



UNIVERSITY OF
OXFORD

CHEMISTRY
LABORATORY
of this
founded

Dyson Perrins Laboratory Conservation Plan

Building No. 152
May 2012

Oxford University
Estates Services
First draft May 2012

THE RADCLIFFE CAMERA, OXFORD
CONSERVATION PLAN



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INTRODUCTION

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1 INTRODUCTION

The Dyson Perrins Laboratory was constructed in 1911-13 by Armitage and Hodgson of Leeds to a design by Paul Waterhouse. Its construction was funded by an initial £15,000 from the Oxford Endowment Fund and a further £5,000 from Charles William Dyson Perrins, who also donated a further £25,000 to cover any shortfall and endow the institution. The building represents Oxford University's efforts to return to the forefront of scientific research in the early twentieth century. It was extended in 1920-22, 1940-41, and substantially to the north in 1957-8. The original building is no longer suitable for modern chemistry research and is now occupied by Oxford University's Environmental Change Institute, Archaeological Research Laboratory, and a vestigial element of the Chemistry Department. It was designated a Grade II listed building in 2001.

1.1 Purpose of the Conservation Plan

The University has an unrivalled portfolio of historic buildings, of which it is rightly proud. It has traditionally taken a thorough, holistic approach to building conservation, seeking to understand all the varied factors that make historic buildings significant to their diverse stakeholders, and using this to inform necessary change. It has become clear that this approach is vital to the conservation culture of an institution where so many of its historic buildings that are valued for their function also have extensive historical or architectural significance. This Conservation Plan represents the continuation of this tradition of seeking to understand what makes the University's buildings cherished assets, and of seeking ways to conserve these most important features for the enjoyment of future generations.

The success of this approach is such that it has now become codified in government policy: First in March 2010's *Planning Policy Statement 5: Planning for the Historical Environment* then in its replacement, March 2012's *National Planning Policy Framework* (hereafter: NPPF). NPPF provides useful guidance on approaching the conservation of heritage assets, and postdates the University's existing literature. NPPF defines a heritage asset as:

'A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).'

This designation clearly applies to the Dyson Perrins Laboratory.

The purpose of this Conservation Plan is to update the Dyson Perrins Laboratory's conservation policy to take into account the new guidance provided by NPPF. It will be of use both for informing responsible regular maintenance and in the preparation of future planning applications, as specified in NPPF paragraph 128.

1.3 Existing Information

A Conservation Plan has not previously been produced for the Dyson Perrins Laboratory; however, there are various forms of existing information available:

The relatively-detailed 2001 listed building description (**Appendix 1**) is the logical starting point for this plan as it lists the heritage asset's main features and briefly assesses its architectural significance.

Various planning applications have been made throughout the building's history, providing a fragmentary indication of the changes that have occurred over time.

There are several published books and articles that cover the development of organic chemistry at Oxford. Whilst as a general rule they tend to concentrate more on science than on history, these documents nevertheless provide a valuable resource for studying the Dyson Perrins Laboratory.

The Oxford University Archives and the Estates Services archives contain various useful documents for studying the history of the Dyson Perrins Laboratory and these have kindly been made available for the composition of this document.

The plan draws on statutory guidance from NPPF prepared by HM's Department for Communities and Local Government in March 2012.

1.4 Methodology

The Conservation Plan is a document that assesses the current and predicted conservation needs of the Dyson Perrins Laboratory and attempts to address them with a view towards maintaining or increasing the significance of the heritage asset. Its formulation to supersede any existing literature is a response to the requirements of NPPF, and it is prepared in accordance with the policies contained therein.

1.5 Constraints

The Dyson Perrins and its environs are subject to various constraints imposed by Oxford City Council:

- CP.3 – Limiting the Need to Travel: New development will be limited to accessible locations on previously developed sites.
- HE.9 – High Building Areas: Planning permission will not be granted for any development within a 1,200 metre radius of Carfax which exceeds 18.2m in height, except for minor elements of no bulk.

- TR.3, TR.11, TR.12 – Car Parking Standards: The City Council will not allow any significant increase in the overall number of car-parking spaces in the Transport Central Area or development that provides an inappropriate level of car-parking spaces. It will attempt to reduce the level of non-residential car parking.
- The City of Oxford Smoke Control Order No. 2: It is an offence to emit smoke from the chimney of a building, from a furnace, or from any fixed boiler if located in a designated smoke control area.



UNDERSTANDING THE SITE

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2 UNDERSTANDING THE SITE

2.1 History of the Site and University²

The site of Oxford has had sporadic settlement since the Neolithic period. Bronze Age barrows have been found in the University Parks (linear barrow cemetery) and in the Science Area (double-ditched barrow). Oxford has had a continuous history of occupation since at least the 8th Century AD. The University of Oxford itself has a long-standing tradition of exceptional education. Able to trace its roots to the 11th Century, it is known to be the oldest university in the English-speaking world.

The site upon which the Dyson Perrins Laboratory now stands is situated in the northeast of the city of Oxford. This area was developed in the 19th Century, notably with the construction of the University Museum on the eastern side of Parks Road in 1855-60 and the construction of Keble College on the western side of Parks Road in 1868-70.

The 91-acre site now occupied by the University Museum, the Science Area, and the University Parks was purchased by the University from Merton College in stages between 1853 and 1864. The first plans for the University Parks were presented to the University in June 1863, but these were rejected, and it was not until 1865 that £500 was allocated for the purchase of trees and shrubberies. Even before this point the space allocated to the Parks was diminished by the allocation in 1853 of 4 acres in its southern portion (followed by another 4 acres in 1854) for the University Museum (1855-60), and this southern expanse underwent near-continuous development throughout the second half of the 19th Century.

The University Science Area was initially developed as a series of extensions to the University Museum with: the construction of the original Clarendon Physics Laboratory (now embedded within the Robert Hooke (Old Earth Sciences) Building) on its northwest side in 1867-69 (extended in 1946-58); the construction of the Pitt Rivers Museum on the east in 1885-86; the addition of Jackson's Radcliffe Science Library to the south in 1898-1900 (extended in 1933-34); and the extension of the Department of Zoology (now housing Atmospheric Physics) and Stevenson and Redfern's Morphology Laboratory to the north in 1898-1901.³

Further science buildings were constructed in this precinct from the last quarter of the 19th Century. Many of these were originally free-standing, but continued development has created an increasingly interconnected science district. The near-continuous history of development in the area has created a crowded space at the south of the Park precinct and along South Parks Road. It is the main centre for the study of sciences within the University, and is now known as the University Science Area.

² A short chronology of the Dyson Perrins Laboratory can be found in **Appendix 2**.

³ A brief overview of the development of the Science Area can be found in **Annexe 1**.

2.2 History of the Dyson Perrins Laboratory

The Dyson Perrins Laboratory has its origins in the 1909 Committee on University Teaching in Chemistry. Historically Chemistry teaching had been confined to various college laboratories. A University Chemistry Laboratory was constructed alongside the University Museum in 1855-60. This was known as the Abbot's Kitchen, being based on the fourteenth-century Abbot's Kitchen at Glastonbury. Unsurprisingly, being based on mediaeval ecclesiastical models rather than the purpose-built laboratories at that time appearing on the Continent, this building was quickly insufficient for its needs. It was heavily extended in 1878, with a far-more-practical teaching laboratory, which, whilst no longer up to modern standards, remains in use to this day.⁴ This alleviated the problem somewhat but by the early twentieth century chemistry teaching and research in Oxford was woefully inadequate, and had long since been overtaken in academic stature by Manchester University.

The 1909 Committee on University Teaching in Chemistry reported that 'the provision made at present by the University for the teaching and study of chemistry is inadequate, both in respect of the staff and as regards laboratory accommodation...The committee recommends as urgently needed: Two University Professors at £900 a year, one assigned to the subject of organic chemistry and the other to that of inorganic chemistry.' The Committee recommended that a new building should be constructed to house the two laboratories and that it should be located on University property, close to the University Museum, and with sufficient space for future expansion.⁵

The Hebdomadal Council estimated that £25,000 would be required to construct the required laboratory and it petitioned the University Endowment Fund in March 1910 for the necessary resources. The funds were by no means easily obtained. It was not until William Odling, the Waynflete Professor of Chemistry, announced his retirement in 1912 that the conservative University Chest would meet the requests of the liberal Hebdomadal Council. It was agreed that a new laboratory would be constructed and the University Chest made £15,000 available.

An organic chemist, W.H. Perkin held the Chair of Chemistry at Manchester University, the leading chemistry department in Great Britain, and in 1909 had designed, with Paul Waterhouse, Manchester's Morley Laboratory. The specifications for this were based on Perkin's experience of Adolf von Baeyer's laboratory in Munich, where he had worked as a doctoral student. Perkin was initially invited to Oxford in 1912 as an Elector for Odling's replacement, though it was quickly made clear that he was the preferred option for the Waynflete Chair, prompting him to resign his Electorship to stand as a candidate.⁶ Research was Perkin's first priority and, when the Electors offered the rôle to him in November 1912, he accepted on the condition that he should be provided with a new laboratory and that in the meantime he should be given a fully-equipped temporary laboratory in the University Museum.

⁴ *Inorganic Chemistry Laboratory: Conservation Plan* (Estates Services, January 2012).

⁵ Curtis, R., Leith, C., Nall, J., and Jones, J., *The Dyson Perrins Laboratory and Oxford Organic Chemistry 1916-2004* (Oxford, 2008) 15-16.

⁶ *Ibid*, 17.

Perkin came to his temporary laboratory in Oxford in January 1913. He immediately set about securing his new laboratory, and in February 1913 invited Oxonians to Manchester to view the Morley Laboratory. Whilst it was intended that Oxford's new laboratory would house both organic and inorganic chemistry, the chair in inorganic chemistry had not been appointed and Perkin's single-mindedness and energy ensured that the new building would in fact house only organic chemistry. Perkin engaged the architectural services of the Balliol alumnus Paul Waterhouse, who had served him so ably in Manchester. They set about designing a building about a third the size of the Morley Laboratory, with sufficient space being left around the site for future expansion.

