Walls of resonance: institutional history and the buildings of the University of Manchester

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Why talk about walls? A wide range of research since the 1990s has focused on the material and spatial character of laboratories, museums, hospitals and other sites of science. Historians, geographers, ethnographers and others have traced how spatial arrangement and presentation have been influenced by, and have themselves influenced, the character of research, teaching, and communication with external audiences of various kinds.[1] This paper addresses specifically how these insights may be used to let buildings stand for ideas – how the history of an institution or a discipline (known, for the most part, from established documentary sources) may be articulated through its material fabric.

Over the past few years, I have led walking tours around the University of Manchester campus for a variety of audiences including undergraduate and graduate students, adult learners enrolled on the University's former Courses for the Public programme, and members of the public attending events advertised as part of the annual Manchester Science Festival. Related work, developed with my colleagues at the Centre for the History of Science, Technology and Medicine, includes site-based historical survey articles for resources such as the British Society for the History of Science Travel Guide.[2] The University has recently endorsed activity in this area through the appointment of Professor John Pickstone as advisor to the institution on its history and heritage. My chief aim, in what follows, is to record my

[1] Smith and Agar 1998; Galison and Thompson 1999; Yanni 1999; Gieryn 2002; Livingstone 2003; Fyfe and Lightman 2007.

[2] Online at [http://www.bshs.org.uk/travel-guide/].

own and my colleagues' experience in using buildings as a teaching aid, to communicate points about the history of science; but it must be noted that historians cannot expect to hold the monopoly on the approach: I go on to consider the popular appeal of associations between ideas and place, and the weaving of the phenomenon known as "scientific heritage", which involves considerable input from the inhabitants of the site.

Most of the work done so far has focused on the area around the 'old quadrangle' developed from 1870 as the second home of Owens College, founded 1851, which had outgrown its original home in central Manchester. Executed in stone-faced 'Collegiate Gothic' style by the architect Alfred Waterhouse, the new buildings lay on cheaper ground more than a mile south of the established city centre, along the west side of Oxford Road, a busy artery connecting the developing southern suburbs. They included new accommodation for Manchester's Medical School, formerly a separate institution, which had been subsumed into Owens in anticipation of the move; its early extensions included the Manchester Museum, built to house the principal natural-historical collections of the city. Here, the College became the University of Manchester in the early twentieth century, and continued to grow (figure 1).

Figure 1. The University campus north of Burlington Street in 1950, adapted from Charlton 1951. Dates refer to the buildings' inauguaration for use. The external fabric of the site today is little changed from this plan, although most buildings now have no connection to their original function (the main exceptions being the Museum, the ceremonial Whitworth Hall, and the Dental Hospital, now the Turner Dental School). Buildings demolished since 1950 are shown with striped outlines; the shaded areas mark the sites of the principal post-1950 additions. Not shown here are the arts and humanities and refectory buildings south of Burlington Street: this area has been more extensively redeveloped.

The expansion may crudely be divided into two stages, each involving some deliberate mapping of discipline areas to space.[3] The first, from around 1900, pushed through the side-streets west of Oxford Road: further westwards for chemistry and medicine; southwards for

[3] Of the sources cited below, Hartog 1900 is particularly detailed on the development of the various disciplinary groups, and their buildings, in the earliest years. Charlton 1951 contains useful (if imprecise) maps; Pullan 2000, 64-83 summarises the main features of the first post-1950 building wave.

the humanities; and northwards, across Coupland Street, for engineering, physics and the material sciences. The second shift, from the 1950s, was eastwards across Oxford Road itself, where a much larger area was cleared for buildings of ever greater size. By the end of the 1970s, most of the science departments, and the Medical School, had relocated on the east side.

Such hollowing-out is a widely observed feature of campus growth. Where the old buildings survive, they are typically converted to house activities considered to have less esoteric space needs. Often, humanities departments will expand into the space, as in the well-known case of the University of Cambridge, where laboratories built for physical chemistry and physics house the Department of History and Philosophy of Science and the Social and Political Sciences Library. At Manchester, the space has been filled largely by administrative offices. Residents of the original main building now include the Vice-Chancellor, the Teaching and Learning Support Office, and the Post Room; Student Services has a base in the chemistry range on the south side, Estates on the north. The old physical science and engineering buildings north of Coupland Street house further administrative offices, music and drama facilities, part of the School of Psychological Sciences (not requiring purpose-built laboratories), and extensions to the Manchester Museum and its stores.

Stewart Brand, whose *How Buildings Learn* presents an important plea for a historicised and, in the broadest sense, environmentally aware approach to architecture, points out that buildings are good resources for memory because they are obdurate: once built, they keep trying to exhibit the values designed into them, whatever the world around them wants. This is also, to their users, the key problem with buildings.[4] Sometimes, when they conflict particularly glaringly with present priorities, they are demolished; often, however, the response is either to tinker as far as possible with their fabric, or else to transfer their specialist functions to new buildings somewhere else, and rededicate the original buildings to activities which (supposedly) make no strong material demands. Each response tends to leave conspicuous traces which are often visually striking or enigmatic (the ornate façade hemmed in by taller constructions, or the staircase to nowhere); a mature built cluster has institutional

[4] Brand 1994, 2, and cf. Gieryn 2002, 2002.

history running right through it. This is particularly useful when dealing with general audiences, who, when dealing with document sources, are not always easily persuaded that the record they are used to seeing is heavily mediated and incomplete: the material built environment is incontestably so.

My tours have concentrated strongly on the exteriors of the buildings, for the most commonplace of practical reasons. Firstly, with few exceptions, the buildings are not intended for general public access: though many are accessible in practice, they are working environments whose staff would not welcome regular interruption. Secondly, many exteriors survive as originally constructed, whereas most interiors have been radically remodelled to accommodate changes of use and access. The stories of such redevelopment are interesting in their own right, but building a digestible historical narrative requires a careful balance between cases of constancy and change among the visual reference-points. Interior investigation of a remodelled site would be appropriate in telling the story of, for instance, a single laboratory or department; the outer walls are generally more revealing of connections and conflicts across the site, and of the institutional factors underlying them.

In most cases, it should be noted, there is no evident connection between the buildings' origins and their present use. When developing a guided route, it is seldom possible to read the story of a structure from its material form, in the manner of an industrial archaeologist; the task is usually to read *into* the structure a story obtained from documents or personal recollections. This is often far from straightforward, and I will attempt to give some sense of the challenges towards the end of this piece.

