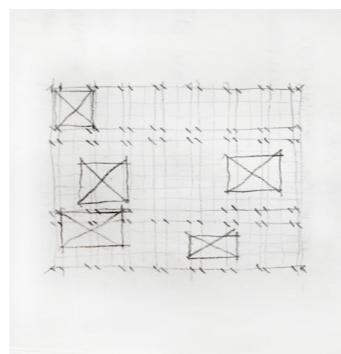
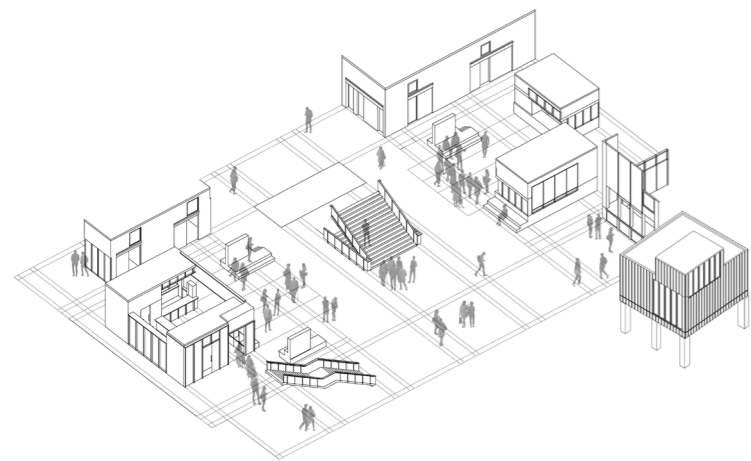
figure 1.12

Aula Floor plan - the ground plane as an inhabited field of aedicules (red) arranged to partially enclose programme-areas. cf. figure 1.09 and 1.13. external landscaping shown provisionally

top right

figure 1.13

Early conceptual proposition plan. The logic of clustering has been translated and internalised from this early conceptual position.



1.6 Cultural Programme

1.6.1 The Role of the University

Raised over the Aula Floor, and contained within two large vessels called 'cabinets', are the primary fixed programmes of the Aula (see section 2.7). These consist of the Tower Library, People's Hall, Picture Gallery, Georgian Theatre, and Citizen's Bureau. These are equivalents to programmes typically found on university campuses and managed by universities in a bid to promote civic virtues and cultural enlightenment - qualities which fall not under their direct remit of education, but within the broader umbrella term of edification. This project stipulates that the Aula administration and cultural programme is still associated with the university as part of their civic mission - the so-called 'Third Mission' of the university, which denotes their contribution to society.

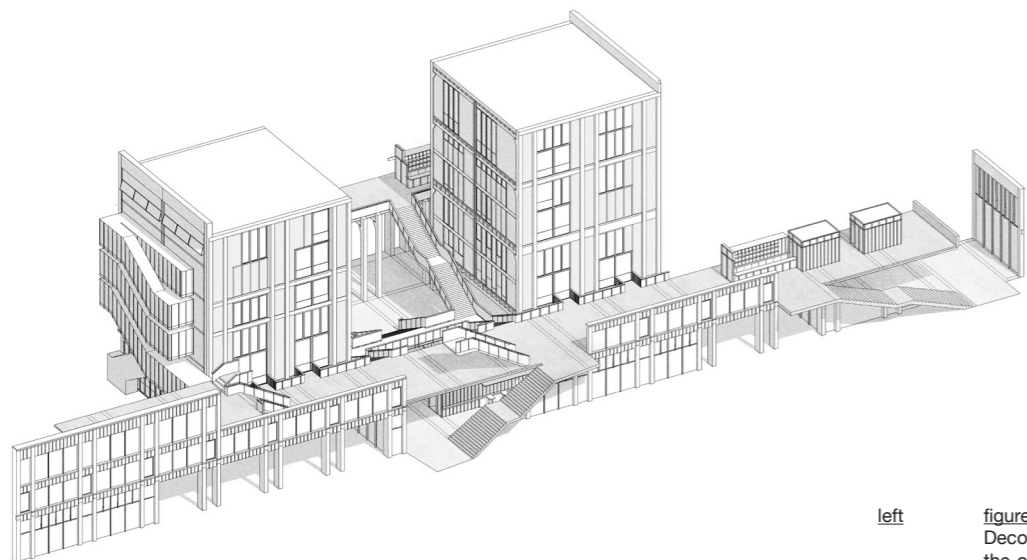
Under this strategy the extant University of Manchester freehold on the UMIST Campus site would finance the Aula cultural programme, and the ongoing operation of the estate. In this manner the private revenue of the university would contribute towards a subsidised cultural offering for the public - fulfilling their Third Mission responsibility whilst enabling a publicly-accessible cultural programme. Further covenants would be in place to restrict the university's privileges in order to establish the Aula as a viable democratic forum and uphold uninhibited public rights within the campus.

top left

figure 1.14
The arrangement of aedicules as figures-in-field emulates modernist campus planning principles of structuring space according to a conceptual scheme capable of tolerating deviation

top right

figure 1.15
Initial plan examining aedicule arrangement on the plane of the Aula Floor.



left

figure 1.16
Deconstructed view of the cabinets in relation to the concourse and Aula Hall. The Cabinets are two freestanding vessels containing the main cultural programme.



2_ detailed proposals

2.1 Architectural Synopsis

2.1.1 Aula - an Urban Union

The Aula is foremost a public interior. The Aula Hall provides a large volume and series of platforms for cultural, social and civic activities at the centre of a defunct campus - fundamentally it is an empty vessel for public appropriation and choice of action. Within that volume a series of fixed programmes, managed by the university in service of society, are stacked within two large cabinets which prompt cultural encounter and suggest the potential of new patterns of engagement in their interface.

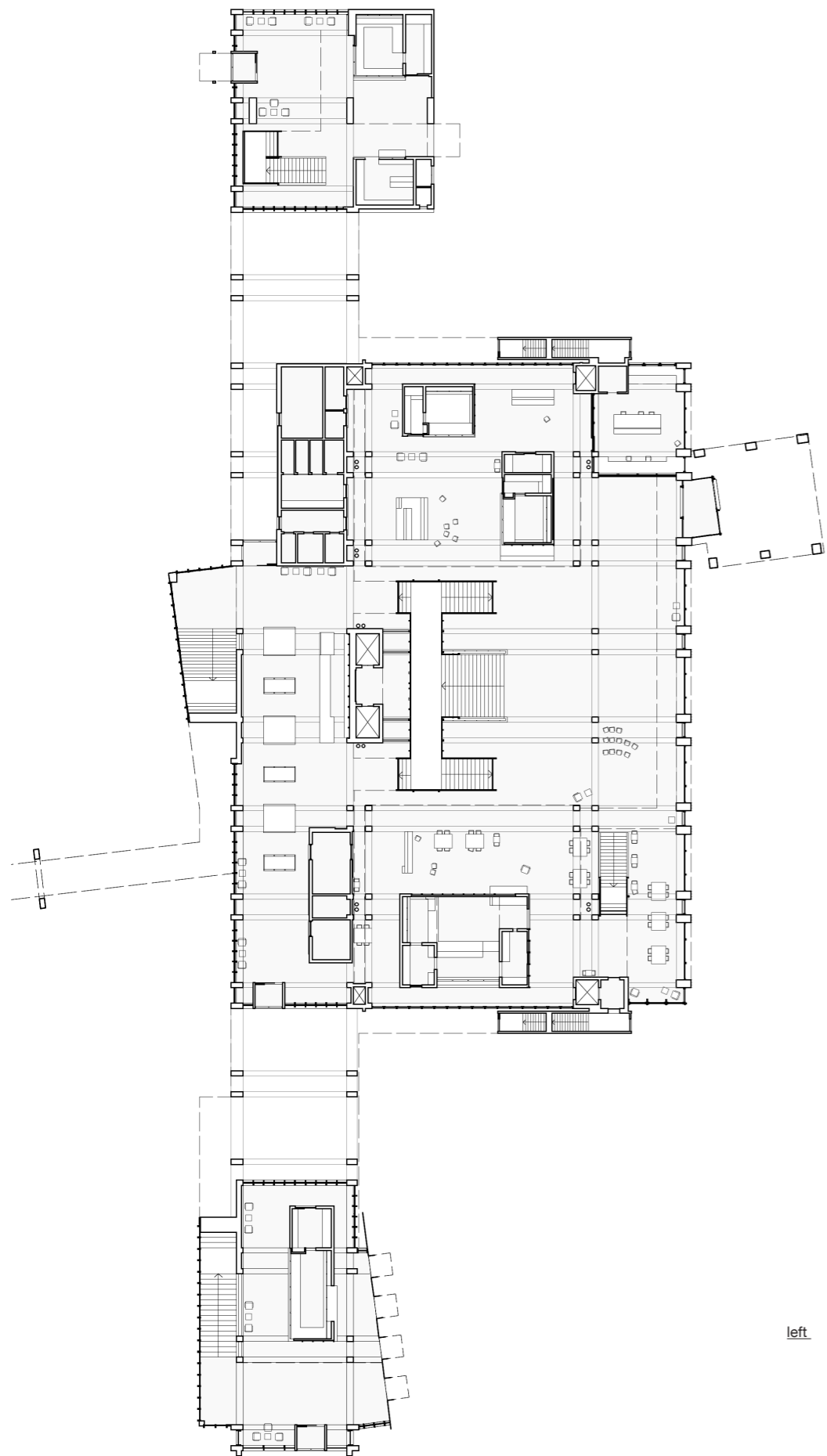
The Aula Floor is an extension of the ground plane into the building as the main space of participation, with wide spans enabling a largely unimpeded floorspace, punctuated only by clusters of aedicules which define more intimate pockets of space. Large sash windows onto an outdoor quadrangle allow interior and exterior to bleed into one another, and a new internal quadrangle is created between the two cabinets. Further platforms step up the section and form 'concourse' and 'city commons' levels - ready to be appropriated by the public or animated by the university

Suspended 'cradle' platforms and stairs draw the public up to the cabinets, within which the cultural programme is stacked in a series of nested interiors, i.e interiors within interiors. The spatial organisation of the Aula is based on a gradient of interiors; from the immense interior of the Aula Hall; to the more intimate interior of the cabinets, each with their own unique character; all implanted into the urban interior of the former university campus.