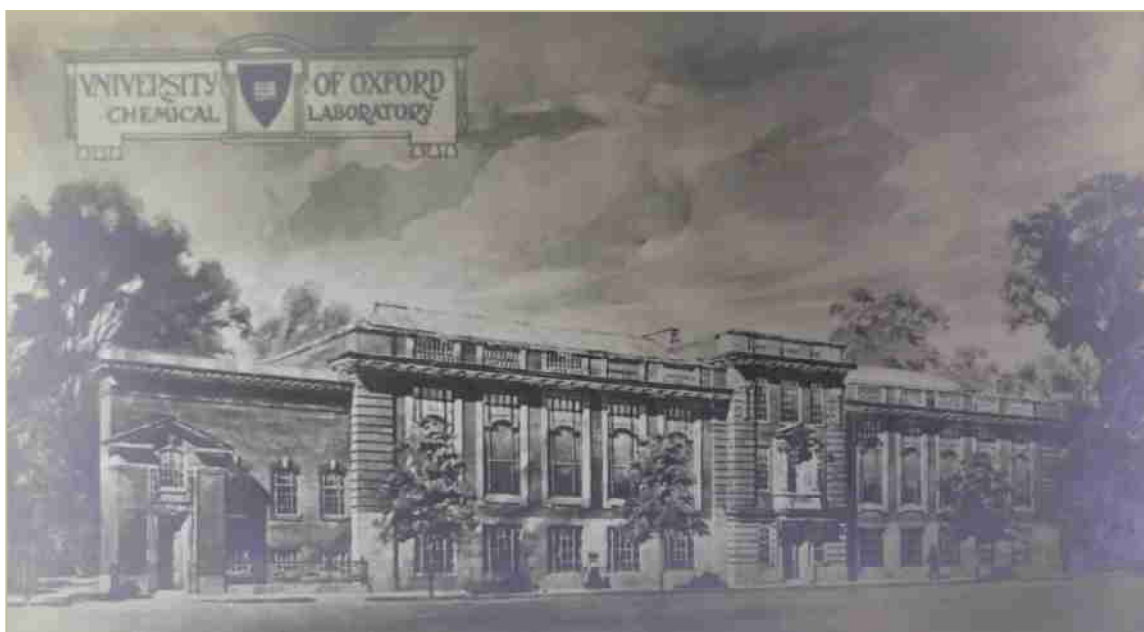


Figure 2. Waterhouse's scheme for the laboratory. Note the right-hand (eastern) wing was not built until the second stage of construction in 1920-22, and was constructed with an additional bay and slightly different windows than as shown

Perkin and Waterhouse's scheme was estimated to cost about £20,000. This was significantly less than the £25,000 originally estimated by the Hebdomadal Council in 1910, but with the University Chest only offering £15,000 this still left a substantial shortfall. In July 1913, T.H. Warren, President of Magdalen College (1885-1928) and Vice-Chancellor (1906-10), approached Charles William Dyson Perrins, an heir to the Lea and Perrins Worcestershire Sauce fortune and an alumnus of the Queen's College, securing him as a benefactor to cover the deficit.⁷

In September 1913, Armitage & Lodge of Leeds, who had completed the Morley Laboratory at Manchester, won the tender to construct the new laboratory in Oxford. Construction was begun apace, but a long building strike in the summer of 1914, followed by the outbreak of

⁷ *Ibid.*, 19.

the Great War in August, slowed construction considerably. Armitage & Lodge's initial contract had been to complete the building by 21st April 1915; however, in May 1915 it was reported that the building was at least 6 months from completion.⁸

As well as slowing down construction, the strikes and the outbreak of war had driven up costs considerably, and it became clear that the £20,000 available would only barely cover the construction of the building, and leave nothing for equipment or apparatus. The government, who had taken a great interest in the chemical research due to the ongoing war, were approached, but they indicated that they were more interested in funding specific projects than laboratories in general.⁹ Warren again met with Dyson Perrins in May 1915. Dyson Perrins famously remarked that this lunch at Magdalen was the most expensive he had ever eaten, as it ultimately resulted in him providing (after some unsuccessful wrangling on his part regarding the removal of compulsory Greek from the entry requirements for chemistry) the University with a further £25,000: £5,000 for the equipping of the laboratory, and a £20,000 endowment, which allowed it to remain independent of fees. Dyson Perrins met with Perkin for the first time a few weeks after he had offered this £25,000 to Warren, and he was evidently impressed with the Waynflete Professor, insisting that the endowment should be for Perkin's laboratory alone, ensuring that it was retained by the organic chemistry laboratory in perpetuity.¹⁰



Figure 3. Perkin in his research laboratory

The University formally assigned the new laboratory to the Waynflete Professor in February 1916, and the first stage of the building (the central block and the western wing; **Figure 1**) were complete and occupied by Easter. The New Chemistry Department, as it was initially known, was officially opened with a reception hosted by Perkin and his wife on 7th June 1916. Dyson Perrins munificence was noted: In 1919 he was awarded the honorary Doctorate of Civil Law; and in 1920 the New Chemistry Department was formally renamed the Dyson Perrins Laboratory at the urging of Warren.

The new laboratory was a move towards bringing Oxford's chemistry department in line with its potential, but as a building it was far from faultless:

'The red brick, the yellow stone, the big glass panes and the heavy ornamentation of the building did not please everybody...Laboratory equipment was not lavish: there were no vacuum or compressed-air lines, and not even steam for steam-baths...The lecture-room

⁸ The iron drainpipes had been cast with an optimistic date of 1915 on them.

⁹ Curtis *et al.*, *op. cit.*, 20.

¹⁰ *Ibid*, 21.

seemed an afterthought and was most uncomfortable; but it did have a rear-exit by which one could escape from a boring lecture. The green glass “blackboard” was an excellent one, but was placed high with a 12” step in front, giving the lecturer a kind of treadmill exercise; from the extreme sideseats the edges of the blackboard could not be seen...An ingenious use for the wedge-shaped space under the lecture-room was the provision of a small library with access to the main teaching laboratory.

As though obsessed with the darkness of some of the Manchester laboratories Perkin provided too much glass and ceiling too high in the main laboratory on the first floor.

A small lift labelled “for two person only” and just a comfortable fit for Perkin’s corpulent figure alone, took one slowly up to the Professor’s quarters on the second (top) floor.’¹¹

During the Great War, the number of undergraduates in the department fell dramatically, but Dyson Perrins’s endowment had meant that the department’s finances did not suffer unduly. Research was necessarily directed towards the war effort and in 1917 a gas laboratory was constructed on the roof of the laboratory, directly above the professor’s office, with the £400 costs coming from the Perrins Fund.¹²

Inorganic chemistry had taken up some space on the ground floor of the new laboratory, but when, at the end of the War, the Royal Air Force vacated the 1878 laboratory in the University Museum (the teaching laboratory of what is now Inorganic Chemistry) they were free to return there, and the new laboratory was for the first time exclusively occupied by organic chemists.

The end of the Great War caused an influx of keen undergraduates and the new laboratory was increasingly crowded. More benches were created by boarding over central gangways in the laboratory spaces.¹³ With this congestion in mind, it was decided in January 1920 to complete the scheme for the laboratory with the addition of the eastern wing along South Parks Road. A further contract was signed with Armitage & Hodgson in May 1920. The first floor of the new wing was complete and occupied by January 1922, whilst the ground floor was not occupied until Trinity term; however, the building was officially opened on 27th April 1922. The eastern wing cost £40,000 to build, nearly double the £22,445.39 spent on the first two-thirds of the building. Part of the costs of the new wing were met by borrowing the entirety of Dyson Perrins’s endowment (with his permission) and then paying it back at a rate of £1,000 *per annum* over the following 20 years.¹⁴

¹¹ Smith, J.C., *The Development of Organic Chemistry at Oxford, Parts I and II* (Privately published, c.1969) I.16.

¹² *Ibid*, I.31.

¹³ *Ibid*, I.33. this can be seen in the first-floor teaching laboratory where the central benches in each row are of a different design to the original benches either side.

¹⁴ *Ibid*, I.33-34.

There were some issues with the new building, and apparently the drainage in the laboratories was too shallow, causing floods above and falling water on the floors below. In the summer of 1922, a green wash was applied to the extensive rooflights of the new eastern wing in order to reduce glare. In the same year, the ornamental ironwork at the top of the lift tower to the professor's office was removed because it had already rusted and become unsafe.¹⁵ A furnace was constructed in the curtilage of the building in order to dispose of the corpses of animals from the Anatomy Department, and this caused some consternation amongst the residents of Dyson Perrins for the following 30 years.¹⁶