The invisible pub: presenting the past through present absence

Most versions of the tour begin by drawing attention to something that is not there. Across Oxford Road from the Manchester Museum, on the north corner of Oxford Road with Brunswick Street, lies a grassed area, banked up a little above the level of the pavement and largely featureless. Here, from the early days of Owens, stood a public house, the College Hotel, familiarly known as the "College Arms" (figure 2). Though it was popular with students and townspeople, the pub is chiefly recalled as the unofficial office ("Committee

Room X") of many University staff, and in its later years was faced in stone to approximate the Waterhouse range opposing it.[5] When the University began seriously to push eastwards from the mid-1950s, it survived for a time: the new building which filled most of this corner – named to commemorate the natural historian, William Crawford Williamson (1851-1892), but housing various scientific specialisms – was erected behind it, keeping its distance from the busy Oxford Road. From the mid-1960s, however, the University turned its attention to the proposed "Manchester Education Precinct," a hugely ambitious scheme for an integrated network of academic and residential complexes, linked by pedestrian walkways crisscrossing Oxford Road for more than a mile. This vision emphasised space, light and height, clean modernist lines, and, above all, zoned precinct planning, with a new "shopping centre" area, including a pub of its own, specified further to the north.[6] Accordingly, in 1973, the College Arms was demolished and the site landscaped, with no plans for further development.

Figure 2: the College Arms in 1970 and 2012. The Williamson Building is scaffolded for renovation.

The pub still offers a form of hospitality, however, as both a physical and a historiographic vantage-point. Most practically, it's easy to marshal and speak audibly to a large guided group (perhaps twenty or thirty people) from the raised grass verge of the empty site. Unimpeded views mean that the audience can immediately begin to get its chronological bearings, contrasting the showpiece Waterhouse range on the far side of the road with the Williamson Building and similar brick barns on the near side. Here is a useful hook to discuss what exactly it was that changed in the scale and status of science, and in the public function of a university, across the middle years of the twentieth century. Earlier growth had depended largely on the benefactions of local textile and engineering magnates: the grandeur of the Waterhouse buildings, and the prominence of the Museum, were an important signal of

[5] Pullan 2000, 65; Pullan 2004, 18. Photographs of the pub may be found as images m49426 (from 1958) and m49427 (1970) in the Manchester City Council Local Image Collection, online at [http://images.manchester.gov.uk/].

[6] Wilson and Womersley 1964, 20-21.

Owens's credibility and connection to its home city. Postwar expansion, by contrast, assumed permanently elevated levels of central government support – hence the new buildings' retreat from Oxford Road, and also their relative banality. The older buildings could continue to work their magic, insofar as it was needed, but in the newer realm there was no perceived need, in the strictly literal sense, to put up a good front.

More specifically, resurrecting the College Arms provides an accessible and memorable way to historicise the site. Sometimes, I set the tone by insisting the pub is still there, politely rebuking any followers who happen to trespass through solid walls. It is interesting that participants tend immediately to see the point of this artifice. Painfully stringent adherence to past actors' categories is often blamed for professional historians of science's failure to engage a wider public in print, and yet general audiences are often happy to 'play the stranger' at the material level. The wider message is that every single step in the University's development came at the expense of a settled urban environment (figure 3).

Figure 3: the University surrounded by the streets of Chorlton-on-Medlock, circa 1925.

The unusual constraints of the site had always been evident. "We see houses and chimneys on every side", commented Thomas Huxley at the laying of the foundation-stone in 1870, "and I don't exactly see in what direction 50 years hence, when you may find that even this accommodation is wholly inadequate, you mean to extend."[7] The question was pressing within ten years, and remained so for most of a century; its answers, even before the Education Precinct scheme got underway, largely erased the surrounding township of Chorlton-on-Medlock. Most of the principal roadlines remain, making general orientation straightforward, but very few buildings of any description survive.[8] Challenged to spot an exception, however, the invisible pubgoers will quickly do so: Waterloo Place, an 1832

[7] "The foundation stone laying of Owens College", *Manchester Guardian*, 24 September 1870.

[8] Although there was, for a time, a systematic programme to photograph each street before demolition. Many views, particularly of prewar losses from the west side of Oxford Road, may be accessed via the Local Image Collection.

terrace of seven houses, is a distinctive red-brick presence on the west side of Oxford Road, just north of the Waterhouse range. Grade II-listed, it has been converted for University offices without significant external modification, an approach more widely followed at other civic universities.

Such survivals may give an inkling of the original character of the area; but it is as well to forewarn the audience of the limitations of the approach. It is hardly possible to do justice to the question of *what it was like* to work in or around the University in former times, amid sights, sounds, smells, and status signals we can never recapture. From primary and first-hand evidence, it is possible to sketch a portrait such as the one offered by Andrew Hodges in his biography of Alan Turing, who arrived at the end of 1948:

> Certainly the physical setting of the University was grim. Its late Victorian gothic buildings, black with soot from the first industrial revolution [*sic*], faced across the tram-tracks of Oxford Road on to the Temperance Society and expanses of slumland, whose holes and shored-up corners marked where the bombers had got through.[9]

Such characterisation runs the risk of cliché, but it is important to affirm that the setting was neither quiet nor clean by latter-day urban standards. We see the earliest buildings in literally sanitised form since their sandblasting in the early 1970s; restoring their external appearance to something like its initial state, ironically, has made it harder to perceive them as they have been seen by most of those who have interacted with them. The full Waterhouse range, as viewed from the grass, is now a prospectus photographer's dream: from certain angles, the height of the verge conceals the intervening Oxford Road entirely. This vista never existed before the postwar clearances. It falls to the guide's narration, therefore, to steer the audience away from visions of an academic enclave marooned within industrial Manchester, pointing out that the University, with its chemical and engineering specialisms, was a response to the city and a part of it. A more visual, if inconvenient approach is to distribute handouts of period images, such as the 1920s aerial photograph (Figure 3), in which the Lowryesque chimneys belong mostly to the campus itself.

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[9] Hodges 1983, 394.

Finally, the College Arms provides a neat illustration of how cryptic elements of the built environment can sometimes be deciphered using documentary evidence. The pub is not entirely invisible. Set into the grass verge is a thick stone plaque, carved with the image of a rising phoenix. This, as may easily be established from archive photographs, was originally a feature of the pub's exterior wall: the pub was once held by the Phoenix Brewery of Heywood, whose estate was acquired by the Cornbrook Brewery in 1939. Rescued by students in collaboration with a willing Estates department, the plaque was set in place as a permanent memorial to a long-term fixture of University life. For many years, it lay disguised by shrubbery; since this was cleared in 2007, it has stood in plain view, yet remains largely unnoticed.[10] Such 'hidden history' has an immediate appeal for most of our audiences, who are likely to be familiar with the site as visitors or users, and serves as a useful vehicle to highlight unfamiliar aspects of its development.