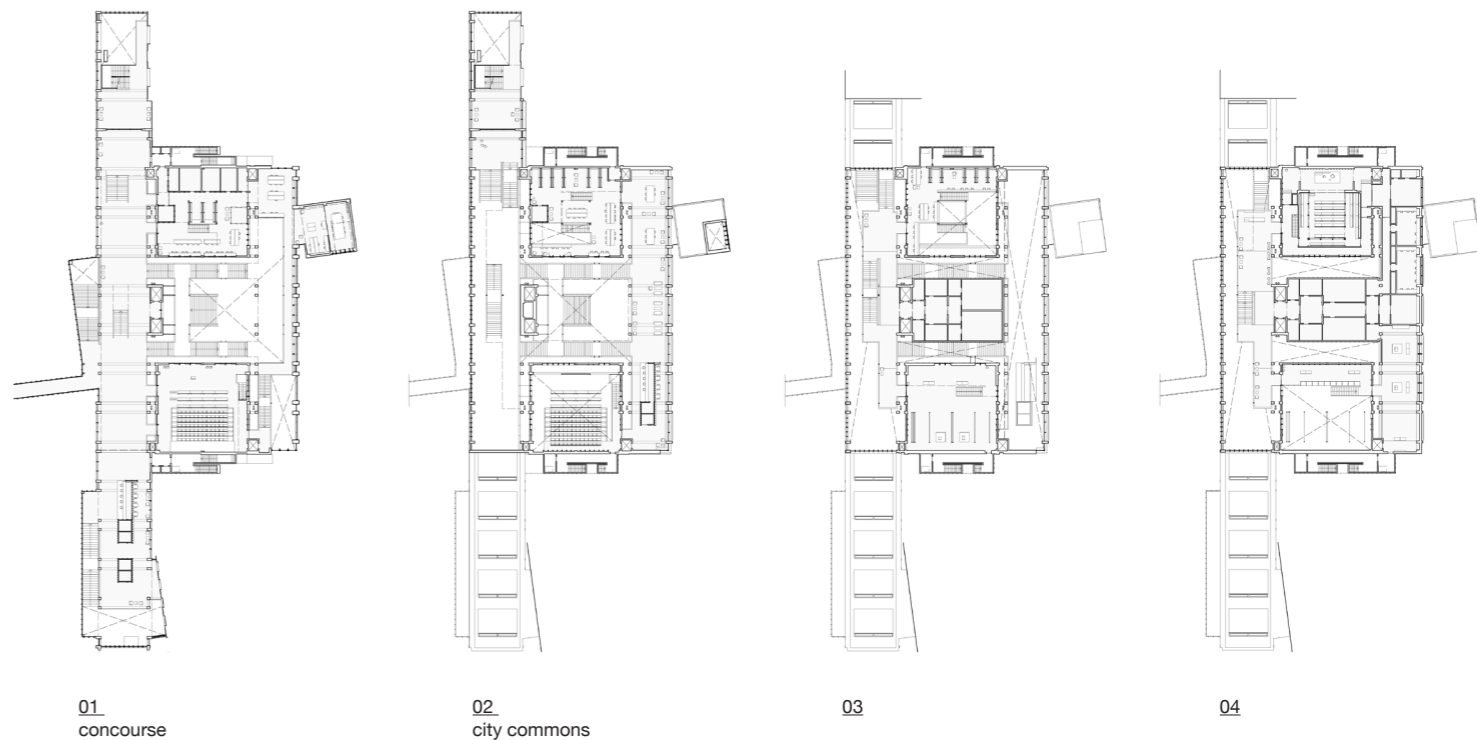
Tensions between monumentality and informality, indeterminacy and specificity, and immensity and intimacy define the challenge facing the Aula: which is to formulate an architecture capable of engaging the individual citizen as much as the public at large.

above

figure 2.01
A nucleated arrangement of kiosk aedicules form a smaller pocket of space within the immense environment of the Aula Hall



00
aula floor

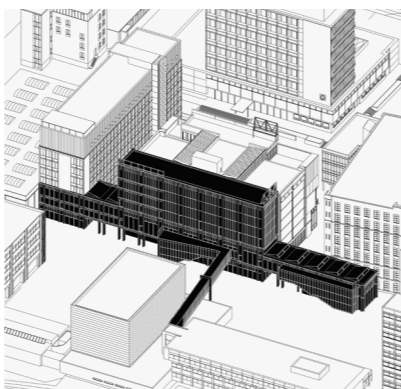


01
concourse

02
city commons

03

04



left

figure 2.02
abstracted ground floor plan - showing internal 'landscape' of freestanding aedicules on the main Aula Floor. Two separate foyers (top and bottom) give access into existing buildings (hidden) and are connected at first floor level by a 100m long elevated concourse. External figures at the building threshold are inflected off-axis to match the alignment of the existing mill building, to register its presence.

above

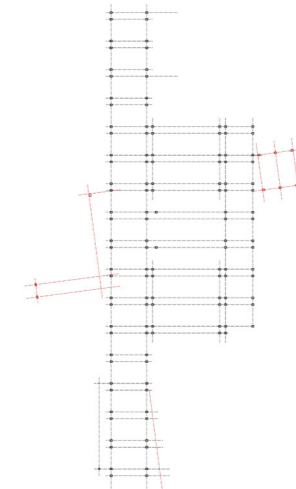
figure 2.03
the concourse (shown in black) integrates a number of existing buildings at first floor level forming a spine for horizontal circulation

2.1.2 Plan-form - Mass and Grid

The plan is ordered by pairs, and quartets of columns arranged on a tartan grid. The grid expands and contracts to create expansive, clear-span floorplates, to narrow high-vaulted spaces, to the compact interstices between column zones. Spans across the space between columns are maximised within the Aula Hall to enable clear 14m spans beneath the cabinets, whose appearance of mass and weight overhead (see figure 2.01) creates two more compressed atmospheres within the hall. Furthermore, the cabinets are ostensibly structurally independent masses freestanding within the Aula Hall, an effect elicited by the clustering of columns, and the separation zone between them.

Conversely, within the grid framework, a series of aedicules are scattered in an apparently aleatory fashion to create clusters and clearings within the hall. Their solid and cubic form poses a contrapuntal architectural language to the clearly modernist exposed structural frame: a language which seeks to create an interior 'townscape' of more localised events. The grid framework accommodates these points of exception on a series of platforms, which step up through the building section, bringing about a tension between the ideal order of the grid and the contingent form of each aedicule.

See L1000 drawing series in appendix for full plan set

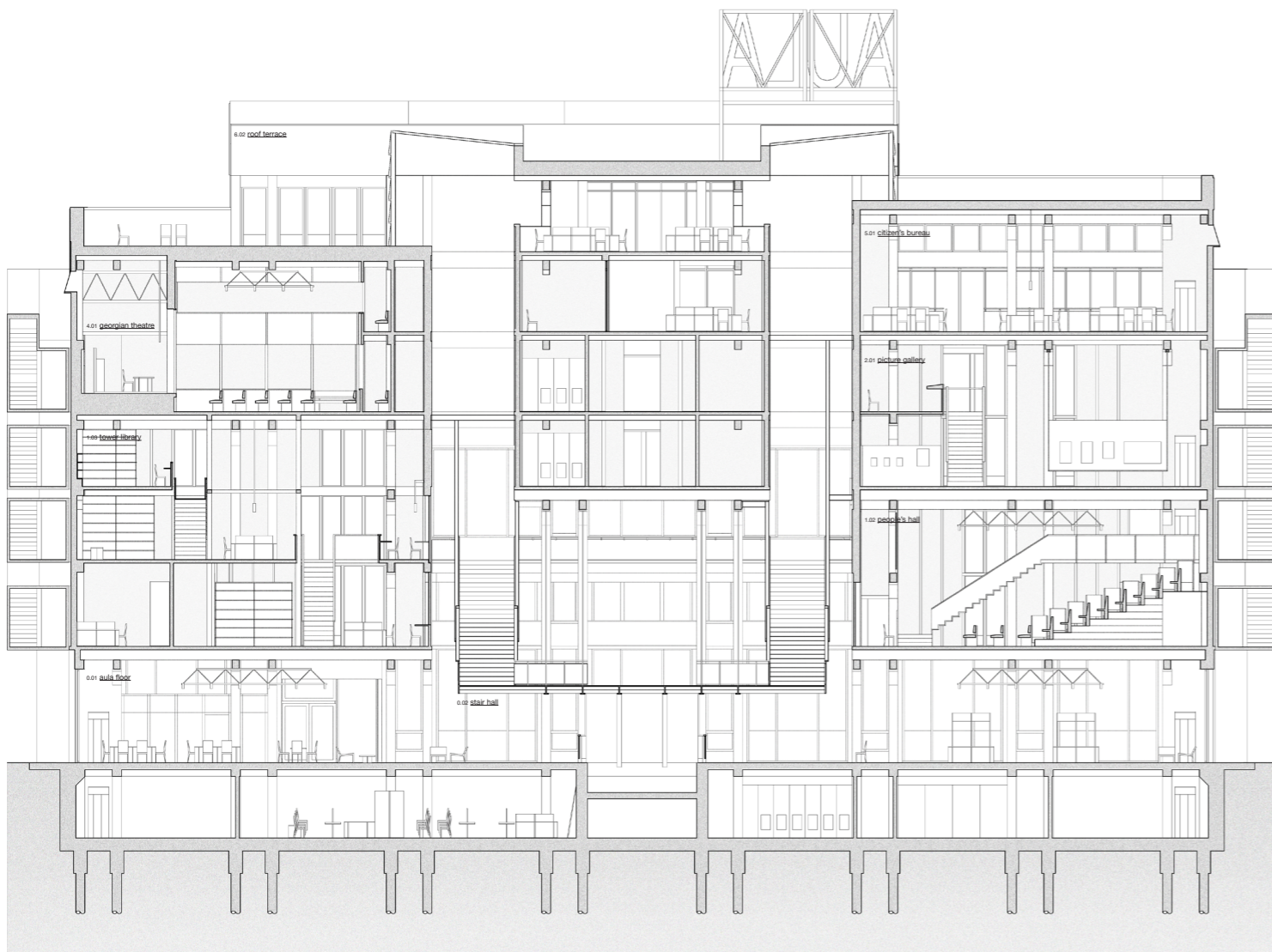


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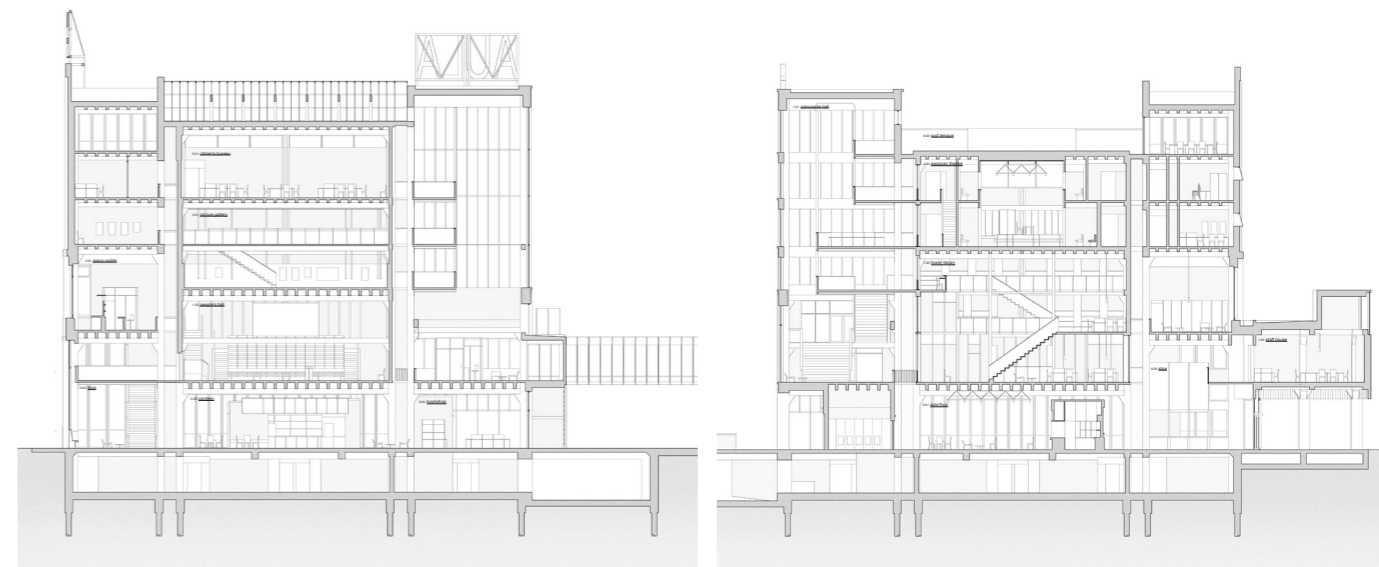
figure 2.04, 2.05, 2.06, 2.07
L1000 series floor plans - left to right: first floor (concourse), second floor (city commons), third floor, fourth floor. not to scale.