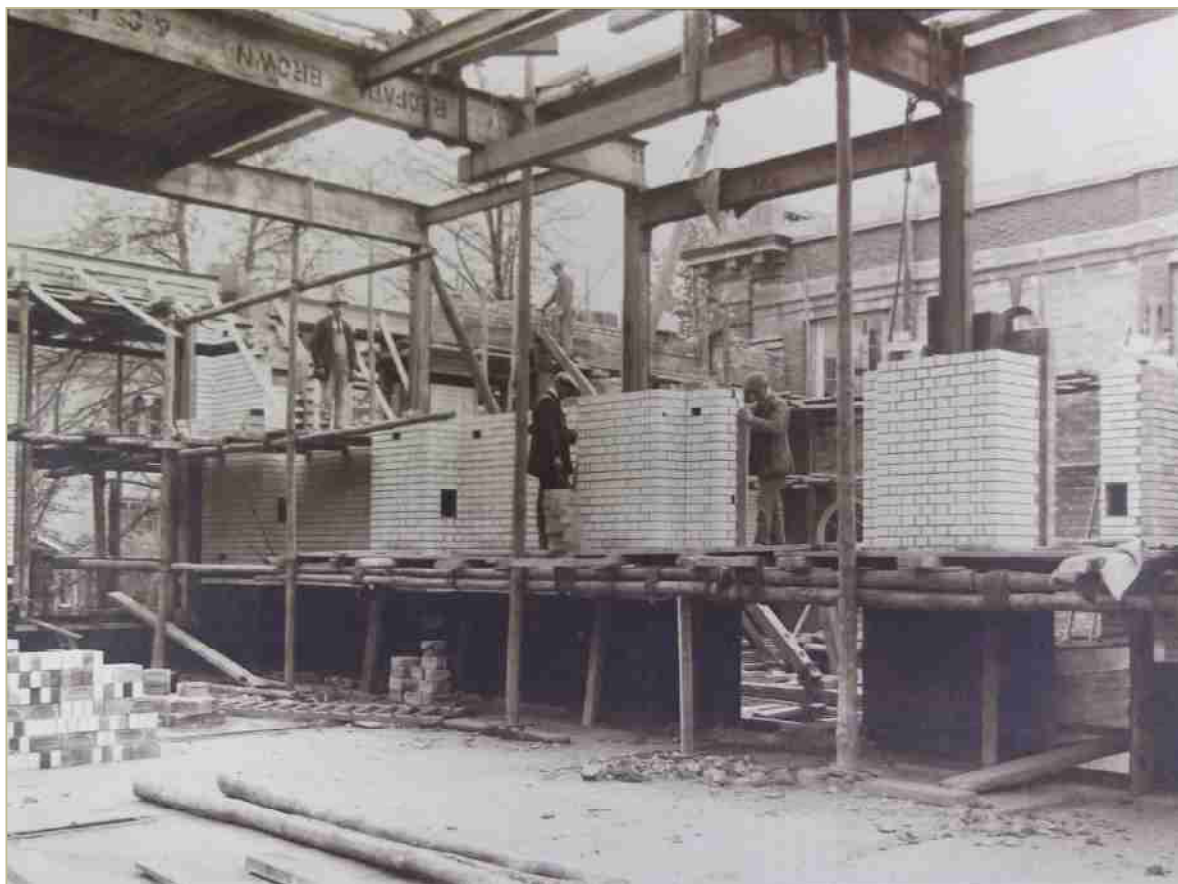


Figure 4. Construction on the eastern wing of the Dyson Perrins Laboratory on 23rd April 1921

Perkin died in 1929, with his colleagues speculating that his illness may have been related to his experiments with mercury in the laboratory.¹⁷ The Waynflete Chair was taken up by another Manchester man, Sir Robert Robinson. The Second World War was a particularly busy time for the Dyson Perrins Laboratory, with a great deal of research being undertaken very rapidly, whilst pushing through an 'unusually earnest group of undergraduates.' There was some dissatisfaction amongst the chemists who, whilst undertaking an unprecedented

¹⁵ *Ibid*, I.34-35.

¹⁶ *Ibid*.

¹⁷ *Ibid*, I.42.

scale of government-backed research, were restricted from publishing any of it due to its sensitive nature and the wartime conditions.¹⁸ Robinson's reputation attracted research students and by 1940 there were sixty in the laboratory. Dyson Perrins was busy and suffered from a lack of space, a problem exacerbated by the closure of the Queen's College laboratory in 1936.¹⁹ In 1939-40, a large brick-built extension was constructed to the north (green in **Figure 5**). It was funded by £26,000 from the Rockefeller Foundation and £6,000 from ICI. The extension was apparently planned by Robinson, with no consultation with the other staff, and was unpopular from the start. As a user of the building, Smith gives a damning outline of Robinson's extension

*'Obvious even to the inexpert were many faults: the flat roof (of course) leaked badly, even in its first year; the thin, hollow doors made explosive noises when they slammed; the door-handles turned unpredictably [sic.] in one direction only (this is a near-crime in any laboratory); the flimsy gas-taps closed unless wedged open; all the lights cast the research-worker's shadow on to his bench; the ghastly, inadequately opening, expensive draught-chambers had their exhaust pipes close together on the roof, so that the fumes from one blew down the others unless all fans were on; the passages and stairs were wasteful; the "services" were below the minimum, even for war-time 1940; there was no bridge from the first floor to the main building, making the service room a long walk away; even the room designed for micro-analysis had hot-water radiators under the stone benches for the micro-balances! I had asked...for a fire-proof room, a cold-room, a room for hydrogenators next [to] the workshop, a glass-blower's room- none of these was provided.'*²⁰

The laboratory had been busy during the War but it found an even greater influx of students after 1945. Several requests were made for more laboratories in the 1950s but these were refused and the department found itself falling into a state of decay. Robinson, who was awarded the Nobel Prize in 1947, retired from the Waynflete Chair in 1955 at the age of 69, and with rare energy began a new career at Shell. E.R.H. Jones was offered the professorship, and found himself in much the same position as Perkin had 40 years previously: he was running a highly-successful and state-of-the-art laboratory in Manchester and was not impressed by the decaying surroundings of Oxford's laboratories.²¹ Like Perkin, Jones accepted the Waynflete Chair only on the condition that appropriate surroundings were provided, including an extension and renovation of the Dyson Perrins Laboratory. Several requests had been made for new buildings throughout the early 1950s, but it was Jones's appointment which secured their construction.

¹⁸ *Ibid.*, II.12.

¹⁹ Williams, R.J.P., Chapman, A., and Rawlinson, J.S., *Chemistry at Oxford: A History from 1600 to 2005* (Cambridge, 2009) 161.

²⁰ Smith, *op. cit.*, II.14.

²¹ Knowles, J., 'The Dyson Perrins Laboratory at Oxford' in *Organic and Biomolecular Chemistry Vol. 1*, 21 (2003) 3625-3627.

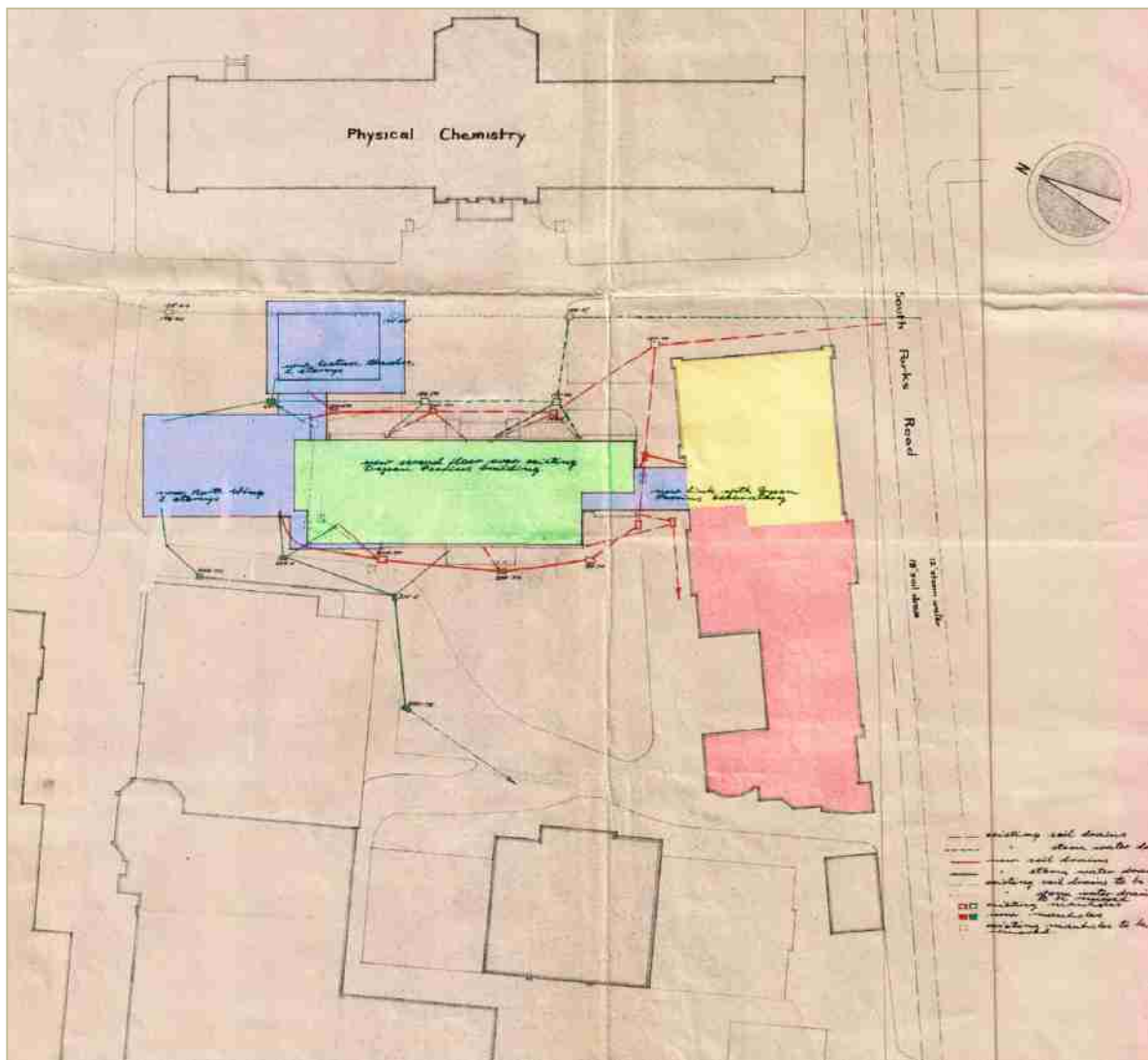


Figure 5. Plan of Dyson Perrin's Laboratory relating to 1956-58 extensions. The original phase of construction (1913-16) is highlighted in red. The eastern wing (1920-22) is highlighted in yellow. Robinson's extension (1939-40) is highlighted in green. In the 1956-58 scheme, which includes a new link between the eastern wing and the Robinson extension, is highlighted in blue. The (blue) connection between the 1920-22 and 1939-40 elements was again replaced in 2004

Some minor works were undertaken during this period, for instance, planning permission was granted in 1954 for a roof extension and in 1955 planning permission was granted for a solvents store in the curtilage; however, it was not until 1956-58 that planning applications were approved for the large extension to the rear of the original laboratory. These changes involved building a third storey on top of Robinson's 1939-40 extension and two new, unabashedly modern wings extruding from its northern end. A new link was constructed between the original building and the 1939-40 extension. The 1939-40 and 1956-58 extensions together form a separate block to the original phases of the laboratory, with only a cursory physical connection. They were aligned into the Science Area, along what is now Hinshelwood Road, rather than along South Parks Road, creating an L-shaped configuration with the original building (**Figure 5**).