The challenges and opportunities of this site obviously contrast strongly with those presented by substantially conserved and more conventionally heritage-friendly localities. Mention of a 'scientific pub' is likely to stir thoughts of the Eagle in Cambridge, a stone's throw from the original ("Old") Cavendish Laboratory. While 'literary pubs' abound, the Eagle is perhaps the only extant hostelry with a more than local scientific reputation, noted in general-interest guidebooks. Its particular fame can be traced to a single act of memorialisation by James B Watson, who, with Francis Crick, elucidated the DNA structure in 1953: Watson's bestselling 1968 memoir, *The Double Helix*, narrates dramatically how Crick, overriding Watson's caution, "winged into the Eagle to tell everyone within hearing distance that we had found the secret of life."[11] The site's resonances, however, come less from this standard Eureka narrative than from the depiction of the pub as an uncommonly sociable scientific annexe, where important minds met to think and drink: its survival allows the visitor to do likewise. In Manchester, the very growth of scientific activity resulted in the erasure of the most obviously analogous site. (A version of the tour run as a student induction event has

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[10] Wainwright 1996, 40; *Est8 Update* (University of Manchester Directorate of Estates newsletter), Winter 2007, 6.

[11] Watson [1968] 2001, 197.

occasionally been introduced as a "pub crawl with a difference", with the hint that the difference may not be to the drinker's advantage.)

Labs in motion: material markers of organisational change

Alfred Waterhouse, in the words of Sophie Forgan, was an architect "unusually prepared to listen to his scientific clients," and the earliest buildings of the refounded Owens College strongly reflect its contemporary scientific orientation.[12] From uncertain beginnings, the College had flourished through careful appeals to both the needs and the aspirations of local manufacturers and the wider civic community. Its principal administrators, the chemist Henry Roscoe and the linguist A W Ward, favoured the integration of research into teaching on the German model, and quickly revealed the ambition to establish it as an independently chartered university.[13] Owens was careful to offer courses of practical relevance, yet refused the identity of a technical college, claiming a broader educational ethos capable of breeding a class of liberal professional gentlemen. Yet if sustained lobbying of the civic elite made the grand new buildings possible, what made them necessary was the success of Roscoe's chemistry classes, which had been constantly overcrowded on the former site.

The first of the new buildings, in operation from 1873-4, strongly reflect the pre-eminence of chemistry. While the majority of the College's early activities took place in the long "Main Building," there were two similarly ornate buildings at the rear. One, standing alone, housed the newly assimilated Medical School; the other, connected to the Main Building, supplemented its chemical facilities (including the College's largest lecture theatre) with a suite of teaching laboratories sufficient to house over a hundred students. These facilities were erected to Roscoe's personal specifications. Though often supportive of colleagues whose research priorities were not his own, Roscoe maintained the site as a fiefdom, patrolling the laboratories after the fashion of his mentor, Robert Bunsen of Heidelberg. The subtleties of this relationship are not evident from the exterior, but the form of the

[12] Forgan 1999, 183.

[13] Roscoe 1906, 177.

laboratories can be pointed out through their windows, and the proportion of the old site devoted to chemistry is easily demonstrated.[14]

The front quadrangle built out from the Main Building, designed in part by Alfred Waterhouse's son Paul, offers an immediate lesson in how an early civic university might grow. One side consists of the Beyer Laboratories, named in honour of Charles Frederic Beyer (1813-1876) of the Beyer-Peacock locomotive engineering firm, whose bequest to Owens topped £100 000. The adjacent side includes the Whitworth Hall, after Sir Joseph Whitworth (1803-1887), precision engineer, armaments baron and philanthropist. The quadrangle is completed by the Christie Library (now Christie's Bistro), after Richard Copley Christie (1830-1901), a lawyer who served on the Owens faculty as a historian and political economist, and was one of Whitworth's principal legatees. The concentration helps to demonstrate that growth was not a simple consequence of demand, but depended absolutely on the support (often posthumous) of such sponsors.

In a rare case of the available walking path conveniently reflecting the chronology of development, we can lead visitors out of the quadrangle and along the Burlington Street chemical extensions. Here, clearly distinct in style from its neighbours, stands the Schunck Building (figure 4). Edward Schunck (1820-1903) was the Manchester-born, Giessen-trained son of a German textile merchant and manufacturer. A leading light in Manchester's Literary and Philosophical Society, he was closely connected with the founding organisers of Owens College. As an independently wealthy scientific devotee, however, Schunck had no need of the facilities a proto-university might offer. After inheriting the bulk of the family fortune, he built a superb private laboratory at his home on Kersal Moor, together with an extensive library of chemical literature. Having transferred around £20 000 in life, Schunck bequeathed the laboratory and library to Owens. The remarkable point is that the bequest was taken literally: the entire physical laboratory was dismantled, transplanted the five miles to Burlington Street, and reconstructed.[15] This literal, bricks-and-mortar instance of the move in

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[14] Kargon 1977, 178; Charlton 1951, 65-68.

[15] The exact details are hard to retrieve: although contemporary accounts suggest a faithful brick-by-brick reconstruction, one architectural study points out that the brick of the building matches its neighbours, implying

laboratory research away from gentlemanly private spaces, and towards large institutions staffed by professionals, is an unusually neat example of how an important but potentially rather dry conceptual point can be made more accessible through its physical consequences.

Figure 4: recent photograph of the Schunck Building from Burlington Street. Comparison with early photographs shows that the building's exterior has barely changed during its time here.

This story may be continued with reference to Arthur Schuster (1851-1934), the German-born Professor of Physics whose administrative leadership was instrumental in the transition from College to University.[16] Personally rich from his family's textile interests, Schuster combined the roles of philanthropist and professional. His chief material legacy is the physics laboratory erected on the north side of Coupland Street in 1900. A literal redbrick construction, marking a deliberate departure from Collegiate Gothic, it is no less of a showpiece: on construction, it was the fourth-largest physics laboratory in the world. Though chemistry remained strong at Manchester, Schuster ensured that the University's reputation would gravitate more towards his chosen field: on resigning his chair in 1907, he ensured the succession of the ambitious Ernest Rutherford, who established the laboratory as an international focus for the study of atomic physics.