right

figure 2.08
structural grid - the internal arrangement is based on a logic of intercolumniation of paired columns on a tartan grid. inflected elements on secondary grid shown in red



AA - aula hall section



BB - east cabinet section
people's hall
picture gallery
citizen's bureau

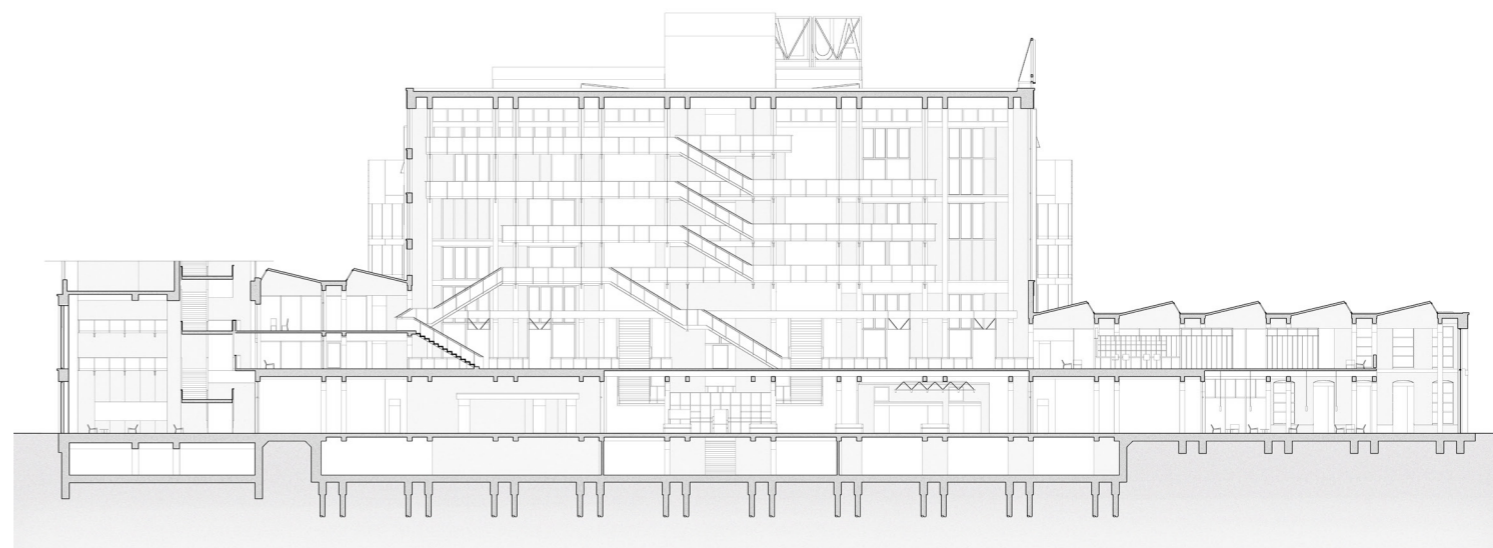
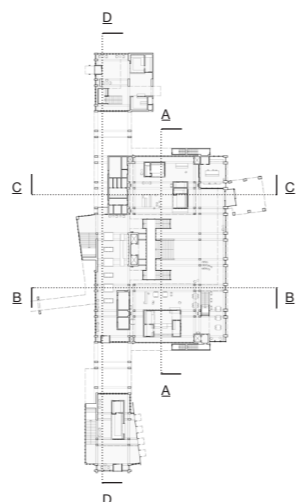
CC - west cabinet section
tower library
georgian theatre
roof terrace

2.1.3 Section Arrangement - Heavyweight and Lightweight Elements

A tension of heavyweight (mass) and lightweight (grid) defines not only the plan, but also elements of the section. Three major heavyweight masses occupy the Aula hall volume. Two cabinets bracket a suspended central service block, they are themselves shells within the outer shell of the Aula. The cabinets are composed of a stack of compartments within which the primary cultural programmes are housed. Section AA (above) demonstrates this arrangement of boxes within boxes, and the sense of suspension over the Aula Floor at ground level, which acts as a shared foyer for not only the cultural programmes overhead, but for the public at large.

The heavyweight tectonic language of the cabinet masses is counterpointed by hanging circulation 'cradles'. The cradles, so called because of their suspension on a series of cables, support stairs, landings, and platforms visually distinguished in lightweight green steel (see section 2.5). They are strung between and fixed onto the cabinets, forming the primary mode of vertical circulation between programmes. The architectural technology of the cradles, frees the Aula Floor of more columns by means of horizontal restraints and vertical support from above - this is an architectural element quite literally held in tension.

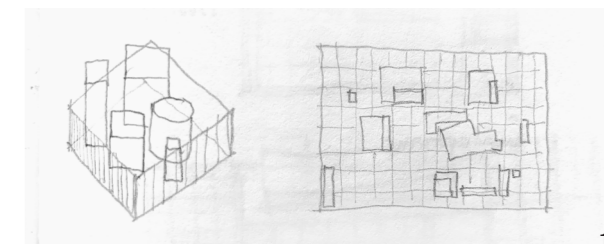
Internal volumes are largely defined not by walls, but by the ceiling, which alternates between the appearance of high capacious ceilings and low compressive spaces. A trabeated language of corbels, beams and joists gives depth and articulation to the soffit, which renders the grid plan visible from below.



DD - concourse section

above and facing figure 2.08, 2.09, 2.10, 2.11
L1200 series sections - not to scale. various sections showing stacking disposition of volumes within the Aula

right figure 2.12
conceptual diagram - the campus morphology as a conglomerate of objects and masses on a grid carpet

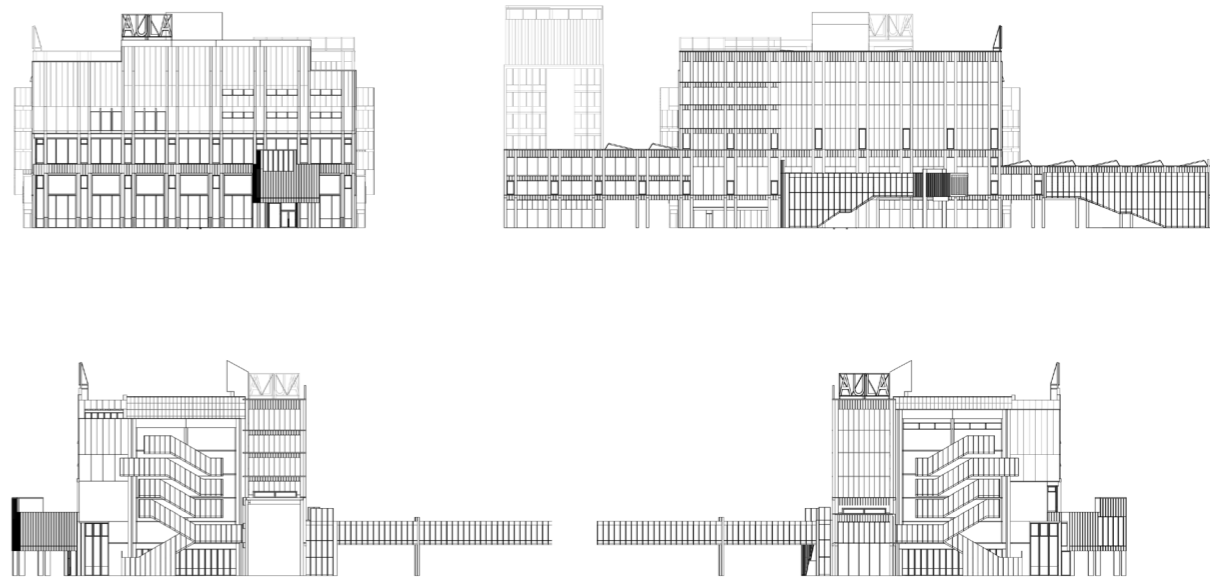




elevation A
civic facade



elevation B
concourse facade

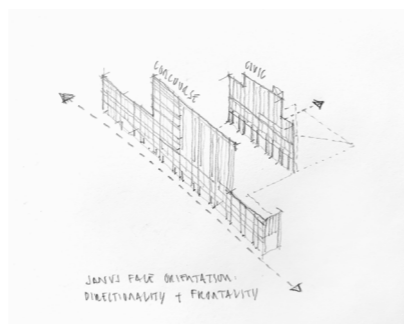
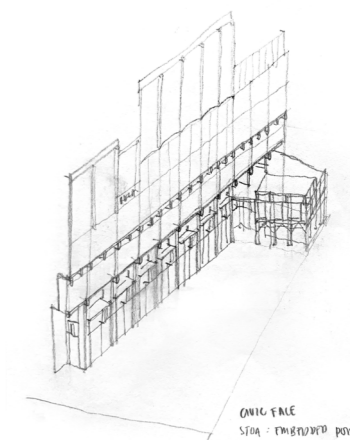


2.1.4 Elevational Treatment - Composition by Combination

By virtue of scale alone the Aula is oriented to a number of different urban conditions within the campus, and responds architecturally through the 'inflection' of its envelope. Counterintuitively, the Aula seeks to integrate and locate itself by centring the building outside of itself. This is achieved by inflecting each facade to the condition to which it responds. For instance, the civic facade which faces the interior of the campus presents the Aula as a freestanding palazzo shifting away from a classical antecedent by a subtly asymmetrical arrangement whose mass gravitates towards key aspects and approaches to the building. Whereas the concourse elevation negates frontality by its sheer length alone denying any all-encompassing viewing position. The concourse asserts movement, where the civic face is static, its 100m length and internal street mirrored by an external parallel street which is punctuated by bridges, projecting stairs and loggias which erode its monumentality.

This double orientation, and dual modern and classical sources, establishes the external expression of the Aula as a janus-faced architecture, which aims to heighten a series of conditions into an integrated whole. As such, it can be conceived more as a complex, than a building. Its logic of composition is based on combination, rather than an intellectual ordering, and recalls early modern movements from the Nieuwe Bouwen to Russian Constructivism. The flanking elevations project the internal masses of each cabinet onto the envelope of the Aula, with expressed external fire escapes emphasising the taut surface relief behind. This motif is present on the flat surface of the concourse, where a planar vertical surface is interrupted by various appendages which plug into adjoining buildings in an unpretentious manner reminiscent of modernist exemplars, such as the Van Nelle Factory - rendering the concourse facade the functionalist counterpart to the compositional civic facade.