Figure 6. Model for the 1956-58 scheme looking south-southwest

The construction was accompanied by renovations in the original laboratories. In 1958 the stone benches along the walls of the teaching laboratory were removed, which allowed the work benches to be better spaced, allowing for more working spaces.²²

The majority of alterations in the following two decades affected the 1939-40 and 1956-58 buildings or the curtilage, rather than the listed phases along South Parks Road. Planning permission was granted for a number of extensions and temporary buildings.

In 1978 Jones retired and Jack Baldwin took up the Waynflete chair. He was to be the last Waynflete professor associated with the Dyson Perrins Laboratory. Minor alterations occurred in the 1980s and the 1990s and planning permission was granted for a number of projects: an electrical substation and hazardous waste store in the curtilage in 1988; a make-up air supply unit and fume extract duct on one of the roofs in 1989; the lifting of the height of the lift tower in 1993; the erection of three fume extract chimneys in 1993; the relocation of the existing fume outlet ducts on the northern block, and the erection of an additional extract chimney on the southern block, and the erection of a safety guard rail in 1995.

By the time the 1920-22 extension to the Dyson Perrins Laboratory was constructed, it could be called the 'finest laboratory in the country.'²³ Chemistry is a dynamic discipline with changing needs, and whilst the building was initially well suited to its function, it struggled to

²² Smith, *op. cit.*, I.46.

²³ *Ibid*, I.34.

accommodate the changing needs of its users over the many decades of its occupation. Attempts in 1939-40 and 1956-58 to modernise the laboratory resulted in the construction of separate, but connected buildings, rather than involving extensive alteration of the older portions. Other chemistry buildings were constructed in the near vicinity, for instance the “new” chemistry building, which has since been demolished and stood on the site of the new Earth Sciences building; however, by the close of the twentieth century it was clear that the Dyson Perrins Laboratory was no longer the appropriate setting for modern, cutting-edge research and further construction was required. This was highlighted in 2001 by its designation as a Grade-II-listed building of historic significance. Plans for the new Chemistry Research Laboratory were unveiled in 1999, and this was constructed on the southern side of South Parks Road, opposite the Dyson Perrins Laboratory, in 2000-2004. Whilst a small portion of chemistry teaching remained in the building, the Dyson Perrins Laboratory officially closed in 2003, with the associated research groups moving across the road to the new laboratory:

‘Those of us who were brought up with the D.P.’s unique combination of smells, its extravagantly high ceilings, the staircase that millions of undergraduate feet could never wear away, the horrors of Room 33, and the open drains that made minor explosions in the teaching labs so much more interesting, will be nostalgic but not truly sorry [about the closure of Dyson Perrins]. The Dyson Perrins has served Oxford well, but a bright new era begins.’²⁴

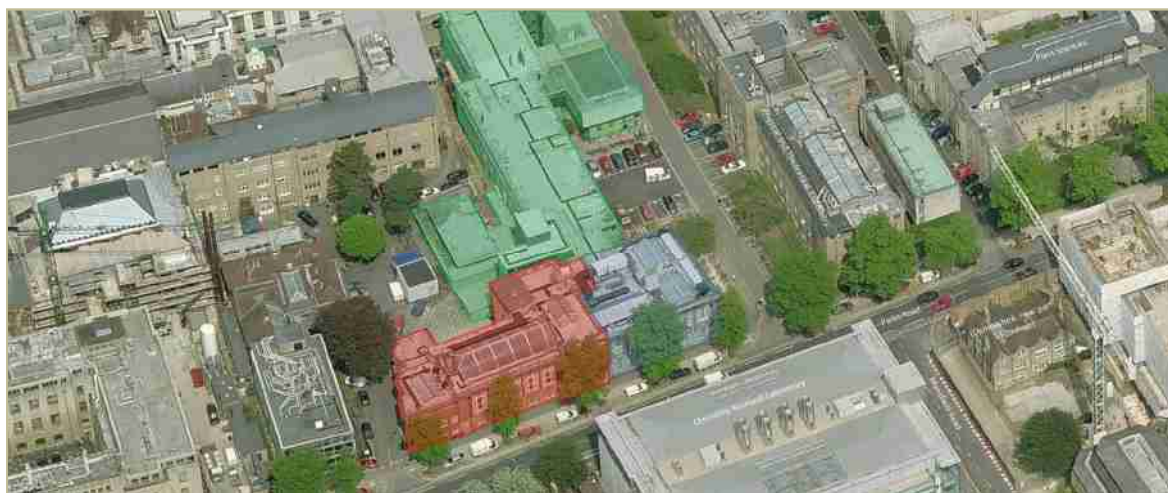


Figure 7. The Dyson Perrins Laboratory, orientated with north at the top of the image. The first (1913-16) phase of the building is highlighted in red. The second (1920-22) phase is highlighted in blue. Later extensions are highlighted in green

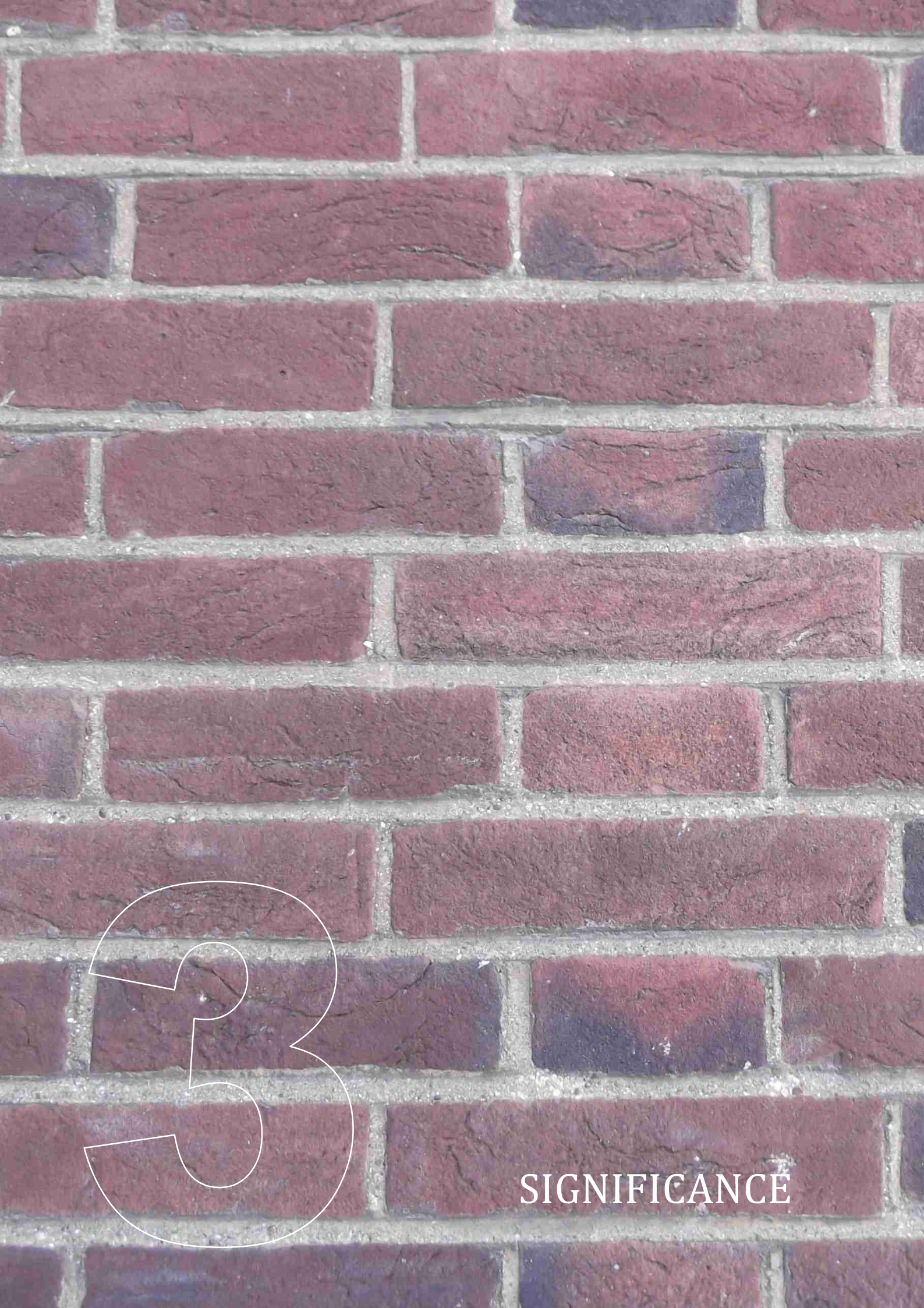
Geography’s Environmental Change Institute and the Archaeology Research Laboratory now inhabit the 1939-40 and 1956-58 extensions, and both departments, along with a small proportion of chemistry teaching, utilise the original building. When chemistry vacated the

²⁴ Knowles, *op. cit.*, 3627.

space, some alterations were undertaken in the original portions of the Dyson Perrins Laboratory to adjust them for more general use. In 2004-5, various work benches and internal partitions were removed and the ground-floor link to the 1939-40 extension was removed and replaced with a 3-storey extension. Fixtures and fittings were stripped from the first-floor spaces. A mezzanine floor was inserted into the first-floor laboratory of the 1920-22 extension, with newly-partitioned cells below. Secondary glazing was fitted within the existing window reveals. A ground-floor room, immediately to the left of the main entrance, was left with its original fixtures and fittings (including benches and lead-lined drainage gullies) intact to stand as a sample of the building's original palette. In general, non-original suspended ceilings were removed and new services trunking was left exposed; the revealing of the original ceilings, even with visible trunking, being deemed preferable to the introduction of modern suspended ceilings. New air-handling plant was fitted to the roof of the 1920-22 extension to accommodate new fume cupboards.