As these cases demonstrate, the exteriors of a site of science lend themselves chiefly to articulating organisational, economic and public-status facets of the broader narrative ("external history," if you must). There are usually few markers of the conceptual content of the science itself. Thomas Gieryn reports some success in tracing from doors and entranceways the nature of the constituencies that used them, but his approach depends on being able to follow the user into the building.[17] Sometimes, however, exteriors can be used to tell stories about how scientific disciplines evolve and set boundaries. Though Henry

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that this was really a partially new construction to the same plan. See "Opening of the Schunck Laboratory", *Manchester Guardian*, 2 July, 1904; Hartwell 2002, 113-114.

[16] Charlton 1951, 84-85.

[17] Gieryn 1999, 431.

Roscoe was primarily an inorganic chemist, he acknowledged the value to Manchester of investing heavily in organic chemistry on the German pattern, with its numberless industrial applications. The reorientation can be traced in the growth, at the western end of the Burlington Street range, of what eventually became a small courtyard surrounded by organic labs on all sides. Similarly, Schuster's 1900 building adjoins the John Hopkinson Laboratories, originally devoted to electrical engineering and electrochemistry: the two facilities were developed in parallel to affirm Schuster's vision of an integrated culture spanning industrial testing, teaching and research.[18]

Some versions of the tour also address the Manchester Museum, the subject of a recent monograph by Sam Alberti which pays close attention to the strategic use of space.[19] The exteriors of the site provide a fertile opportunity to introduce general audiences, who typically understand a museum as self-evidently a public display venue, to the nineteenth-century importance of museum collections and practices for scientific teaching and research.[20] The Manchester Museum was planned from the outset as both a public gallery and as the College's core collection for botanical, zoological and geological research. An internal door allowed unrestricted access to College users of the collections from the Beyer Laboratories, whereas a separate entrance opened to Oxford Road during public opening hours (figure 5).[21] This aspect can be demonstrated most strikingly by bringing the audience around from the Oxford Road frontage to the interior of the main quadrangle, where the Beyer and Museum ranges meet at a right-angle (figure 6). Conveniently, though the

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[18] "New Physical Laboratory", *Manchester Guardian*, 30 June 1900.

[19] Alberti 2009.

[20] Pickstone 1994; Forgan 1994; Pickstone 2000. Macdonald 1998, 5-17, gives a useful overview of the changing character of the museum more broadly. Arguably the most sustained exercise in planning a site for science with a museum space at its focal point is the Oxford University Museum of the 1850s, for which see Yanni 1999, 62-90.

[21] Forgan 1994, 146-147 puts this arrangement in the context of similar link passages, both ostentatiously public and literally subterranean, at institutions in London and Edinburgh.

windows are partly obscured, the Museum's domain is signalled by the unmissable presence of large skeleton specimens within.

Figure 5. Owens College in 1890. The central corridor of the Beyer wing (right-hand side of the quadrangle) runs through to the mineralogy area of the Museum, providing a private entrance for the College; the public, at this time, entered via the "carriage archway" at bottom centre.

Figure 6. Inner angle of the junction between the Beyer Laboratories range (left) and the original Manchester Museum (right), showing the common design.

Alberti's study concludes with an analysis of the Museum's dual role as an element of the University and a municipal amenity for Manchester.[22] The Museum's civic self-positioning can be traced in its repeated expansions along the busy and public Oxford Road, and in particular in Michael Waterhouse's extension of 1927, the last and northernmost of the additions designed by members of the Waterhouse family. Its defining element was a massive, ornate new entranceway (now a display window) at the north end, well away from the archway which Museum visitors had formerly shared with those entering the quadrangle on University business.[23] As the research connections materialised in the Beyer link faded, the Museum's activities were increasingly, in Alberti's words, cast "adrift from the University." At the same time, however, continuing expansion has brought the Museum increasingly into the physical space of former University research facilities. One proposed initiative towards greater reintegration is a proposed gallery on the history of the University; another seeks to historicise the site through public signage, guiding, and smartphone delivery. The appeal of this approach is heightened by the fact that a further extension of 2003 again relocated the main entrance, this time to the north side of Coupland Street, thus bringing all visitors into immediate proximity with the University's most resonant exteriors.

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[22] Alberti 2009, 164-173.

[23] Alberti 2009, 44.

The Street of Science: glory, mundanity, notoriety

In proposing the working title of "the Street of Science" to describe this initiative, John Pickstone invokes the fact that almost all the Manchester researchers who have become accepted as globally important contributors to science worked (albeit in different periods) in extremely close geographical proximity, on one side or the other of Coupland Street. If the professional historian's priority is to ensure that the presentation goes beyond the isolated coverage of names, dates and achievements to express broader points about scientific institutions and their research cultures, then there are clear opportunities here: the spatial concentration of famous names and famous results is obviously not happenstance, but derives from the programmatic research concentrations of the past.

Coupland Street's gravitas undoubtedly derives significantly from the prominence of the 1900 laboratory endowed by Schuster and made world-famous by Rutherford. It was here, in 1911, that Rutherford provided the basis for one of the most prevalent of physics-textbook legends, proposing the nuclear model of the atom to account for alpha-particle scattering results achieved by Hans Geiger (who prototyped his eponymous radiation counter here), and Ernest Marsden. Here, too, in 1917, Rutherford demonstrated the artificial disintegration of nitrogen, the most prominent of the several discoveries known journalistically as "splitting the atom"; and the department in his time hosted members of the physics pantheon including Niels Bohr, James Chadwick and Henry Moseley.

Equally inevitable in any articulation of the site's significance is Alan Turing, whose international reputation has grown tremendously in recent years. Turing's work on the potential applications of computer technology here, during the last six years of his life, included the iconic "Turing test" definition of artificial intelligence. Manchester's fundamental contribution to computing is also memorialised nationally, and increasingly internationally, through the projects headed by the engineers F C Williams and Tom Kilburn: a prototype assembly of 1948 provided the first practical demonstration of the stored-program architecture, now almost general in computer design, and a 1951 elaboration in collaboration with the engineering firm Ferranti was – just about – the first commercial computer in the world.