See L1100 drawing series in appendix for full elevation set

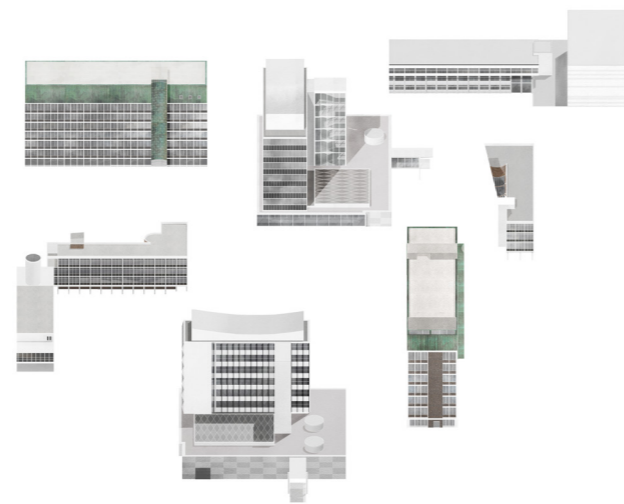


above top and middle figure 2.13, 2.14
janus-face facades. the concourse and civic faces respond to and heighten their respective urban conditions

above bottom figure 2.15
sketch - double orientation, concourse suggests directionality and horizontal movement, the civic face is static and suggests frontality

above figure 2.16, 2.17, 2.18, 2.19
L1100 series elevations - not to scale. Composition by combination: elevations project the internal separation of masses

above right figure 2.20
facade development sketch - civic facade as a scenae frons enclosing a quadrangle, with the staff house off-axis inflected to an adjacent building orientation



2.2 Urban Integration

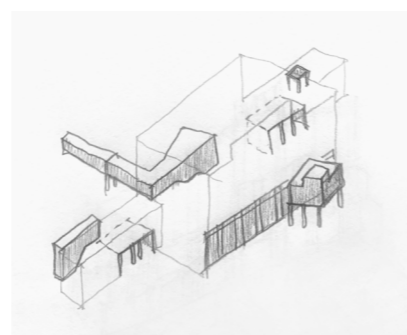
2.2.1 Campus (re)Planning

The Aula is conceived of a campus-in-interior, translating campus planning logic from an urban scale to an architectural scale. In the same vein that the campus is inflected to the city insofar as it is a small city, the Aula is inflected to the campus insofar as it is a microcosmic vertical campus. Research into the UMIST Campus has identified its deficiency in integrating with the surrounding urban fabric at its border, a deficiency the Aula does not perpetuate in its interface with the public realm. Conversely, this thesis has also identified these moments of friction in the urban fabric as potentially advantageous ruptures which help to establish identity in different quarters of the city. The tension of formal autonomy and local integration is a contradiction which the Aula seeks to exploit in its interface with the urbanism of the campus.

The elevations of the Aula reflect the multiple urban situations which it addresses. The campus does not consist of one homogenous condition, and the facade treatment of each facet of the Aula seeks to heighten the condition which it faces. On all sides, the Aula elevations are robust, monumental inhabited facades, with a generally planar massing counterposed by projecting elements which give definition to the public realm. This conception of the facade as a series of compositional planes adopts the modernist idiom of the existing building stock, but seeks to offset its neutrality with 'inflected' extensions which visually reference, and connect to the existing campus buildings.

As previously described, the differentiation of the concourse facade and the civic facade aim to heighten distinct spatial conditions. Whilst the civic facade is formal and encloses a clearly bounded quadrangle, the concourse facade is elongated to suggest movement by spatial extension, whilst projecting elements create subtle limits and boundaries to new smaller quadrangles. Beneath the first floor concourse level, two loggia are hollowed out to form entrances and urban linkages through to the urban spaces beyond (figure 2.23). The grid of the concourse facade is made permeable at its base, eroding its wall like quality with apertures and appended structures.

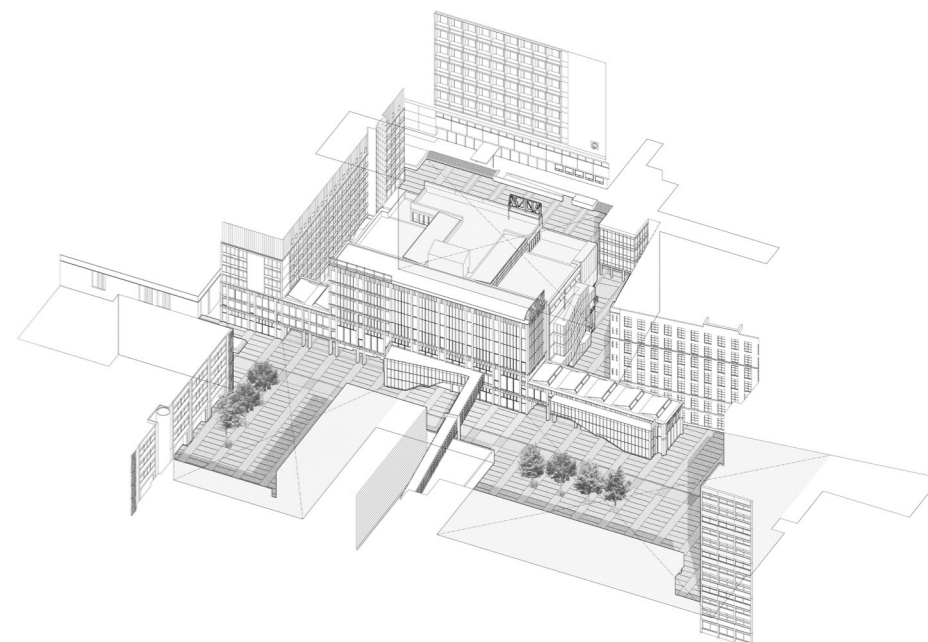
The ground plane of the campus is restructured not as a continuous undifferentiated field as is typical of modernist spatiality, but as a sequence of delimited spaces where the condition of enclosure becomes salient. Voids in the campus are spatially partitioned to form outdoor 'rooms' in previously ill-defined areas with the Aula building forming at least one wall to the new outdoor room. The taut nature of the facades is considered a thin membrane between internal and external conditions, nowhere is this more apparent than the base of the civic facade, where the heaviness of the colossal order reaching the ground is counterposed by the lightness of the open stoa bays (figure 2.24).



above top figure 2.21 elements of the campus as formally autonomous figures in field

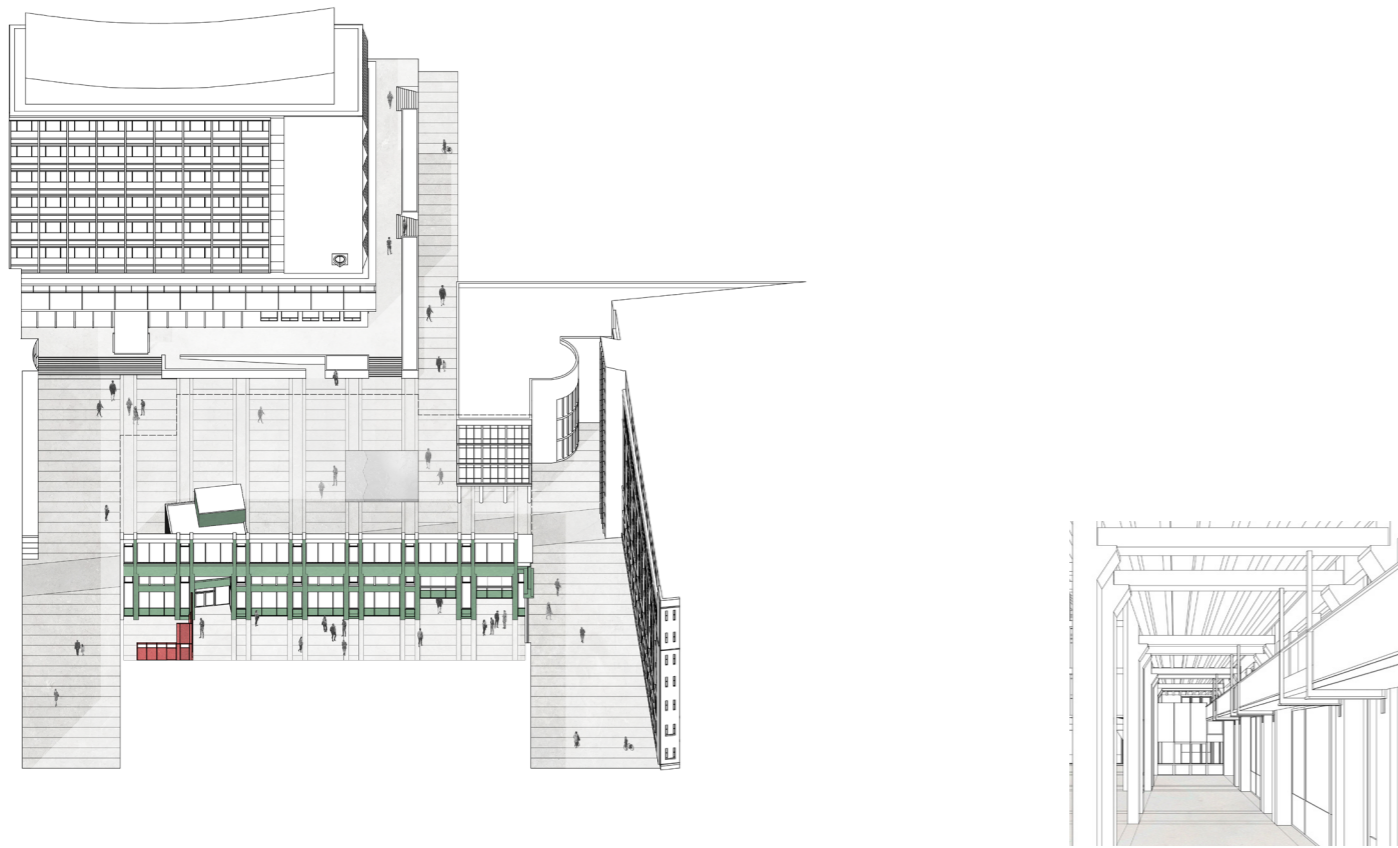
above middle figure 2.22 aula elevations consist of neutral compositional planes foregrounded by inflected extensions which define the public realm providing recognisable figures.

left figure 2.23 view of the concourse elevation showing a entrance loggia under the first floor concourse level.



above top figure 2.24 sash windows in each bay of the stoa open to enable a porous civic facade between the aula and campus.

above figure 2.25 view of the new quadrangles formed between existing buildings and the Aula, linked by ground floor loggia beneath the concourse



2.2.2 Stoa: A Foyer to the Campus

The civic face of the Aula consists of a double height ground floor 'stoa' - a civic threshold adapted from the ancient agora - which increases the porosity of the Aula Floor as an extension of the external public domain. The Stoa does not seamlessly blend the internal and external conditions, but aims to heighten and separate those conditions eliciting a clear sense of crossing to an interior, thus acting as an architectural filter at the boundary of two conditions. Five sash windows slide up into pockets to enable a permeable facade for events, whilst under normal circumstances entrance to the Aula is from one of five vestibules distributed around the building.

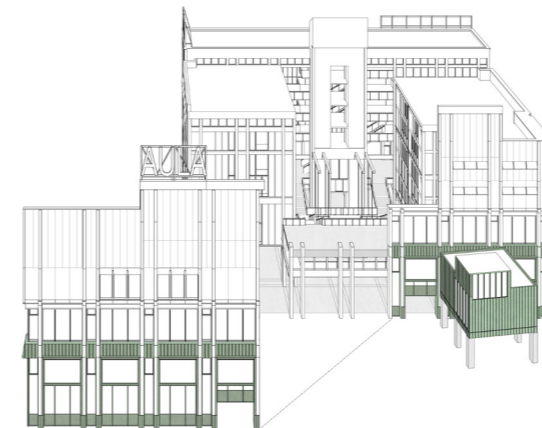
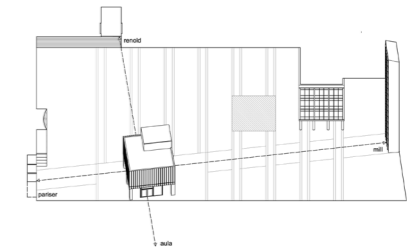
The Stoa zone provides a buffer between the external quadrangle and the Aula Floor internally - implicitly defined by a parallel row of columns, or indoor colonnade, lining the base of the civic facade. The Stoa becomes an indeterminate space which can act as a natural extension of either the indoor programme of the Aula, or the outdoor public realm. This relationship, mediated by the large sash windows to the campus, establishes the Stoa as an element of both the Aula and the campus: a foyer to the campus.