In 2010 listed building consent was granted for the refurbishment of the ground-floor toilets. The listed building continues to be occupied by the Archaeological Research Laboratory, Geography's Environmental Change Institute, and vestigial elements of Chemistry. It is no longer suited to modern chemical research.

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3 SIGNIFICANCE

NPPF paragraph 128 specifies that in assessing planning applications:

‘Local planning authorities should require an applicant to provide a description of the significance of any heritage assets affected including any contribution made by their setting.’

The significance of the Dyson Perrins Laboratory has been publically recognised by its designation as a Grade-II-listed building in 2001 (see **Appendix 1**).

3.1 Significance as part of South Parks Road, Holywell Ward, and the University Science Area

The character of Holywell Ward is that of a leafy, academic suburb; grand yet far removed from the harsh monumentality of Broad Street and the city centre. This character is emphasised by two major factors: the extensive tree cover, which softens the character of the area; and the presence of several important buildings. These structures include Keble College (1868-70) and the University Museum (1855-60); two buildings that are very distinct from one another yet share a projected sense of academic rigour which belies the monumentality afforded by their size.

The character of South Parks Road is defined by the presence of two buildings, the Radcliffe Science Library (1898-1900) and Rhodes House (1928), at its main point of entry, the junction with Parks Road. The impact of some of the newer large glass-and-steel structures, such as the Chemistry Research Laboratory (2004), could be expected to dominate the road; however, the character of the area is defined by these older structures at the junction with Parks Road. Both buildings project a sense of restrained grandeur, so distinct from the unfettered triumphalism of the monumental structures of the city centre. The domestic characters of 1 and 2 Parks Roads complement this, as they remain well-appointed structures but without a hint of pretension. It is the softer lines and light tones of these structures, aided by abundant tree cover, rather than the harsh lines of the larger structures such as the Chemistry Research Laboratory, that define



Figure 8. The view eastwards from the junction of Parks Road and South Parks Road

the character of the area as a leafy, academic suburb; a venerable area for serious research and study unimpeded by pomp and ceremony.

Dyson Perrins is not visible from the western end of South Parks Road (**Figure 8**). This junction with Parks Road is dominated by the Radcliffe Science and, if coming from the north, Rhodes House. The curve of the road, the 1954-57 extension of Inorganic Chemistry, and the new (2011) Earth Sciences building blocks the view of Dyson Perrins from this end of the road. The tree cover is a significant factor in the character of the area from this point, as is the green glass of the Chemistry Research Laboratory.

Travelling from the west, Dyson Perrins first becomes visible from the southern side of the road level with the eastern end of the Radcliffe Science Library and the western end of Rhodes House (**Figure 9**). The extruding porch of the Dyson Perrins Laboratory is the first visible feature. At this point the laboratory seems to form part of a continuous, though heterogeneous, mass of science-related buildings that appear to form a southern perimeter to the historic extent of the Science Area along the northern edge of South Parks Road.

As one draws closer, Dyson Perrins appears to become more of a distinct building, separate from those around it. From outside 1 South Parks Road, the Dyson Perrins Laboratory becomes visible as a clearly distinctive building, the width of its façade giving it a sprawling demeanour. The Clipsham stone of the new Earth Sciences building to the west and the yellowed brick of Physical and Theoretical Chemistry to the east delineate the Dyson Perrins Laboratory, whose red brick stands out starkly.

The Dyson Perrins Laboratory faces directly onto the Chemistry Research Laboratory, about half-way down South Parks Road. The early-twentieth-century façades of the Radcliffe Science Library, the Dyson Perrins Laboratory, and the Dunn School of Pathology, form



Figure 9. The first glimpse of Dyson Perrins from outside Rhodes House



Figure 10. the Dyson Perrins Laboratory from outside 1 South Parks Road

something of a southern perimeter to the historic Science Area. 1 and 2 South Parks Road are the only extant reminders of the past residential character of the southern side of the road, which has since been occupied by the some of the more-starkly modern elements of the Science Area, such as the Chemistry Research Laboratory and Experimental Psychology.

The Dyson Perrins Laboratory is not the defining factor in the character of South Parks Road, but stands as an important member of the group of early-twentieth-century science-related buildings on the northern side South Parks Road. Amongst this group, the Sir William Dunn School of Pathology (1925-27) is the more accomplished example of red brick on an early eighteenth-century theme.²⁵ These buildings, along with the more-modern examples of science buildings, highlight the development and long history of science in this area.



Figure 11. The Dyson Perrins Laboratory looking north-westwards from outside the Chemistry Research Laboratory

3.2 Architectural Significance

Architecturally, the exterior of the Dyson Perrins Laboratory displays the early-twentieth-century decision to utilise classical styles in modern buildings. There are hints of the wartime austerity that formed the context of the first phase of construction in the bare embellishments of the exterior: '[Waterhouse's] first scheme had a giant order of attached columns, but the executed building, in brick and stone, is rather nondescript.'²⁶ Whilst relatively plain, the

²⁵ Kay, D., 'Architecture' in Harrison, B., (ed.), *The History of the University of Oxford, Volume VIII: The Twentieth Century* (Oxford, 1994) 499-518.

²⁶ Howell, P., 'Oxford Architecture, 1800-1914' in Brock, M.G., and Curthoys, M.C., *The History of the University of Oxford: Volume VII: Nineteenth-Century Oxford, Part 2* (Oxford, 2000) 757.

exterior is of some interest: ‘Though neo-Georgian in its general character, with red-brick walls and detailing inspired by the English Baroque, Waterhouse made no attempt to conceal the building’s function, and much of the wall surface is taken up by large windows lighting the laboratories. Here, to a much greater extent than in the collegiate buildings of the early 20th century, changes in architectural form were brought about by changing needs rather than changing fashion.’²⁷ Whilst the façade of the Dyson Perrins Laboratory follows early-eighteenth-century models, the intrusion of the windows represents function beginning to dictate form; a concept which would later influence the modernist buildings elsewhere in the Science Area.

The rear (northern) elevation is of some aesthetic significance, with four ionic pilasters and an entablature in response to the porch at the front (**Figure 12**). This has unfortunately become boxed in by later extensions. The construction of the roof extension for the cooler on the corner of the rear elevation has lessened the definition of the entablature, which originally extruded above the height of the surrounding roofline.

The building’s inscriptions are of some interest. The inscription of the rear entablature reads: *ALCHYMISTA SPEM ALIT AETERNAM* (Alchemy/chemistry offers eternal hope). This inscription was located directly outside Perkin’s original office. The inscribed plaque on the southern façade reads: *BALLIOLENSIS FECI HYDATOECVS O SI MELIVS* (I, Waterhouse, a Balliol man, made this. O, if only it were better!). The larger (emboldened above) letters, if placed in numerical order, show the date of construction (an optimistic 1915), though as a sum rather than as a true numeral: MDCCLLLLVVIII (which adds up to MCMXV). A further inscription, visually bisected by a drain pipe, mixes the names of Perkin and Dyson Perrins (**Figure 13**).

The building is of some interest as a relatively early purpose-built laboratory which follows a Mancunian model with Bavarian roots. It



Figure 12. The rear elevation of the 1913-16 phases of the Dyson Perrins Laboratory looking south-eastwards



Figure 13. The Perkin-Perrins plaque, courtesy of www.headington.org.uk

²⁷ Tyack, G., *Oxford: An Architectural Guide* (Oxford, 1998) 282-283.

represents a serious attempt to meet the needs of a working laboratory, with Perkin's input being central to the building's design. The interior laboratories (**Figure 14**) with their substantial natural lighting represent an attempt to deal with the darkness experienced in some laboratories (the Abbot's Kitchen, for instance, must have been dismal to work in). The wooden benches in the laboratory spaces are also of some illustrative value, representing early-twentieth-century scientific needs.

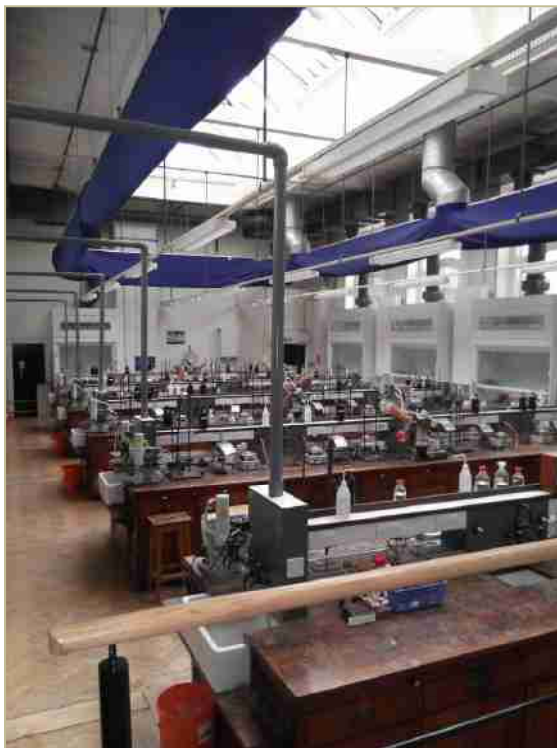


Figure 14. The first-floor teaching laboratory (152.20.04)

3.3 Historical Significance

The heritage asset is of substantial historical significance, being central to the development of Chemistry in Oxford, from a nationally-insignificant department in the early 20th century to the largest department in the western world.²⁸ As mentioned above, the building has illustrative value regarding the development of chemical research and teaching, including portions of the original benches. The building is a purpose-built chemical laboratory and its construction, including the proportions of its rooms and the high window:wall ratio, are representative of what Perkin, a leading organic chemist, thought were the needs of a first-rate chemistry department at the turn of 20th century. Especially interesting is how externally it contrasts with the Chemistry Research Laboratory opposite, which was designed to meet the same needs as perceived a century later.

²⁸ Oxford's 2001 Research Assessment Exercise submission; available online: <http://www.rae.ac.uk/2001/submissions/Textform.asp?route=2&HESAInst=H-0156&UoA=18&Msub=Z&Form=RA5a>, accessed 26.04.2012.