Beyond these almost invariable core elements, the articulation of the story depends on the nature of the audience and the aims of the presentation. Coupland Street also witnessed the best-known work of the engineer Osborne Reynolds, responsible for the Reynolds number in fluid mechanics; Grafton Elliot Smith, anatomist and proponent of the Egyptian origins of human civilisation; and the botanist Kathleen Drew-Baker, whose contributions to stabilising edible seaweed production made her a scientific heroine in Japan. Perhaps more revealing of the University's history, however, are two figures who went on to achieve global stature in fields far removed from the core of their Manchester work. The birth-control pioneer Marie Stopes was a palaeobotanist at the University, becoming its first female member of teaching staff in 1904, and in 1905 the youngest holder of the DSc – male or female – in Britain, while the philosopher Ludwig Wittgenstein was an aeronautical engineer from 1908, spending much of his time at a research station on the moors above Glossop.

What do we gain by narrating these stories on the site of the work? Beyond the opportunities to map institutional and disciplinary developments onto material structures, as discussed above, there is something intrinsically attractive about the appeal to *genius loci*. Cambridge, again, offers a useful comparator in the former Cavendish Laboratory, active as a centre for physics and related fields for a century from the 1870s. The basic form of the appeal is crystallised in the narration of an audio guide commissioned for the University of Cambridge in 2009:

> Although it may not look particularly impressive, this building can justly claim to be one of the greatest scientific sites in the world. It has witnessed the invention of many ground-breaking scientific tools and ideas, and nurtured the careers of numerous great physicists, including several Nobel laureates.[24]

So far as courting popular interest goes, it is not necessarily a problem that the buildings may reflect little or nothing about the discoveries made inside them. On the contrary, there is a romantic appeal in the idea of magic erupting from dull surroundings (to the extent that the

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[24] "Old Cavendish Laboratory" in Stride Design, *Buildings, Lives and Legacies: a Celebration of Cambridge University*, 2009. Online at [http://www.strideguides.com/CU/Place.aspx?p=19&ix=83&pid=4&prcid=27&ppid=902].

drabness may be emphasised for rhetorical effect: the stone-faced frontage and elaborate gateway of the Old Cavendish, though conservatively designed for their time, are hardly unimpressive). Indeed, it is easy to see a causal link between the scruffy environment and the dazzling idea: perhaps the thinkers and doers did not bother to prettify their surroundings, because they were too busy thinking and doing. Stewart Brand terms this "taking the Low Road": a paradoxical glamour accrues to cheap, down-at-heel or utilitarian spaces when occupants, unconstrained by niceties, take the opportunity to innovate frantically. Brand's central case is Massachusetts Institute of Technology's Building 20, an enormous but entirely timber-built edifice, improvised as a temporary home for radar projects in 1943, and finally demolished in 1998 amid a welter of nostalgic memorialisation. Drawing on the urban theorist Jane Jacobs, Brand asserts the superiority of such organically developed working spaces ("If you want to bore a hole in the floor to get a little extra vertical space, you do it. You don't ask.") to showpiece products of top-down planning, doomed by the pressure of innovation to swift and costly obsolescence.[25]

Given its legacy as the totemic shock city of industrial change, it was inevitable that some version of this positioning should be applied to Manchester, whatever the physical reality. Anthony Sampson's *Anatomy of Britain* of 1962, highlighting the diversity of the so-called redbrick universities, deemed Manchester's "one of the bleakest"; and yet, he pointed out, its "blackened" buildings had spawned "three Nobel Prize winners in a row" (Rutherford, Lawrence Bragg and Patrick Blackett, successive holders of the Langworthy physics chair) and, crucially, a pre-eminent humanities scholar in the historian Lewis Namier; several more picturesque institutions, in contrast, were "Academic Siberia."[26] In fact, the Rutherford experiments – which mostly took place in Schuster's handsomely appointed 1900 building, rather than its plainer extensions – do not quite fit the part. The 1940s computer work, however, was cast firmly in this mould at the time of its first significant memorialisation.

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[25] Brand 1994, 24-33. For the memorialisation of Building 20, see *RLE Undercurrents* 9, issue 2, Fall 1997, online at [http://www.rle.mit.edu/media/undercurrents/Vol9_2_Spring97.pdf]; MIT Libraries, "Quotes and stories about Building 20", 1998, online at [libraries.mit.edu/archives/mithistory/building20/quotes.html].

[26] Sampson 1962, 207.

In a tongue-in-cheek presentation prepared for a colloquium marking the 25th anniversary of stored-program computing, F C Williams was at pains to highlight the contrast between the grand-sounding "Royal Society Computer Laboratory" of official documentation and the physical reality: a bare space in the undistinguished 1912 extension facing Bridge Street, whose door still proclaimed its former status as the "Magnetism Room." Temporary expansion into the room above meant that that the revolutionary data-transfer process incorporated, for a time, an element of "running to the bottom of the stairs and shouting"; the architectural milieu was "late lavatorial", a phrase seized upon gleefully by subsequent authors.[27] This was perhaps stretching a point: the interior walls of glazed brick, favoured by Schuster as "easily kept clean", had been one of the special refinements of the original laboratories.[28] The project's accommodation was, nonetheless, confined and makeshift, as was often the case even for high-priority innovations in the Britain of 1948. The size of the room, and some sense of its setting, may be demonstrated from the outside (figure 7).

Figure 7. The back of the 1912 Physics extension, seen from Bridgeford Street. Plaques below and to the left of the two "Magnetism Room" windows commemorate the construction of the 1948 stored-program computer.

Without succumbing to the clichés of the Industrial Dismal, then, we should recognise that an appropriate memorialisation of Coupland Street must in some ways differ from Brand's Low Road, whose focus on the "shabby and spacious" reflects its US origination: in Britain, and above all on the most hemmed-in of urban campuses, shabbiness was much more readily procured than space. Again, caution is necessary, because work often spilled over into equally makeshift but more spatially dispersed facilities, now erased. Sheds, like technicians, fade from the historical record (although one conspicuously "temporary" block, the single-storey Dixon chemical laboratory of 1946, survives to illustrate the point). Typically, however, from the first relocation of Owens to the early postwar period, space-saving and

[27] Williams 1975, and, for instance, Lavington 1975, 20; Hodges 1983, 391.

[28] Arthur Schuster, "The new physical laboratory," *Manchester Guardian*, 29 June 1900.

spatial reuse was a virtue. It was precisely for this reason that the Street of Science achieved its present depth of memory, and can be quickly and conveniently surveyed.