2.2.3 Nodes in a Larger Network

The principal entrance is accessed from a loggia beneath the Staff House which is rotated in plan to align to contextual parameters. This orientation aligns the entrance porch with three other existing entrances to nearby buildings, creating a cruciform in plan across the quadrangle visually aligning with other campus buildings (figure 2.30). The staff house becomes a focus within the quadrangle, its diminutive object-quality in counterpoint to the recessive and monumental 'scenae frons' civic facade which serves as a simple screen to the life of the campus.

Furthermore, Integration is quite literally achieved by the Aula's physical implantation into multiple existing campus buildings, which, under the second phase of this project, will be repurposed as housing. This connectivity creates an elevated pedestrian route around the campus issuing from the Concourse, as a foyer for the wider urban district. This internal network of streets establishes the Aula interior as its own contained topography.



above left **figure 2.26**
planometric view of the stoa as a filter between internal and external landscapes, mediated by 5 double height sash windows. landscape shown provisionally

above **figure 2.27**
view within the stoa, looking to the reception aedicule at the far end. the stoa provides civic depth to the ground plan, acting as a point of interaction between the aula and the campus

left **figure 2.28**
view from the mill entrance, along an oblique paved surface, through the porch of the staff house and to the entrance of the pariser building. the staff house is aligned to the mill building and is mimetic of nearby campus structures.

above top **figure 2.29**
view upon entering the Aula via the principal entrance loggia. The Stoa acts as a buffer zone to the Aula Hall beyond

above **figure 2.30**
schematic view of the quadrangle. the rotation of the loggia to the orientation of the mill corrects the misalignment of existing building entrances and re-orders the square

left **figure 2.31**
deconstructed view of the 'scenae frons' civic facade as a simple backdrop to campus life, with the staff house providing a recognisable object-like fix in the quadrangle



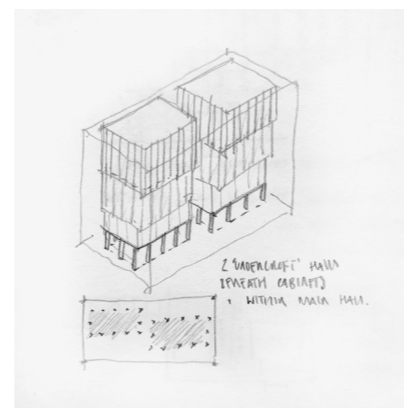
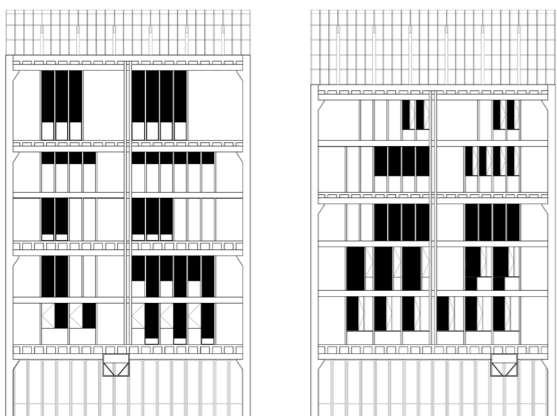
2.3 Tectonic Strategy

2.3.1 Trabeated Construction

The architectural design of the Aula is based on a rational structural grid of columns whose trabeated logic is expressed by the elements of post, corbel, and beam. In line with the canons of the International Style - of which the UMIST Campus is a local exemplar - walls are reduced to their most essential expression as columns, whose repetition across space characterises the spatial condition of the Aula Floor. Columns are paired or clustered in quartets and syncopate in plan to open up larger volumes or infer partition and define smaller pockets of space.

The columns adopt another modernist element of the 'piloti' where they support the superincumbent mass of the cabinet. The cabinets read as structurally independent buildings-within-a-building by virtue of their separation from the main superstructure by a 900mm void, an effect elicited by the interstices of the doubled, and quadrupled column clusters.

The articulation of the ceiling, with beams layered upon lintels, which in turn are layered upon corbels, is expressive of the architectural logic of stacking, which dictates the programmatic arrangement of the building. Here, detail is used to express the overarching architectural concept. The use of this language, whilst referencing relevant modernist precedent, also facilitates large spans and reduces the volume of concrete in the floor slabs by 1/3. The stacking of longitudinal and transverse beams also increases the efficiency of building technologies, where ducts, pipes and electricians can run unimpeded through horizontal and vertical service runs without requiring slab penetrations.



above left figure 2.32
structural interface. view of a column, beam and wall junction which creates a series of visual framing devices and small spatial compartments

above figure 2.33
early concept sketch for the cabinets as two structurally isolated masses on piloti within the volume of the Aula Hall

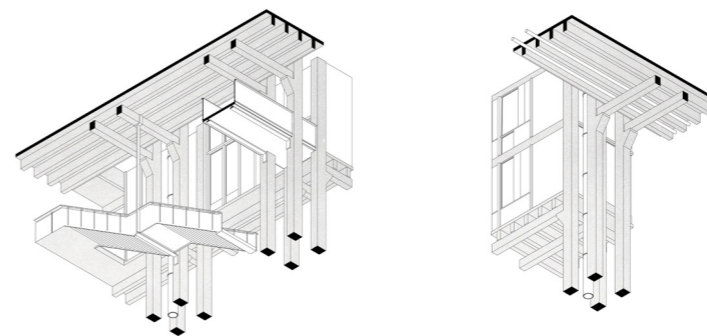
left figure 2.34
cabinet elevations. the cabinet internal facades are ordered by precast concrete pilasters which provide a unified ordering, within that framework the varied internal programmes dictate the disposition of apertures

2.4 Material Hierarchy

2.4.1 An Argument for Longevity

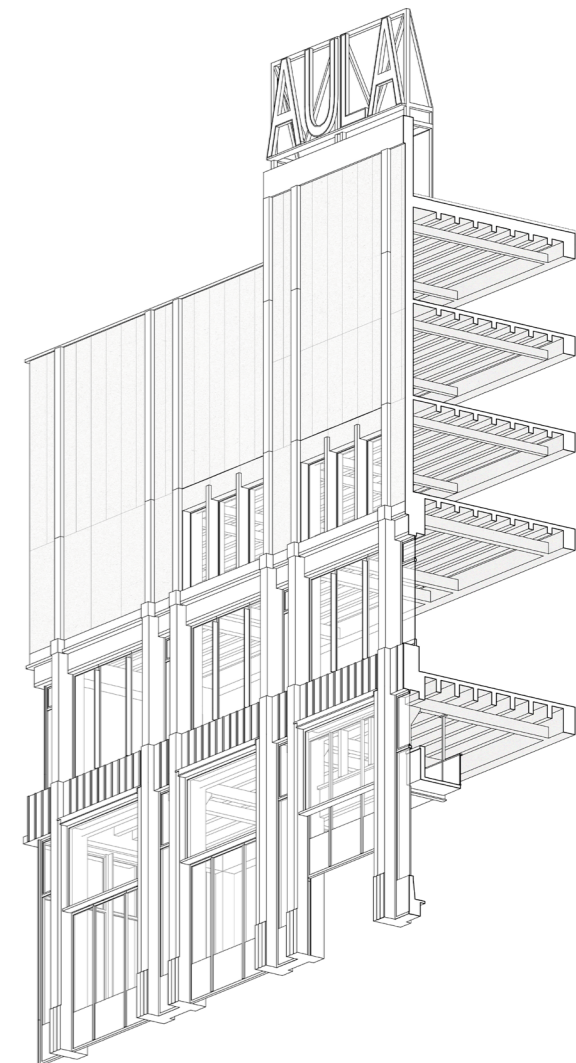
A hierarchic ordering is employed at all scales to distinguish primary, secondary and tertiary elements of the building. Externally this hierarchy is manifested in the classical ordering of the facade. A colossal order of precast concrete columns which taper into pilasters at attic level masters a minor order of inset pigmented green precast bays at ground level, at the upper levels the colossal order superimposes GRC precast panels which diminish in size towards the attic. Subtle reference is made to classical orders through abstracted projecting capitals at slab level.

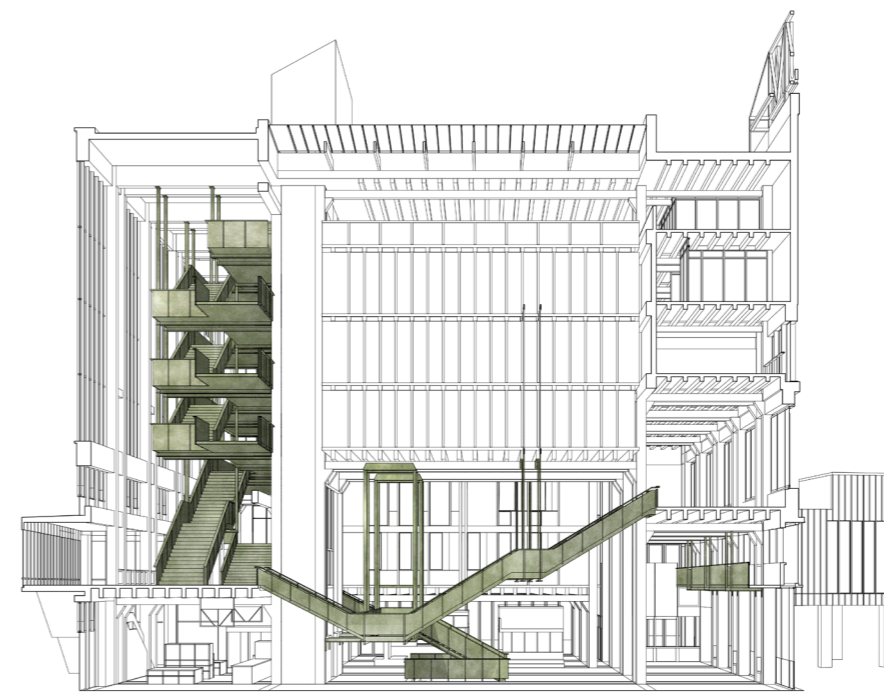
A similar hierarchy is prevalent internally, in the arrangement of lesenes between the breezeblock infill of the cabinets (see figure 2.32). These heavyweight masonry elements are intended to infer a semblance of longevity in counterpoint to more lightweight operable and transitory moments within. Internally, users can modify the architecture through a series of manually operable valchromat panels which open the cabinet interiors onto the wider interior of the Aula Hall - allowing the cultural programmes to participate in the wider public act.



above figure 2.35
isometric worm's eye views of the cabinets, with primary structure in grey and infill and suspended elements in white

above right figure 2.36
the classical ordering of the civic facade creates a visual and material hierarchy of pilasters, piers, panels and lintels



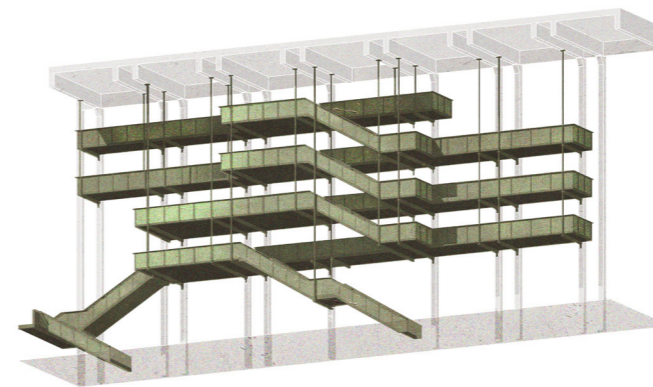
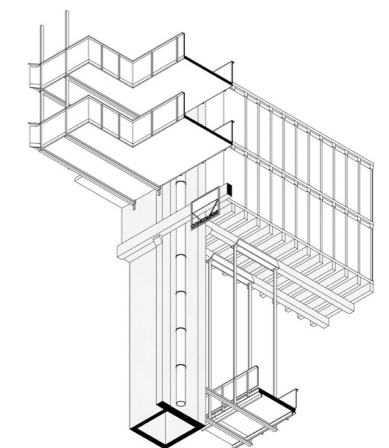


2.5 Elements - Cradles

2.5.1 Structures in Tension

Suspended like a marionette from overhead beams and restrained back to columns and core walls, the cradles are lightweight structures which free the ground plane from interruptions. Acting as stairs, walkways, and landings, the cradles - so called because of the quality of suspension - are the primary means of vertical circulation within the Aula. As conspicuous and central architectural elements within the Aula Hall and Concourse Hall, the cradles intensify the experience of movement within the Aula, aiming to invoke a performative aspect to circulation as a public display.