Dyson Perrins also possesses substantial association value. The building has been fitted with a plaque by the Royal Society of Chemistry, noting it as a ‘national historic chemical landmark.’ During its tenure as Oxford’s centre for organic chemistry, it was at the forefront of chemistry research globally and amongst the four heads of the Dyson Perrins Laboratory are numbered: three knights (Robinson, Jones, and Baldwin); one Nobel laureate (Robinson); two Presidents of the Chemical Society (Perkin and Jones); two Presidents of the Royal Society of Chemistry (Jones and Robinson); a President of the Royal Institute of Chemistry (Jones); four Davy Medals; two Royal Medals (Perkin and Robinson); and a Medal of Freedom (Robinson). As made clear by the Royal Society’s plaque, as the setting for the work of a century of the leading figures in the field of organic chemistry, the laboratory’s association value is considerable.


3.4 Archaeological Significance

No archaeological features or artefacts have ever been found in the location of the Dyson Perrins Laboratory, this is despite deep foundations being dug for the 1939-40 and 1956-58 extensions. That being said, the Science Area was the setting for an extensive rural Romano-British settlement, whilst there is nearby evidence for Bronze Age Barrows, Mediaeval ridge and furrow, Civil War earthworks, and post-mediaeval field boundaries.²⁹

Whilst there have been no recorded finds or features from the site of the Dyson Perrins Laboratory itself, the wealth of nearby archaeological material and the historic occupation of the area suggests that there may be significant material, with potential evidential value, preserved on the site.

²⁹ Oxford Urban Archaeological Database; available online: http://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=1799525&resourceID=964, accessed 26.04.2012.



 **OUCE**
UK CLIMATE IMPACTS PROGRAMME
UK ENERGY RESEARCH CENTRE

VULNERABILITIES

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4 VULNERABILITIES

The ability of the Dyson Perrins Laboratory to fulfil a contemporary function

The Dyson Perrins Laboratory is no longer well suited to modern chemical research and could not be adapted to be so within the scope of its status as a listed heritage asset. That being said, it is a useful and attractive building which retains a contemporary usage. The location and history of the building suggest that its usage should remain related to scientific study.

The building's use by Chemistry in the 85 years prior to its listing did result in some alterations that detract from the building's aesthetic appeal, notably the congestion of plant and ducts on the roof. It is central to its continued maintenance and conservation that the building remains in use, but in the long term this utility should be able to operate within the confines of the listed nature of the building and the restrictions this creates.

The usage of the heritage asset funds its upkeep and conservation and ensures its continued existence and significance. The current usage does not threaten the significant features of the heritage asset and the building's Grade II listing ensures that any future alterations operate within the constraints of an accepted understanding of the building's significance as a heritage asset. Whilst some limited alteration into the future will be inevitable in order to maintain the active usage of the heritage asset, the unique character of the building should be respected in any future plans.

4.1 Accessibility

The ability of the Dyson Perrins Laboratory to remain a working building with a contemporary function is central to its significance. Its ability to do is lessened if any person who wishes to legitimately use and enjoy the building is hampered in doing so by inadequate access provision. The accessibility of the building is hampered by its original design. The original main entrances from South Parks Road are not accessible and movement within the listed portions of the building relies upon stairs; for instance, there is a change in level between the main entrance hall and the ground-floor circulation spaces. There is Perkin's original lift, but this is small and not suitable for wheelchair use. The main entrance to the building is now in the 1939 extension, and this is accessible; however, it is not clear, especially from South Parks Road, that this is the main entrance, and the original portions of the building remain arranged around the original entrance and entrance hall. The extension of the building, combined with the shared nature of its occupation means that the space is not legible and circulation is confusing.

The 2004 link extension provides disabled lift access to each floor of the listed portions of the Dyson Perrins Laboratory, which is a great improvement on previous provision; however, it creates particularly long circulation routes for disabled users if they wish to move between floors. In order to use this resource, disabled users must enter through the 2004 link or

through 1939-40 extension; there is no direct disabled access to the listed portions of the building. The limitations of access through the original South Parks Road entrances is unfortunate, as ideally all users should be able to enter the through the same point and move freely around the building without disadvantage.

4.2 Maintenance

4.2.1 External Elevations

The external elevations of the Dyson Perrins Laboratory are amongst its most significant features. The primary, southern elevation is the most recognisable aspect of the building and possesses notable aesthetic value. It contributes substantially to the unique and mixed character of South Parks Road, as well as being perfectly pleasant in its own right. The western elevation is interesting, having been designed to fit into an awkwardly irregular space quite attractively. It now forms a pleasant approach to the new Earth Sciences Building. The northern elevation has suffered somewhat, being overlooked and blocked in by later construction (**Figures 12 and 15**) especially the original engaged ionic portico. A modern, single-storeyed hut now fills the void at the rear of the eastern wing, detracting from the aesthetic value of the elevation. The eastern elevation is pleasant, but the least significant of the four.

The historic, red-brick elevations are of some aesthetic value and contribute to the character of their settings, most notably the southern elevation. For the most part the elevations have aged well, but they are open to weathering, erosion, potential vandalism, and pollution; damage which could detract from the significance of the heritage asset. The brick work has suffered in some places, especially along the corner of the western and northern elevations. There is staining to the stone banding and detailing.

The roof has been disfigured by a glut of services and extensions. As highlighted above, the roof-level cooling plant extension at the rear of the building acts to homogenise the engaged portico with the rest of the façade, lessening its impact (**Figure 12**). The large ducts on the lower, western section of the 1913-16 roof are incongruous and visible from the street. The associated steel access ladders and safety rail are necessary, but do diminish the aesthetic value of the frieze, balustrade, and roofline when



Figure 15. The rear (northern) elevation looking southwards from the pleasant forum beside new Earth Sciences

viewed from the street.

The landscape setting of the building has changed since its construction as the Science Area has become more heavily developed. One would imagine the rear elevation originally looked onto parkland, but Smith categorises this space immediately behind the building as ‘near wasteland...useful for disposing of sodium residues and evil-smelling products.’³⁰ Though he does also talk about the pleasant views over tennis and croquet lawns further north. Extensions have ‘cruelly spoiled’ the rear elevation.³¹ The new forum created by the rear elevation, the eastern elevation of the 1939-40 extension, and new Earth Sciences, is a particularly pleasant space however. South Parks Road has lost the residential character it possessed when the Dyson Perrins Laboratory was first constructed, with the only remaining indicators being 1 and 2 South Parks Road (William Wilkinson, 1868-69 and 1865-66). Smith describes the laboratory’s setting in 1916: ‘South Parks Road was a quiet by-road and the shrubbery in front of the laboratory was much used by courting couples.’³²



Figure 16. Unsympathetic repair to tiles on ground-floor corridor

4.2.2 Interior Spaces

The interior of the building is of some interest. The main entrance with its internal porch and central staircase is an attractive space, with a discernable early-twentieth-century institutional character. The corridors, with their half-height green and white glazed tiles, have been compared to a public lavatory, but are of some illustrative value, their design having been deemed a necessity by Perkin.³³ In some cases these have suffered damage and have not necessarily been repaired in a sympathetic manner (e.g.



Figure 17. The original benches in 15.20.04

³⁰ Smith, J.C., *op. cit.*, 18.

³¹ Pevsner, N., and Sherwood, J, *Buildings of England: Oxfordshire* (Harmondsworth, 1974) 277-278.

³² Smith, J.C., *op. cit.*, 16.

³³ Williams, R.J.P., *et al.*, *op. cit.*, 134.

Figure 16). The teaching laboratories are attractive and well-lit spaces of some illustrative value. They retain their original benching and lead-lined drainage gullies. The benches in 152.20.04 have their cupboard doors fitted backwards, with the recessed panels facing inwards, presumably to avoid a dust trap; however, the doors in 152.20.18 are fitted with the recessed panels facing outwards.

As the interior features are in regular use and for the most part experience greater human interaction than the external structure of the building, they are vulnerable to vandalism, accidents (especially regarding the laboratory nature of some areas of the building), and general wear and tear. Some of these issues should be mitigated assuming adequate security and maintenance regimes are in place, but ultimately these significant elements will have limited lifespans. These lives can be lengthened as much as possible through regular, adequate monitoring and maintenance.

As a Grade-II-listed building any alterations, or repairs made with non-original materials, will require listed building consent.



5

CONSERVATION
POLICY

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5 CONSERVATION POLICY

Having established the significance of the Dyson Perrins Laboratory as a heritage asset, and having identified ways in which the significance of the Dyson Perrins Laboratory is vulnerable to harm, it is necessary to recommend policies to reduce the probability of such harm occurring, and thereby conserve the significance of the site. In essence, these policies set parameters for managing the fabric of the site.

The Conservation plan is intended to be an active tool for the regular maintenance and long-term management of the Dyson Perrins Laboratory. It needs to be reviewed regularly, and revised as appropriate to take account of additional knowledge and changing priorities.

5.1 **The Dyson Perrins Laboratory's continued use in a contemporary and relevant function is important to its continued significance. Permit, in line with NPPF paragraphs 131, 132, 133, and 134, alterations intended to facilitate its continued use in this way**

The continued use of the Dyson Perrins Laboratory in a contemporary function broadly related to the scientific disciplines represents an important aspect of its significance. Its relationship with science is a key aspect of its historic significance and it represents an important feature of the 150-year history of the development of the Science Area in this locale. This building was designed with functionality in mind, with its function to some extent dictating its form, and should never stand as a static monument. Alterations will inevitably be required in order to retain this significance in line with modern standards and requirements, though the less the building is related directly to scientific research the less dramatic these changes will likely need to be. If alteration is required in the future it should be permitted with the following provisos:

- Any alterations must be sympathetic to the Dyson Perrins Laboratory's significance as a heritage asset and, in line with NPPF paragraph 134, any proposals that involve 'less than substantial harm to the significance' should deliver 'substantial public benefits.' In line with NPPF paragraph 132, any proposals that involve 'substantial harm or loss' should be 'exceptional.'
- Any changes should: '...preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset' (NPPF paragraph 137).