Building on what is already popularly known, however, has its challenges. One site of tension is the 1900 laboratory, where Rutherford and colleagues experimented using a wide range of radioactive materials from 1907 on. In 2001, members of the Psychology Department, then inhabiting the building, were alarmed to discover a declared radiation hazard zone in a staff office during renovation work; in 2007, these concerns collided with the identification of a possible cluster of cancer cases among the building's users, which was eventually posited as encompassing up to six deaths since 1992.[29] Significant negative coverage ensued in the national press.[30] The University responded by commissioning an independent report from David Coggon of the University of Southampton, an eminent occupational epidemiologist. Though further investigations raised the additional spectre of mercury contamination, Coggon's judgment was clear-cut: "On current evidence, none of the identified contaminants... could plausibly account" for any of the instances of cancer, whose clustering could best be explained as a coincidence.[31] Neither medical authority nor the scrupulous physical decontamination of the building, however, have entirely decontaminated its reputation: its public presentation is still a matter of some sensitivity, with visits to the sites of Rutherford's work suspended until the relevant inquests have been concluded.

The irony is that the 1900 laboratory had been named the "Rutherford Building" only in 2006, having formerly stood without separate identity as part of the Coupland Building 1 complex. The renaming, marked by a ceremony attended by two of Rutherford's descendants,

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[29] Churcher et al. 2008 lays out the background to this controversy, from the perspective of the Psychology staff who raised the initial concerns.

[30] Most notably, Francis Beckett's articles in the *Guardian*: "The dangers in room 2.62", 9 September 2008; "Radiation concerns deepen", 30 September 2008; "Another Manchester professor falls ill", 13 January 2009; "Manchester University: dark materials", 10 February 2009.

[31] Coggon 2010, 5. The University's response, with the reports of the Psychology staff's own investigations and supporting documents, is collected at [http://www.manchester.ac.uk/rutherfordreview/].

was part of a conscious play by the University to invoke its Nobel-winning heritage.[32] The controversy provides an unusually stark reminder that reputations can be double-edged. The question of how far it is appropriate simply to *celebrate* the past, of course, is one faced routinely in the industrial heritage sector. Industrial projects, and particularly those exhibiting the Brunellian spirit of pioneering novelty often taken to typify "greatness", unambiguously *did* kill people, often in great numbers (albeit without invoking that fear of insidious lethality which is peculiar to the nuclear), and many sites today address the human cost of change. To ignore these stories would be less than honest – and also liable to be counterproductive. My experience is that local audiences tend to know the outline of the cancer scare, sometimes in over-dramatised form; they would undoubtedly be sensitive to its omission.

One consequence of the Rutherford Building investigations has been an unprecedented level of detailed attention to what kinds of activity happened where, and when, within the laboratories. Particularly significant is the work of Neil Todd, who became involved as a member of the Psychology group potentially affected by the contamination, but who also has a training in physics and a strong interest in the heritage of the building. In a supplementary report, Todd has married the results of radio-archaeological investigation to primary source accounts of buildings and experiments to trace, as far as possible, the flow not only of materials, but of people and kinds of work.[33] Such detail is, in general, surprisingly hard to come by, as will be noted below.

The migration of memory

More generally, the project is providing useful experience of the challenges of the overall approach, and how best to address them. Most immediately, there is the problem that important elements of the institutional history often lack material reminders. Sometimes, this is straightforwardly due to the relocation of the research efforts involved, as in the case of radio astronomy. Early work, initially focused on cosmic ray detection under Patrick

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[32] "Renamed Rutherford" (University of Manchester alumni news announcement), 2007. Online at [http://www.yourmanchester.manchester.ac.uk/netcommunity/page.aspx?pid=450].

[33] Todd 2008.

Blackett, was shipped out in 1945 to Jodrell Bank, a twenty-mile drive into rural Cheshire: the subsequent growth of the Jodrell Bank Observatory offers a significant material heritage case study in its own right.[34] The scale of the project, which entailed alarming levels of overspending in the early stages, obliged its promoters to canvass strenuously for goodwill, affirming the site as both a contributor to Cold War monitoring security and an icon of British post-war credibility. The Observatory's director, Professor Bernard Lovell, showed himself to be one of the most gifted scientific media communicators of the age, and the vast Mark 1 telescope on the Cheshire plain became a key element of the University's public presentation. (Anthony Sampson's 1962 list of distinguishing features of Britain's universities – a deliberate exercise in cheerfully crude impressionism – encapsulates Manchester thus: "Mathematics, Jodrell Bank Telescope. Less distinguished in arts than it was.")[35] That the research would be geographically displaced was inevitable: electrical interference had ended radio astronomy on the main site, echoing nineteenth-century cases in which the metrological underpinnings of technology proved impossible to develop in an urban-technological environment.[36] The removal, then, presents an informative episode in itself; it can be narrated on Coupland Street, up to a point, through the sites of the displaced work.

In other cases, work which was actually performed on Coupland Street has migrated in its memorialisation. Rutherford moved to Cambridge to direct the Cavendish in 1919, and is today more widely identified as a "Cambridge" physicist. A popular misconception, well enough established to be remarked on in the 1960s, holds that the disintegration experiments themselves occurred at Cambridge.[37] Unsurprisingly, audiences who feel attachment to Manchester or its university enjoy being told otherwise: the trick is to avoid triumphalism and encourage awareness of the point that received histories often need to be modified. More complex are those memorialisations which have migrated to other parts of the campus in the

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[34] Edmonds 2010.

[35] Sampson 1962, 209.

[36] Gooday 1998, 225.

[37] Oral testimony of Samuel Kay, reproduced in Hughes 2008, 111.

course of its growth. Several of the postwar science buildings contain physical memorials of work done in their respective disciplines, with perhaps the most impressive maintained by the computer scientists. Largely the initiative of two of its former professors, Hilary Kahn and Brian Napper, the displays include surviving fragments of early hardware, documentation, and a huge mural montage depicting visually iconic elements of the story. There is also, affixed to an internal wall, a plaque bearing the words "COLLEGE HOTEL": this was rescued along with the abovementioned phoenix, the computer scientists apparently feeling a particular affinity for the missing pub.