Structurally, the cradles have two main points of horizontal (outriggers) and vertical connections (cables) to resist lateral movement and support live loads. Long spans are broken along their length at regular intervals with movement joints and rubber absorbers to cancel resonant frequency footfall and cumulative vibration. Some swing is tolerated by the structure, which heightens the experience of collective movement on the cradles. The arrangement of landings is designed to establish the cradles as a site for more informal encounter between the main programmes which they connect.

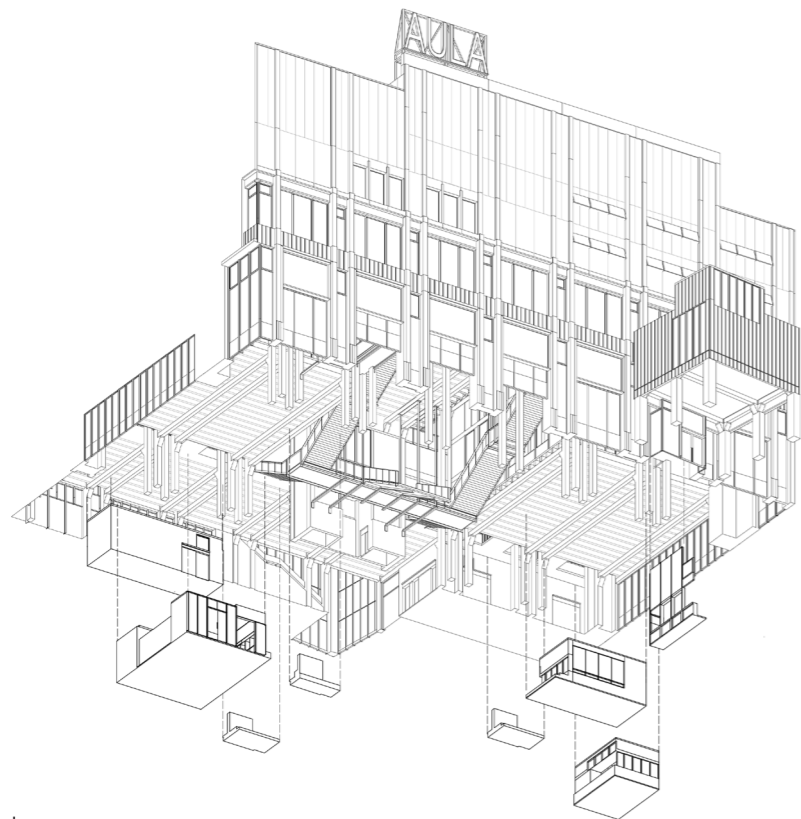


above figure 2.37
view of the concourse - the 'cradle', a suspended stair and walkway structure, occupies the main volume of the concourse hall. structures for circulation are distinguished by their green colouration

above figure 2.38
top Transverse section through main stair and across the width of the concourse cradle - showing suspended service block

above figure 2.39
right isometric worm's eye view showing suspension rods and outrigger restraints anchored into the lift core

above figure 2.40
left view of the cradle suspended from the frame of the concourse hall



2.6 Elements - Aedicules

2.6.1 Campus in Miniature

The Aula project applies urban design principles on an architectural scale, compressing the urban campus into an architectural campus in miniature. As set out in section 1.4 the project telescopes the spatiality and vitality of the campus into a condensed form - generating an internal urban topography. This is achieved through a series of smaller internal buildings, or aedicules. The aedicules dissolve the mass of the more informal and temporary programmes into smaller units which occupy and define programme-areas of the Aula Floor. Read as structurally independent buildings around more intimate pockets of space, the aedicules disrupt the monumentality of the interior in their diminutive object like quality. They step out at their bases to mimic stoops, banquettes and benches - devices typically found at the interface of the architectural and urban.

Whilst providing opportunities for seating and assembly, the aedicules contain programmes of transaction such as kiosks for independent traders, a canteen, bookshop, cafe and bar which liken the idea of the Aula Floor as a department store of distinct events, in addition to its civic purpose. Not only is the Aula Floor a place for transaction in a conventional sense, but additionally in the exchange of civic and commercial, the floor attains a sense of vitality from the range of activities distributed around the outside of the floor. The aedicules' contained form seeks to enclose their programmes so that the commercial programmes of the Aula are in balance with the cultural programme and the civic core of the project.

The distribution and containment of space in the Aula Hall is calibrated by the aedicules. These spaces become the de facto foyers to the main cultural programme housed overhead in the cabinets - thus these partial enclosures around a more polyvalent interior act as the mixing chamber for varied programmes and people within the Aula.



above left figure 2.41
Worm's eye view with aedicules extracted - showing the main spatial elements of the field of columns, aedicules, and articulated soffit

above figure 2.42, 2.43
the compressive space beneath the cabinets is enclosed by the aedicules. above: the canteen. below: independent retail and display kiosks

left figure 2.44
aula floor aedicule elevations - the compact form of each aedicule reads as a small building unit whose distribution within the Aula creates a miniature internal urbanism



2.7 Elements - Cabinets

2.7.1 Nested Interiors

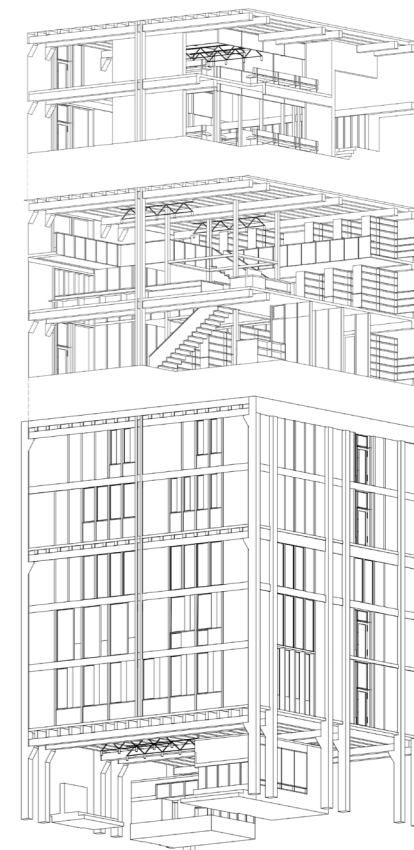
The cabinets, introduced in section 1.6, are two large vessels supported over the Aula Hall on a series of piers which contain a stack of cultural programmes. The cabinets are named after the layering of compartments within, each containing a distinct programme: from the Georgian Theatre, to the Citizen's Bureau, to the Picture Gallery, and the People's Hall. The stacking of cellular programmes within the towers provides a counterpoint to the indeterminacy of the spatial and programmatic organisation of the Aula Floor, as the cabinet interiors are comprised of highly specific and spatially contained programmes.

Each cabinet is accessed by the public from the Concourse Hall, or the City Commons. They are serviced from a suspended ancillary block, and each has a dedicated passenger lift and fire escape. In the absence of a dedicated foyer for each programme; the landings on the cradles, the Concourse and the Aula Floor become de facto foyers - and vitality is elicited from the mixing of people and programmes in the main volume of the Aula rather than the contained atmosphere of each programme compartment. Manually operable panels and apertures open onto the main hall to acoustically and visually augment the porosity of the cabinets (figure 2.47). These operable panels allow the internal activity of each programme to softly contribute to the activity of the main hall and vice versa, whilst giving building users control over their environment.

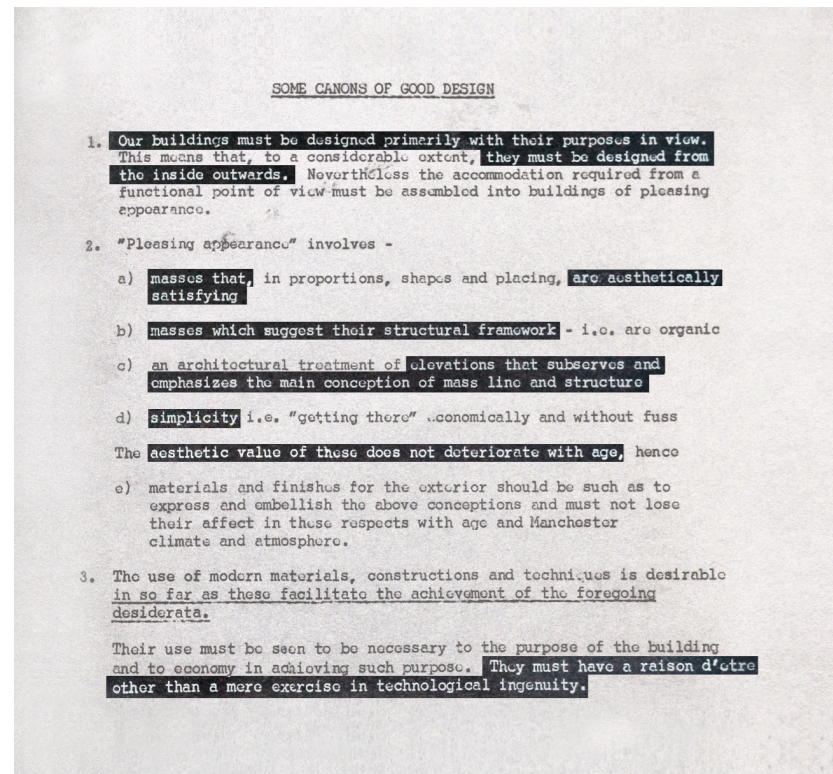


above top figure 2.45
view within the tower library - a tiered triple level public reading room is one of the Aula's primary cultural programmes

above right figure 2.46
cabinet exploded view - library and theatre compartments extracted from the cabinet



above left figure 2.47
library reading carrels overlook the Aula Hall with operable panels creating apertures between volumes



2.7 Canons of Good Design

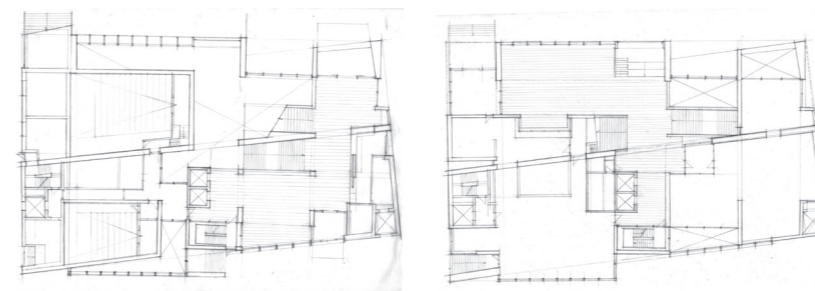
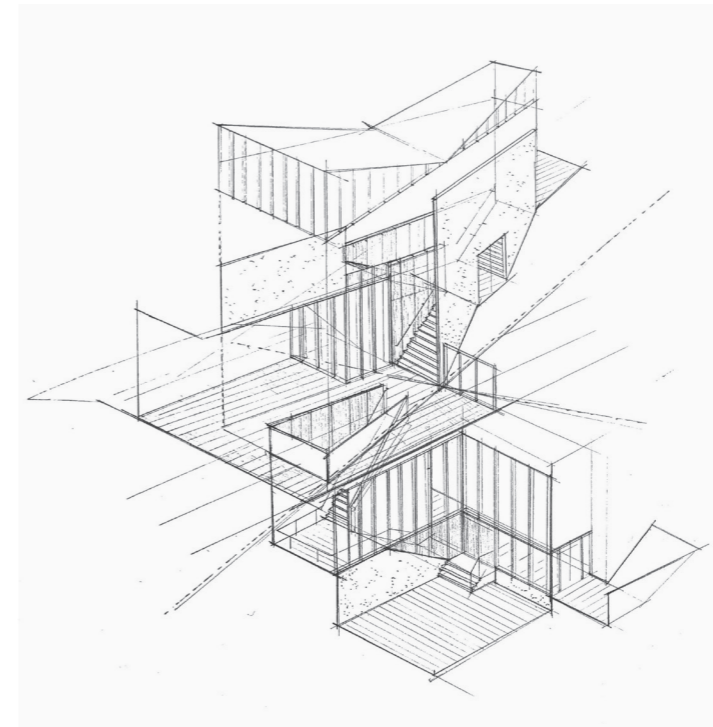
2.7.1 Design Principles 1957

The design principles set out above in 1957 prescribe a functionalist style synonymous with modernist architecture; emphasising structural expression, material economy, and rational ordering. These canons, were designed to cohere the UMIST Campus into an integral whole - a singular *gestalt*.