5.1.1 **In order to ensure that the Dyson Perrins Laboratory can operate in accordance with contemporary requirements, and that its significance can be maintained by making access as wide as possible, special concern should be applied to ensuring that disabled access is adequate**

Ensuring that the heritage asset can be enjoyed as widely as possible will have a major positive impact on its significance. Access will remain a major concern in any plans developed for the site; a vigorous effort should be made to improve access to the site in any

future plans, with the University seeking to exceed its statutory obligations and always viewing this as part of an ongoing process.

5.2 Note that the Dyson Perrins Laboratory is a Grade-II-listed building and ensure that appropriate consents are obtained for works to the interior and exterior of the building

In order to ensure the heritage asset's significance, alterations may be required in the future, and due to the listed status of the building, even minor routine repairs may need consent. Caution should be applied in order to ensure that any statutory duties are fulfilled. In cases of doubt **Estates Services should be contacted in the first instance** and if necessary they will refer queries on to Oxford City Council.

5.3 Ensure proper consultation in advance of any work to the building with the Local Authority conservation officer (through Estates Services) and any other interested parties

It is important to guarantee that the best advice is obtained at an early stage of any proposal to alter any part of the building in order to ensure that the significance of the building is respected.

5.4 Refer to this Conservation Plan when considering repairs or alterations in any space

The Conservation Plan gives an overview of which aspects of the building are significant or vulnerable. Where original or significant material is extant, repairs should be carried out using the same materials and techniques and should not affect the significance of the asset without providing substantial public benefits in line with NPPF paragraph 134.

5.5 Any alteration or redevelopment must respect the character of South Parks Road and the surrounding area. Notably it must respect the Dyson Perrins Laboratory's location close to listed buildings (e.g. the University Museum, the Pitt Rivers Museum, and the Inorganic Chemistry Laboratory)

The Dyson Perrins Laboratory is important to the character of South Parks Road and the Science Area, which is itself an eclectic mix of buildings of varying style, significance, and quality developed over a 150-year period. Any future alteration should respect the importance of the relationship of the historic and listed buildings with the Science Area as a whole and should not diminish the Dyson Perrins Laboratory's rôle in the character of the surrounding area.

5.6 Conservation of specific factors contributing to overall significance

Whilst the Dyson Perrins Laboratory is primarily significant due to its historical associations, it also possesses various internal and external features of some significance (**Sections 3.1 and 3.2**). An effort should be made to identify and conserve original architectural features where possible in line with **Section 5.1**; however, it is accepted that all materials have a natural lifespan and some degree of change must be permitted to keep the building safe, usable, and generally fit for function. Some materials will have a very long life expectancy if given

routine maintenance; others are impermanent and may need periodic replacement. Within the framework of understanding and valuing what is present in the building a degree of ongoing change is inevitable.

5.6.1 Any alterations to be made to the external elevations will respect their significance and the contribution they make to their setting

The exposed portions of the elevations are of some significance. They contribute to the character of South Parks Road, though the nearby, unlisted William Dunn School of Pathology is a more successful execution of a similar theme. That being said, it remains an important feature of South Parks Road, its neo-Georgian façade contrasting with the modern architecture around it. Any alterations that are planned that may affect the external fabric of the building and its setting should only be undertaken with a full understanding of and respect their characters in line with **Section 5.1** and **Section 5.1.1**.

5.6.2 The significance of both individual elements and the spaces as a whole will be taken into account when considering alterations to the fabric of: the entrance hall; the tiled hallways and lavatories; and the remaining benches within the teaching laboratories

The interior spaces of the building are of some significance. Where original material is retained, for instance the half-height tiling in the hallways, they represent the perceived needs of the original building and are of some illustrative value regarding the history and development of purpose-built laboratories. The proportions of the laboratory spaces and their abundance of natural lighting are of some illustrative value in themselves. If alterations are planned in the interior spaces, especially those affecting original material, they should only be undertaken with a full understanding of and respect for the character of the space in line with **Section 5.1** and **5.1.1**.

5.7 In the vein of NPPF paragraph 110, efforts should be made to ensure that the Dyson Perrins Laboratory's contribution to climate change is as minimal as is feasible for a building of its age, size, materials, and use. Any proposals for alterations should assess the feasibility of incorporating low and zero carbon technologies

Ensuring that the building is sustainable will be crucial to its long-term survival and significance. As stated in NPPF paragraph 110, development should seek to 'minimise pollution and other adverse effects on the local and natural environment.'

5.8 If during any subsequent renovations or alterations any excavation work is carried out beneath the Dyson Perrins Laboratory, an archaeological assessment will be made of the potential for significant finds, and if appropriate an archaeologist will be given a watching brief as excavation takes place

No archaeological material or features have ever been reported from the site of the Dyson Perrins Laboratory, even during excavation for the 1956-58 extensions; however, there is a long history occupation in the area, including a major rural Romano-British settlement. Should any excavation work be carried out in this area, an assessment of the archaeological

potential should be made. This should include at least a desk-based assessment, but possibly geophysics and trial trenching. A watching brief will almost certainly be required for any excavation.

5.9 A good practice of routine recording, investigation, and maintenance will be enacted and sustained. Such an approach will minimise the need for larger repairs or other interventions and will usually represent the most economical way of retaining an asset

5.9.1 Estates Services (or its agents) will ensure that a senior member of staff has responsibility for the administration and recording of a routine maintenance programme for the building

All buildings need to be routinely maintained if they are to stay in good condition. This requires a detailed maintenance programme and, critically, someone who is responsible for ensuring that routine operations are carried out. A proper record of the repair and maintenance work in a maintenance log is a useful management tool. Such information will be recorded in the Estates Management software package *Planon*.

5.9.2 The Conservation Plan will be circulated to all senior staff who work in the Dyson Perrins Laboratory and to all other members of the University who have responsibility for the building or its contents

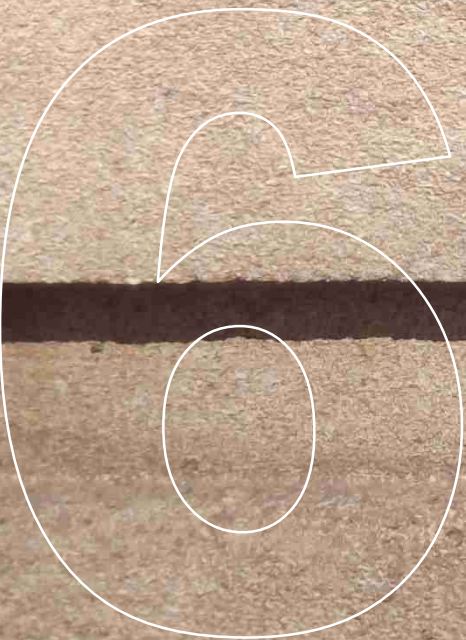
The value of the heritage asset needs to be appreciated by all senior staff managing or working in the building. Only in this way will the heritage asset be properly treated, repaired, and maintained.

5.9.3 The Conservation Plan will be made available to Oxford City Council, English Heritage, and any other party with a legitimate interest in the building

The Conservation Plan is intended to be a useful document to inform all parties with a legitimate interest in the building.

5.10 The Conservation Plan will be reviewed and updated from time to time as work is carried out on the building or as circumstances change. The recommendations should be reviewed at least at five-yearly intervals

Policy changes, building alterations, or other changes of circumstance, will affect the conservation duties and requirements of the building. The policy recommendations in the Conservation Plan will inform the future of the building and should be a useful tool for people carrying out maintenance work or where more significant alterations are being considered. The recommendations need to be kept up to date if they are to remain relevant.



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- Historical plans, documents, photographs, and correspondences courtesy of Oxford University Archives (Refs: MU 4, DP 49-50).

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3rd May 2012.

6.7 Image Credits

- Cover and chapter covers: Estates Services photographs.
- Figure 1: Adapted from Google Maps (see **Section 6.6**).
- Figures 2-4: Courtesy of Oxford University Archives.
- Figure 5: Adapted from 1956 planning application, ref: 56/05495/A_H.
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- Figure 7: Adapted from Bing Maps (see **Section 6.6**).
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- Figure 13: Courtesy of www.headington.org.uk (see **Section 6.6**).
- Figure 14-16: Estates Services photograph.

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APPENDICES

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7 APPENDICES

Appendix 1 Listed Building Descriptions

List entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: DYSON PERRINS CHEMISTRY LABORATORY

List entry Number: 1389444

Location

DYSON PERRINS CHEMISTRY LABORATORY, SOUTH PARKS ROAD

The building may lie within the boundary of more than one authority.

County	District	District Type	Parish
Oxfordshire	Oxford	District Authority	

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 03-Oct-2001

Date of most recent amendment: Not applicable to this List entry.

Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 488103

Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

List entry Description

Summary of Building

Legacy Record - This information may be included in the List Entry Details.

Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

History

Legacy Record - This information may be included in the List Entry Details.

Details

612/0/10075 SOUTH PARKS ROAD 03-OCT-01 Dyson Perrins Chemistry Laboratory

II

Chemistry Laboratory. 1911-13 with 1920-22 addition and later additions to the side and rear. Paul Waterhouse (1861-1924). Red brick and ashlar elevations.

PLAN: Long range with central entrance to hall with main stair. Secondary stair to end of range in 1920-22 addition. Split-level to lower ground floor with longitudinal corridor and small laboratories. Upper level has large, double-height laboratory to each side.