Valuable as it is, this heritage presentation raises a twofold complication. Geographically, it downplays the itinerant trajectory of the emerging computer group. The current building, a hulking slab built to affirm Manchester's prime role in the national computing infrastructure of the 1970s, was preceded by shared space within the Electrical Engineering building of 1954-5, the first major incursion across Oxford Road; this replaced a purpose-built but unassuming block on Coupland Street, which had in turn replaced Williams's "Magnetism Room." Most students assume, vaguely, that the whole story belongs to the current building, or at least to its site; a brief campus tour can, of course, correct the impression. The second complication is conceptual. The displays, in what is now the Kilburn Building, strongly reflect the values of the research school which developed around Tom Kilburn, the founding head of the Department of Computer Science, who oversaw a series of major hardware projects in commercial partnership. The Manchester vision of computer science was, and has to some degree remained, unusually focused on hardware rather than software, stressing its engineering roots. Kilburn was outspoken in seeing the mathematical and conceptual dimensions of computer science as peripheral; his defining influence is reflected in the fact that Alan Turing and his fellow mathematicians are barely acknowledged at all within the building – an absence which is increasingly conspicuous, and whose resolution is ongoing.[38]

The situation is further complicated by an unusual division of museum labour, which has tended to distance the University from its own material heritage in the physical sciences and engineering. In these fields, just as in natural history, the early Owens acquired artefacts

[38] Bowker and Giordano 1993, 20; Sumner 2012, 299-300.

whose primary function was to be displayed, for teaching purposes or for their historical significance.[39] The increasingly public-focused Manchester Museum, however, never had any brief to reflect the whole of the emerging University's heritage, its roots being in natural history and its later preoccupations in ethnography. The first serious efforts towards public display instead came as part of a much wider project, in the 1960s, to conserve and curate the numberless industrial artefacts facing destruction or abandonment across the Manchester region. This project was spearheaded by what was then the University of Manchester Institute of Science and Technology (UMIST), for most purposes a distinct institution from the University of Manchester, which opened a small museum close to its city-centre site in 1969.[40] The older university was a collaborator from the outset, but it was a third partner, the Greater Manchester Council, which ultimately assumed control. By the 1980s, the project had peeled away from its academic context, spatially as well as institutionally, as the Museum of Science and Industry moved to a new site with strong historical resonances of its own: the former railway complex at Castlefield, roughly a mile from the University, which for a few years from 1830 had formed the eastern terminus of the world's first passenger rail route. Because the University's research culture was so closely integrated with local industries, the net effect has been that some innovations have been divorced, geographically and institutionally, from their University setting.

A key case is that of the early Manchester computers, developed by staff from the University and from the electrical engineering firm Ferranti in close collaboration. The earliest machines did not survive to become historical relics, falling victim to conventional processes of scrappage and re-use, but a working replica of the 1948 prototype was built for the fiftieth anniversary of its first operation. The replication was researched and realised by volunteers who were mostly ex-Ferranti employees, and sponsored by ICL, the conglomerate which had subsumed Ferranti's computer interests, which as the national flag-carrier was committed to the use of history to project its credentials. Manchester City Council, similarly, saw an opportunity to achieve a historical underpinning for its contemporary priorities: the 1998

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[39] *Physical Laboratories* 1906, 24-25.

[40] Hills 2006.

anniversary was marked by a major conference with public events showcasing Manchester's role as a 'digital city'.[41] Though the University's role was clearly represented in all this, it did not own the replica machine, which went to permanent display at the Museum. Familiarly addressed as "Baby", it currently resides in the introductory "Revolution Manchester" gallery, amid other large exhibits displayed as visually striking industrial icons. Anecdotal evidence suggests that University campus visitors who encounter the Bridgeford Street plaques (Figure 7), having previously seen the replica at Castlefield, do not necessarily grasp that the machine replicated was *in* the room above the plaques – a point we accordingly emphasise in narration.

Putting people in their place

Taking full advantage of the opportunities of guided history means being very particular about place. If we are unable to follow the scientists, so to speak, into their buildings – and this is, for the reasons discussed above, often not practical – we should map their movements as far as possible from the outside. Windows usually provide the most helpful reference points. The aim is not, as a rule, to encourage visitors to peer through them. Rather, the value of a window is partly to give a sense of the locations and sizes of rooms, and of how their roles interrelated; but also to afford the visitor some means of peopling the site, in the mind's eye, with the relevant historical characters. The empathic value of this action is not, I would argue, too superficial to be worth the historian's attention. The pleasure of appreciating that Rutherford or Turing or Stopes or Wittgenstein *was here, as we are here*, is the chief appeal to those who make pilgrimages to scientific sites, often in the knowledge that there will be nothing to see of the apparatus of discovery. Such pilgrims are few in number, compared to the devotees of industrial heritage; but the appeal appears to be growing, spurred by volumes such as John Graham-Cumming's recent *Geek Atlas*.[42] Any such enthusiasm may as well be cultivated.

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[41] Agar 1998a; Agar, Green and Harvey 2002.

[42] Graham-Cumming 2009.

Suitable windows are not always available. Busy researchers, by strategy or otherwise, often ended up in locations which were not highly visible, and the accretion of extensions has often obscured what were once unrestricted views; the necessary narration – "You can't quite see from here…" – is usually awkward. One example concerns Ernest Rutherford's "Private Laboratory," generally held to be the site of the 1917 nitrogen disintegration experiments, whose windows face away from Coupland Street (figure 8). In describing the role of the "private laboratory" in general, as a spatial token of a professorial sovereignty which does not exist in today's research culture, it is best to look for other exemplars elsewhere on the site.

Figure 8. The 1900 physics laboratory (now the Rutherford Building) from Coupland Street. Rutherford's windows are out of sight around the left-hand side of the building.

A different challenge appears when we consider the 1951 Computer Laboratory, a little further up Coupland Street, where Alan Turing worked on morphogenesis modelling in the last three years of his life (figure 9). The building was purpose-built for the first Ferranti Mark 1 computer, and housed both engineers and mathematicians. The abovementioned engineering narrative's strong emphasis on the founding achievement of 1948, however, has led the engineers' memorialisation to focus on the Bridge(ford) Street room; as if in reaction, the memorialisation efforts of Turing's admirers have gravitated towards the 1951 building, a trend confirmed by the siting of a new plaque for his 2012 centenary. Turing's morphogenesis studies, though by no means his best-known work, have recently gained significant attention through an exhibition at the Manchester Museum. It is therefore worth trying to satisfy public curiosity as to where, exactly, Turing worked. Answering with the accuracy which might be expected, however, has proved a surprisingly complex business.

Figure 9. The two-storey 1951 computer laboratory on Coupland Street, whose exterior is largely unchanged. Turing's office window (or windows) is (or are) at the right-hand end of the upper storey.

A series of interviews with former researchers, conducted by John Pickstone in January 2012, provided an opportunity to seek a first-hand description of the working environment. A previous meeting had tentatively identified Turing as having occupied a small office at the

southeast corner of the building, his window being the rightmost on the south side; a trip into the extensively redeveloped interior, however, raised considerable uncertainty. The building now serves as the entranceway to the Coupland 1 complex, housing part of the School of Psychological Sciences and forged from a tangle of formerly distinct buildings between Coupland and Bridgeford Street. Gaps between buildings have been overspanned or glassed in, such that we repeatedly encounters external walls on the interior (figure 10), and the route to the upstairs offices now involves, in 1950s terms, climbing briefly out into empty space.