2.7.2 Design Principles 2021

These canons of design are true and judicious today. As once UMIST sought to break from the past, new criteria stipulate a tacit rupture from the existing condition whilst, counterintuitively, seeking to consolidate the fragmentary specificity of the Campus. In the project to rehabilitate the UMIST Campus for today's society the three canons of good design still apply and can be elaborated upon with 5 new specific criteria:

- 4.0 New interventions in the campus should be arranged as to intensify the existing grid ordering of the campus, and existing buildings (even unaligned buildings) should be retained to demonstrate (or intentionally counteract) this effect,
- 4.1 insofar as they do not impede the clarification of the underlying order of the urban organisation and spatial delineation of the campus quadrangles.
- 5.0 Existing buildings should be anchored in situ by a series of site specific 'continuity devices' across the campus which visually unite and signify building thresholds,
- 5.1 further, a series of 'boundary devices' should signify the threshold to the campus. The periphery of the campus should be remade to consolidate the campus condition.
- 5.2 The political dimension of the campus - its interface and relationship with the city - should be made to reinforce and heighten its unique identity.
- 6.0 New interventions should also be of a distinct tectonic language. They should express discontinuity - whilst conversely being contingent upon - the existing stock of buildings.
- 6.1 Formal autonomy should be balanced against site specificity so that new interventions both break with, but also reify, the existing condition,
- 6.2 insofar as the 'open form' of the campus *interior* is not compromised - that is inviolable
- 7.0 New interventions should be civic, and dispel the institutional qualities of the campus.
- 7.1 The ground plane should be designed to heighten the sense of publicness, and the campus as an arena of the urban.
- 8.0 On the aesthetics of new buildings, and in addition to the three original conditions, interventions should employ materials which enhance the abstract formality of the existing building stock,
- 8.1 planar, heavyweight masses should be counterposed with gridded, lightweight elements,
- 8.2 whilst inferring, through their treatment, a longevity by the coupling of material and form,
- 8.3 and working to an especially protracted building lifespan, so that the buildings may remain robust for centuries to come, and even retain their integrity in abandonment and ruin.



2.8 Superseded Scheme

2.8.1 Project for a Social Condenser

The drawings on this page illustrate a previous iteration in the Aula's early development. This iteration, which housed a similar programme, had a greater emphasis on the oblique angle cut across the site by the adjacent mill building - the last remnant of the site's industrial history. The diagonal of the mill, and the grid of the modernist campus, interfaced within the building to create a rift at the centre of the building, where an atrium was hollowed out and a processional stair ascended the oblique plane.

Whilst this scheme was successful in its compact aggregation of civic halls and programmes around a central social court, where landings substituted formal social spaces to encourage informal encounter, it failed to integrate meaningfully with the urban condition of the campus. The design of the condenser scheme reinforced the existing street line and did not plug into existing buildings as the current scheme does - as such it represented pre-industrial modes of cityscaping rather than the integrated modernist spatiality of the campus.

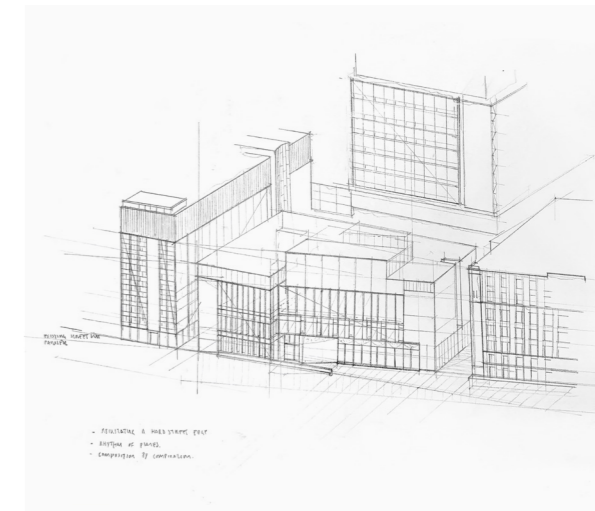
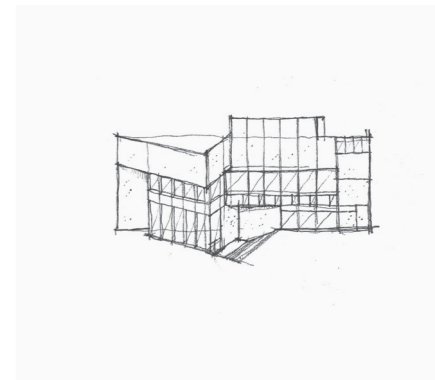
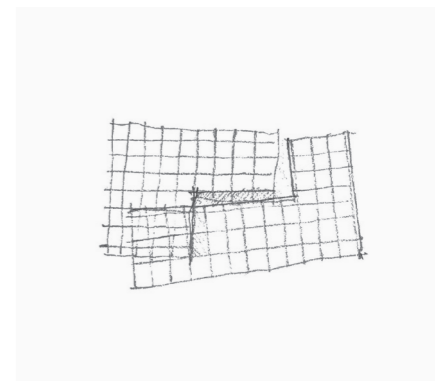
As consequence, the scheme was reworked to integrate with adjacent buildings; resulting in the concourse on the current scheme, to create a more open ground plane; resulting in the Aula Floor and Stoa, and finally respecting the modernist spatiality of the campus; by conceiving of architecture and urbanism holistically.

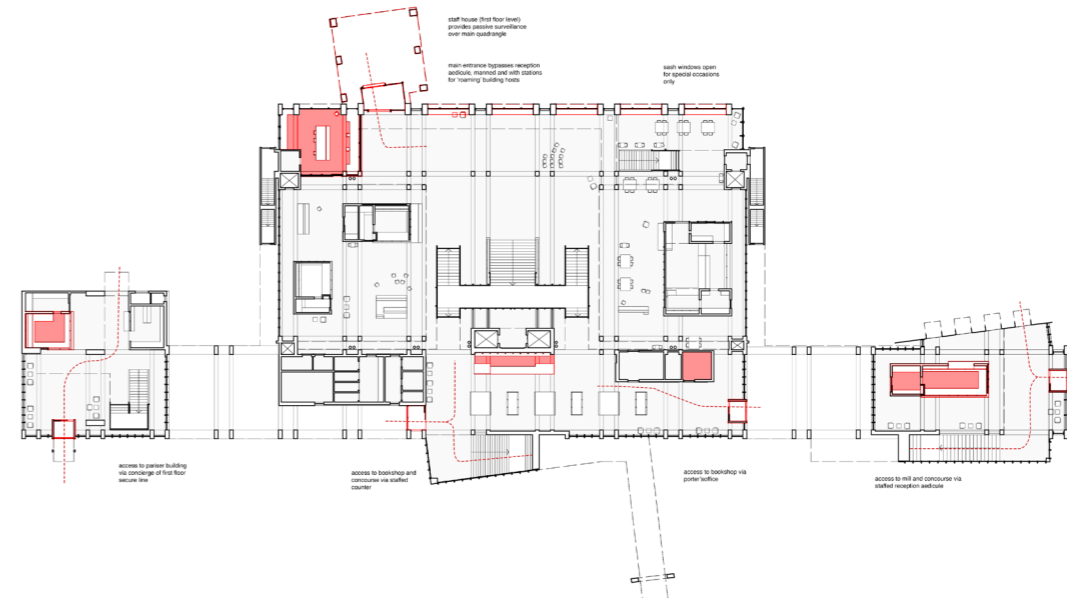
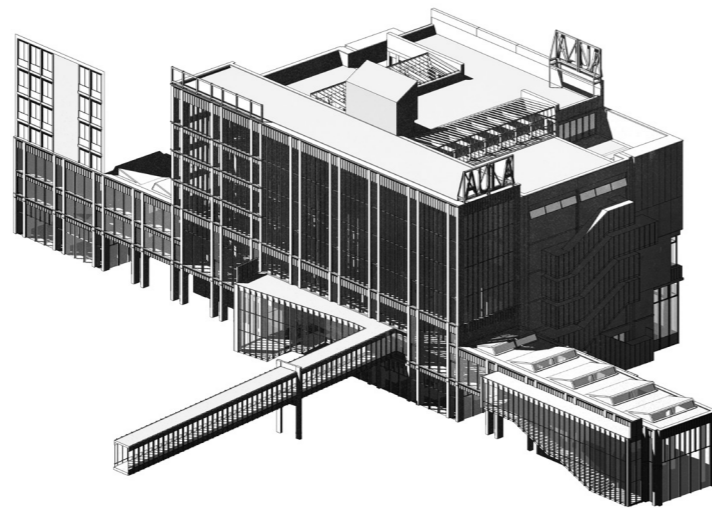
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figure 2.48
General guidelines and aesthetic considerations for the consortium of architects developing designs for individual buildings at the UMIST Campus. https://www.flickr.com/photos/seva_nmb/10807121746/in/album-72157625954083649/

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figure 2.49 - 2.54
various sketches from the condenser scheme development. From top left: dissected view of the processional stair, diagonal wall in relation to civic halls. plans showing diagonal plane wall intersection. view of external canted elevation. view of condenser in the context of the campus.





3.2 Access and Safety

3.2.1 Access, Servicing, and Emergency

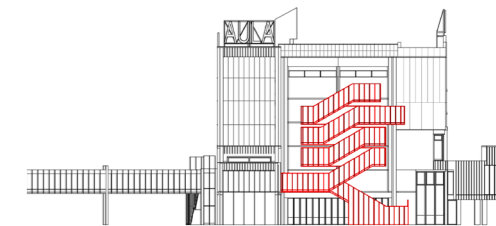
As a complex and integrated building, the Aula has multiple entrances across four floors with access from ground level in addition to access from adjoining buildings via bridge. Most building users arrive via the main entrance and bypass the reception aedicule, located to one side so not to deter potential visitors. More informal observation is provided around the building perimeter from staff stations and sales counters. As a polyvalent building operated by a single company, the Aula staff are trained on a rolling basis to serve in multiple capacities, including as roaming 'hosts' who manage building access from decentralised points in the building.