Figure 10. Exterior walls of the 1951 computer laboratory, seen in the interior of the present-day Coupland 1 Building.

Having done so – and ignored the lure of signs pointing in the opposite direction to the "Turing Seminar Room", located in a later infill block – we reach "Undergraduate Seminar Room 1", a spacious but slightly sterile room (figure 11) which shows signs of repeated repartitioning. On visiting this space, neither Bernard Richards, who was a graduate student under Turing's direct supervision from 1953, nor Dai Edwards, who had a key role in the engineering group throughout the Mark 1's installation and use, could state with confidence exactly where it was that Turing worked. The University archives shed no light on the original site layout; at the time of writing, the question is unresolved. While information of the who-was-where variety may appear trivial, the research to acquire it is not. The abovementioned researches of Neil Todd and his colleagues – which had other motives than the purely historical – demonstrate the richness of understanding which can be achieved with sufficient effort; the researcher must make strategic decisions about how far the work is justified.

Figure 11. Alan Turing was here (somewhere): Undergraduate Seminar Room 1, Coupland 1 Building, looking out onto Coupland Street.

It is also important to note that such investigation can also lead to further uncertainties, undermining the received history. The association of the nitrogen disintegration experiments with Rutherford's ground-floor personal laboratory, for instance, is a point of almost general consensus, and was at one stage commemorated by an interior plaque – yet the 1950s

recollections of William Kay, Rutherford's technician, appear to place these experiments in the basement.[43] The thoughts of a trained historian of science will, naturally, be drawn to the possibility that trying to identify "the room where the disintegration experiments happened" may necessarily involve some oversimplification of a spatially distributed operation. Producing an alternative narrative which can be articulated in concrete terms, however, will usually require further inquiry. Guiding, it emerges, is not a simple matter of re-presenting well-established historical narratives; done properly, with sufficient resources, it is to some degree a mode of research in its own right.

Conclusion: a reflexive sense of heritage

Some more convivial versions of the tour, having begun at the invisible pub, conclude with a visible one. This is not, however, the replacement specified in the Education Precinct scheme, which failed to bear out the promise of its inevitable naming as the Phoenix: quickly established as unfriendly territory for lecturers, it became exclusively student-oriented and eventually closed, the two-storey unit which housed it now standing empty and unnoticed. Academic communities, it transpires, tend to prefer some historical patina in their social environment: nostalgia for the College Arms was rampant within weeks of its demolition.[44] Preferred hostelries in 2012 include the Ducie Arms at the rear of the campus, between the University Library and the Science Park, visibly the sole survival from its cleared community;[45] and the Kro Bar, part of a short surviving run on the east side of Oxford Road, which was formerly – with the kind of cosmic irony which itself passes through anecdote into heritage lore – home to the local Temperance Society.

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[43] Hughes 2008, 111; Todd 2008, 53.

[44] Pullan 2004, 18-19.

[45] For some years now I have been supporting my colleague, Jeff Hughes, in attempts to replicate the Eagle effect by hosting a monthly reading group on the history of the physical sciences and technology in the Ducie. Regular discussion among staff and graduate students will, we hope, lead ultimately to the articulation of a searing historiographic insight which will cement the pub as an iconic material signifier for our discipline, if not for the enterprise of human thought in general. Knowing what we do of how "flashes of inspiration" are retrospectively isolated and reconstructed, it is entirely possible that this has already happened.

In fact, the radical Education Precinct plan was, by its own lights, heritage-minded. The clearances along Oxford Road, the sandblasting initiative, and unrealised plans including the replacement of Brunswick Street by a landscaped vista with artificial lake, were all intended to increase the prominence of the Owens Building and the Waterhouse frontage, presenting a visual showcase for the University as both emphatically modern and historically grounded.[46] Yet this same scheme would have left it impossible to articulate the "Street of Science" nexus in material terms: the working habitats of the Rutherford group and Osborne Reynolds, and both the 1948 and 1951 computer laboratories, would have been entirely swept away.[47] Coupland Street survives because the Precinct scheme was effectively brought to a halt in the late 1970s, largely on cost grounds, although the evident failure of similarly sweeping modular innovations elsewhere in the city was also a factor.[48]

Yet the bold modernism of the 1960s and 70s has itself bedded down into the historical environment; the buildings have acquired a patina of their own, and have been compromised by subsequent visions in their turn. Perhaps the most interesting material consequences are the remains of the elevated access decks for pedestrian traffic, which were originally projected to span Oxford Road at regular intervals: several were realised, connecting newer constructions including the Kilburn Building and the imposing eighteen-storey Mathematics Tower, both of which were designed with the only conspicuous entranceways at upper-floor level. The approach never reached critical mass, however, and the retreat from the Education Precinct reaffirmed the street-level Oxford Road as the primary means of access. The Mathematics Tower was demolished in 2005, to be replaced by the ground-accessed University Place building; the results (figure 12) add a further layer to the story of the site. Such modifications have led, interestingly, to the emergence of an organised community of heritage-minded modernists, whose activities are at present focused on attempts to preserve

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[46] This commonality is most clearly articulated in the executive summary document: *MEP* 1974, 2.

[47] Wilson and Womersley 1964. Modifications to the plan may be traced in *Manchester Education Precinct* 1974.

[48] Pullan 2004, 19-22.

the former UMIST campus, much of which was earmarked for disposal following the merger of the two institutions in 2004.[49]

Figure 12. Southwest corner of the Kilburn Building, corresponding to the site of the former first-floor accessway from the Mathematics Tower, now demolished. The large projecting plinth bearing the name of the building was once attached to the underside of the access path.

In planning a project to "promote heritage" as a vehicle for historical understanding, then, it is important to note that audiences are unlikely to be passive recipients, particularly if they have some connection to the place in question. University communities (in common with many other kinds of institutional community) generate their own historical resonances, which are often tied up with particular working identities. Discussion with those who have lived and worked among the buildings in various periods – who are often keen to be involved in this kind of project – is important not only to avoid factual errors, but to establish *what the buildings meant* (and, indeed, mean). When mapping the potential of the brickwork to carry stories, we must also pay attention to the stories it already holds.

[49] Manchester Modernist Society, "Campus" (campaign website), 2012. Online at [http://umistcampus.wordpress.com/].

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