The campus is a pedestrian precinct, therefore the Aula is serviced from an underground street which is accessed from the back of house area in the basement. Building plant, toilets, cloakrooms, kitchens and staff lockers are located in the basement to minimise building services at ground level. The underground street runs parallel to the concourse, along the line of an existing street, which is re-landscaped as a linear parade.

In the event of an evacuation, emergency egress is via a number of internal stairs compliant with assembly buildings regulation or via two external enclosed fire escapes. The fire escapes are lobbied with a compartment for wheelchair refuge and exit clear of the building onto the main quadrangle assembly point. As the Aula and Concourse consist of large, open volumes smoke can be compartmentalised in enclosed zones by sealing fire curtains concealed within the ceiling soffit. Additionally the Aula has a wet riser and water suppression.

above **figure 3.02**
Entrance vestibules in relation to staff-managed stations (red) with route-tracked entrance points. comprehensive estate management ensures that staff can oversee multiple building entrances

below **figure 3.03**
emergency egress is provided by external fire escape enclosures on side elevations with lobbies and compartments for refuge. Fire escapes exit clear of the building onto the main quadrangle assembly point.



3_ technical information

3.1 Operation and Administration

3.1.1 Private and Public Interests

The Aula, as indicated in section 1.6.1, shall be operated as a subsidiary of the university, who currently maintain the freehold on the UMIST Campus. A new company operated by the university shall be established and located on the top floor of the Aula on dedicated office level. The Aula Company will be tasked with the administration, artistic curation, and cultural programme, ensuring a continuous events programme and acting as a permanent tenant to challenge the precepts of use of the building. Revenue collected from the continued freehold of the land shall finance the operation of the Aula, and subsidise the cultural programme for the public. It is proposed that the maintained institutional ownership of the campus is a satisfactory agreement for the provision of a privately-subsidised public cultural venue.

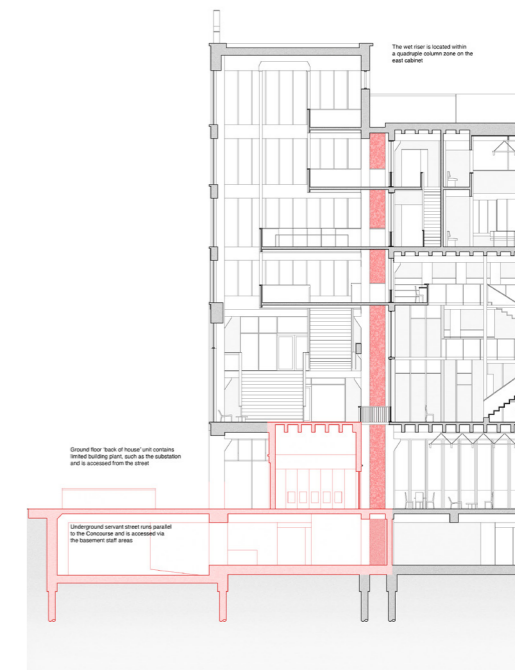
With the retention of the UMIST Campus as part of the university estate - a relationship which will be scrutinised in more detail in stage 2 of this project - the status of the campus as a public arena has to be managed to ensure the limitation of the powers of the university over the site and its inhabitants. Covenants will be in place to restrict the university's powers to police and dictate use of the precinct, and a charter will be established to reinforce urban values of freedom of speech, rights to congregation and demonstration etc, to reinforce the university's mission to be a place of agonism as much as a place of consensus. It is believed that only through ongoing comprehensive ownership and oversight of the campus can it be maintained in perpetuity. Attempts to atomise land ownership into smaller parcels will result in the piecemeal dissolution of the campus environment, therefore, if the university is to achieve its Third Mission of outward societal edification, its responsibility as custodian of the campus must be re-iterated and upheld.

above **figure 3.01**
View of the Concourse face of the Aula - the Concourse develops the idea of architecture as an infrastructure, by physically implanting into adjacent buildings across bridges.



above **figure 3.04**
vertical service runs are exposed in the inter-column clusters and between downstands in the soffit

right **figure 3.05**
partial building section through underground service street at basement level and enclosed riser



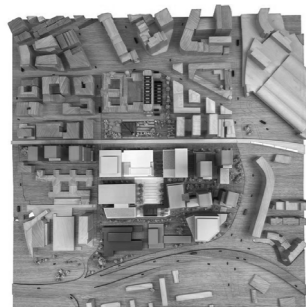
3.3 [Planning and Legal Obligations](#)

3.3.1 [Public Realm Delivery](#)

As freeholder of the UMIST Campus site, the university is not required to negotiate with other local landowners, as the Aula project is sufficiently insulated at the nucleus of the site. Negotiations should take place with the council to ensure covenants are put in place for the democratic governance of the site (section 3.1) and that there are measures in place to safeguard those covenants.

In lieu of section 106 planning obligations to improve local infrastructure, the university will commit to delivering, maintaining, and safeguarding the public realm of the campus and the provision and operation of the Aula, as a public venue, as their contribution to the city and society. The campus redevelopment should be initiated by the public realm works and these should complete prior to any receipt of revenue from the redevelopment of the existing campus buildings.

The university's responsibility as landlord should be extensively scrutinised by the council as part of this procedure, to ensure an equitable relationship with the parties involved and the future tenants of the campus. Planning conditions should not only be imposed on the development, but also upon the university's proposal to manage the site as a housing district as part of the second phase of this project, which should be established in an outline planning application at the time of the first (Aula) planning application to ensure a holistic proposal is put forward.



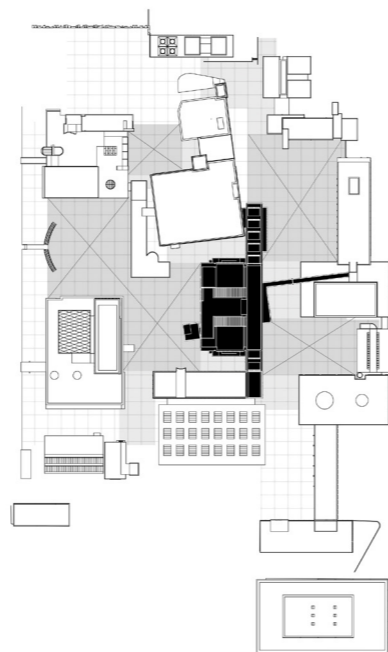
3.4 [Current Redevelopment Plans](#)

3.4.1 [Innovation District \(ID\)](#)

This outline application would supersede existing strategic documents which guide current development plans. Current high level SRFs are in place for the site in line with market-oriented redevelopment favouring large commercial buildings aimed at technology R&D sectors. Local SRFs which address the UMIST Campus redevelopment as an Innovation District are also subject to extensive urban renewal projects such as the Manchester Piccadilly SRF, which restructure a substantial city quarter in anticipation of HS2.

At the time of writing a preferred bidder has been selected to enter in a joint venture with the university, and an architect (Allies and Morrison) have been appointed to masterplan the site along the lines of the SRF strategic vision (prepared by Bennetts Associates). In light of concerns regarding the stability and nature of the office market given the ongoing pandemic, this proposal proposes an alternative form of development which would propose a mixed use restructuring of the existing campus as housing, culture and civic uses.

The joint proposal for the Aula and Campus would be developed in concert with the university (as client) and the council and would favour creative reuse of the campus as medium density housing, rather than commercial development. The position of the university does not fundamentally differ from the existing SRF, as they would retain the freehold on the land and enter into a joint venture to redevelop the site, whilst gaining an active role in the post-competition inhabitation of the Aula.



above [figure 3.06](#)
Campus site plan with the Aula (black) forming the nexus of the new microdistrict



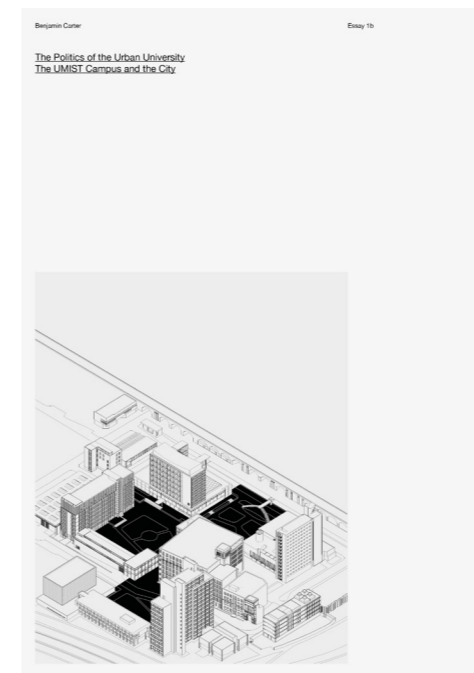
above [figure 3.07](#)
left [figure 3.07](#)
Model of the proposed Innovation District masterplan as of June 2021. source: Allies and Morrison

above [figure 3.08](#)
View of the proposed landscaping of the Innovation District as of June 2021. Under this plan only the Renold Building (centre) and the Mill would be retained. source: Allies and Morrison

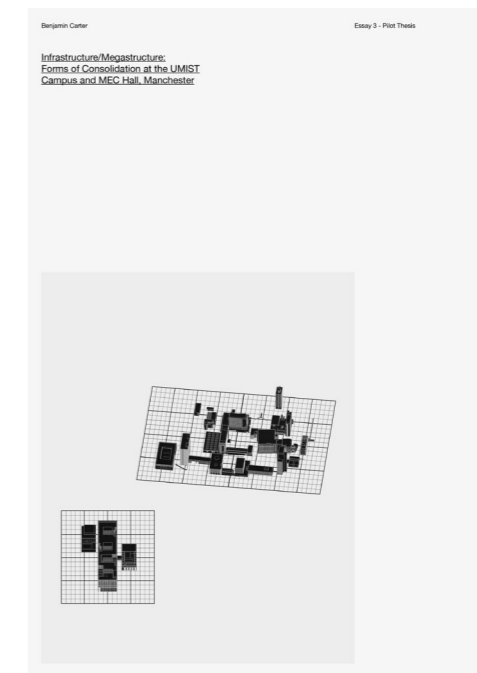
3.5 [Register of Research Outputs](#)

3.5.1 [Examining the Campus](#)

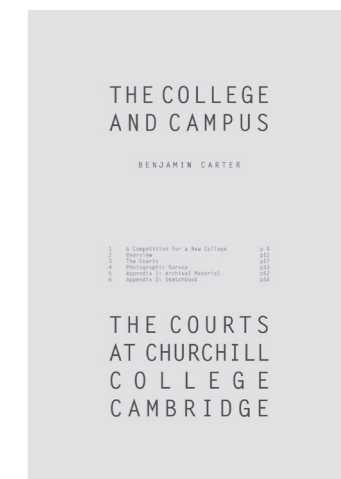
In concert with the Aula and Campus design proposal, this project involves a parallel research stream examining the UMIST Campus and its historic, spatial and institutional significance, in addition to novel campus typologies. Research conducted to date has examined: 1. The built environment of the UMIST Campus in relation to the city, a rare relationship for a post-war higher education institution. 2. The political act of university merger in the case of UMIST and Victoria University of Manchester and its consolidating effect on the campus environment. 3. Post-war exemplars of 'ideal' academic environments and the relationship of the student to the space of the university.



[figure 3.09](#)
The Politics of the Urban University
The UMIST Campus and the City



[figure 3.10](#)
Infrastructure/Megastructure
Forms of Consolidation at the UMIST
Campus and MEC Hall, Manchester



[figure 3.11](#)
The College and Campus
The Courts at Churchill College,
Cambridge

appendix [Technical Drawing Set](#)

Proposed architectural drawing set follows.

- 3.6 [L1000 Proposed Plans](#)
- 3.7 [L1100 Proposed Elevations](#)
- 3.8 [L1200 Proposed Sections](#)