ELEVATION: Main elevation of 1911-13 comprises projecting and slightly higher frontispiece three windows wide and ranges of five and six windows wide to the left and right. Frontispiece comprises stone ground floor with door case of large scrolled brackets supporting flat roof with first Ionic columns and flanked by two sashes. Three windows to second floor with straight stone festoons. Prominent cornice with deep dentil moulding. Stone parapet with three short ranges of balustrade. Prominent cornice and dentil moulding continues to lower side sections with run of balustrade in brick parapet corresponding to each window bay below. These sections defined by tall windows with stone frames to double-height first and second floors, multi-pane with prominent curved glazing bar. To left, ground floor defined by tall stone plinth, and to right, stone aprons below shorter upper window with ground floor multi-pane sash of almost equal height. Stone plaque to main facade that reads 'Balliolensis feci Hydatoecus o si mellus' (translates to 'I Waterhouse a Balliol man made this, if only it had been better!'). Wide horizontal brick quoins to corners. Right side elevation with identical range of five window bays. Addition of 1920-22 to far left is slightly lower and predominantly brick with three segmental-arch-headed, multi-pane windows and projecting porch. Porch roof has broken stone pediment with large keystone to segmental-arch window below flanked by straight festoons. Frieze with stone wreaths to front and one wreath to side elevation where frieze and cornice continue. 2 round portals hang from frieze with brackets. Round-headed windows follow the interior stair. Large multi-pane windows and wide stone banding to this side elevation that steps back irregularly to follow service road. Rear elevation similar to front with engaged portico of four ionic columns supporting frieze marked 'Alchymista spem alit aeternam'.

INTERIOR: Main staircase in hall with stone piers with abstract capitals. Corridor with half-height green and white glazed tiles. Interior transoms to corridors. Main laboratory at first floor to left with wood laboratory tables with porcelain basins and long skylight framed with metal arches and dentil moulding.

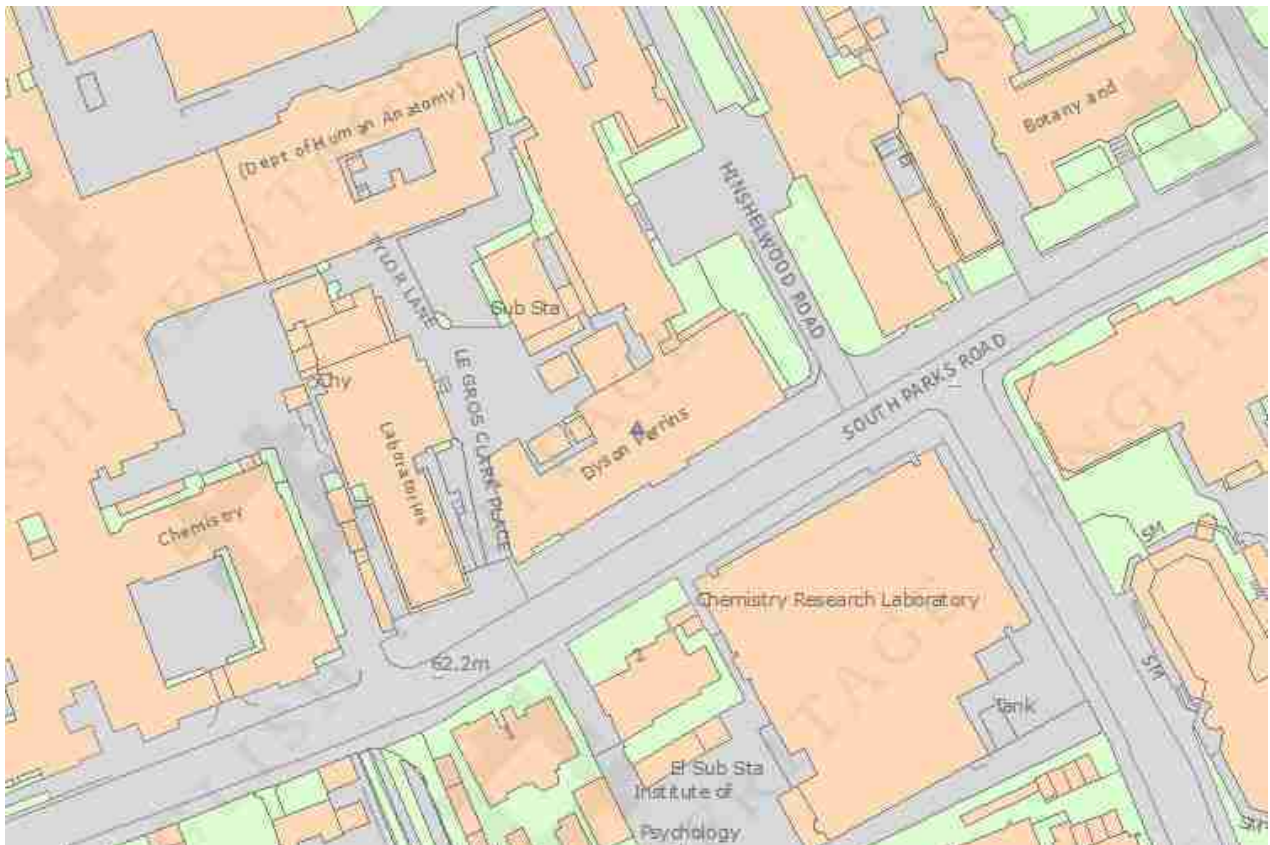
Listing NGR: SP5160506908

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SP 51602 06910

Map



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The above map is for quick reference purposes only and may not be to scale. For a copy of the full scale map, please see the attached PDF - [1389444.pdf](#)

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Appendix 2 Chronology of Dyson Perrins Laboratory

1909	Paul Waterhouse's Morley Laboratories are constructed in Manchester
December 1909	The Committee on University Teaching in Chemistry reports "that the provision made at present by the University for the teaching and study of chemistry is inadequate, both in respect of the staff and as regards laboratory accommodation." It is recommended that two laboratories, one for organic and one for inorganic chemistry, are constructed close to the University Museum
March 1910	Hebdomadal Council decides to petition the University Endowment Fund for £25,000. It eventually provides £15,000
1912	Willaim Odling, Waynflete Professor of Chemistry, retires
January 1913	William H. Perkin Jr. comes to Oxford from Manchester and takes up the Waynflete Professorship of Chemistry on the condition that new laboratory buildings will be provided and that a fully-equipped temporary laboratory would be provided in the University Museum in the meantime
February 1913	Perkin invites Oxonians to Manchester to view the Morley Laboratories to give an indication of his proposals for Oxford
July 1913	T.H. Warren, Vice-Chancellor and President of Magdalen College, meets with C.W. Dyson Perrins and secures £5,000 to augment the £15,000 provided by the University Endowment Fund
September 1913	Armitage and Hodgson of Leeds, who constructed the Morley Laboratory, are awarded the contract to complete the Dyson Perrins Laboratory by 21 st April 1915
Summer 1914	There is a long building strike, which, combined with the outbreak of war in August, slowed down construction tremendously
May 1915	The Great War having disrupted construction, it is reported that the building is still 6 months from completion. It is realised that the £20,000 budget will at most cover the construction of the building, unequipped. Dyson Perrins is again approached and he offers a further £25,000 to both cover the shortfall and endow the institution
February 1916	The University formally assigns the new laboratory to the Waynflete chair
Spring 1916	The central block and western wing are completed at a cost of £22,445.39. Perkin and his colleagues occupy at Easter
7 th June 1916	Perkin and his wife hold a reception to mark the official opening of the building
1917	A gas laboratory is constructed on the roof, directly above the professor's office, with the £400 cost being met by the Perrins Fund
1919	Dyson Perrins is awarded an honorary Doctorate of Civil Law
1920	The "New Chemistry Department" is formally renamed the Dyson Perrins Laboratory at the urging of Warren
May 1920	A further contract is signed with Armitage and Hodgson to construct the eastern wing of the building
1922	The second stage of building, the eastern wing, which was postponed due to the war, is completed at a cost of £40,000 and officially opened on 27 th April (the first floor had been occupied since January)
1922	The ground floor of the eastern wing is completed in Trinity term, after the official opening of the building
1922	A green wash is painted on the extensive roof lights of the new wing in

	summer to reduce glare
1922	The ornamental ironwork at the top of the lift tower rusted and became unsafe, having to be removed
1922	A furnace for burning animal corpses from the Anatomy Department is placed northwest of Dyson Perrins, causing some annoyance to its inhabitants
1929	Perkin dies and Robert Robinson takes up the Waynflete chair in the following year
1939-40	A major extension is completed with funding from the Rockefeller Foundation and ICI
1954	Planning permission is granted to construct a laboratory extension on the roof
1955	E.R.H. Jones takes up the Waynflete chair on the condition that the Dyson Perrins Laboratory will be renovated and extended
1955	Planning permission is granted for the construction of a solvents store in a previous parking space
1956-58	Planning applications approved for the large extension to the rear of the original building
1958	Alterations to the teaching laboratory in the original building removed the stone benches from against the wall, allowing the working-benches to be better spaced
1964	Planning permission is granted for a single-storey building to house hydro-generators
1965	Planning permission is granted for an extension to form a porch, presumably on the 1950s extension
1967	Planning permission is granted for the extension of a covered loading area
1968	Planning permission is granted for the erection of a greenhouse on the roof of the laboratory
1968	Planning permission is granted for the extension of an existing store
1968-69	Planning permission is granted for replacing the brick external walls to the cleaner's store with timber-framed walls. A revised application is also approved the following year
1970	Planning permission is granted for a single-storey extension at second-floor level for use as a laboratory with escape stairs passing through existing. This presumably affects the 1950s extension
1978	Jones retires and Jack Baldwin takes up the Waynflete chair, the last Waynflete professor associated with the Dyson Perrins Laboratory
1988	Planning permission is granted for a new electrical substation and hazardous waste store in the curtilage
1989	Planning permission is refused for the erection of a make-up air supply unit and a fume extract duct on the roof
1993	Planning permission is granted to lift the height of the existing lift tower
1993	Planning permission is granted for the erection of 3 fume extract chimneys, presumably on 1950s extension
1995	Planning permission is granted for the relocation of the existing fume outlet ducts on the northern block, the erection of an additional extract chimney on the southern block, and the installation of a safety guard rail
2003	The Dyson Perrins Laboratory officially closes, with the associated research groups moving to the new Chemistry Research Laboratory across

	the road
2004	Listed building consent and planning permission is granted for internal alterations which include the removal of work benches and partitions. The ground-floor link to the 1939-40 extension is also demolished and replaced with a new 3-storey extension
2004	Listed building consent and planning permission is granted for refurbishment of the teaching spaces
2005	Listed building consent and planning permission is granted for internal alterations which include the insertion of the mezzanine in the first-floor laboratory space, new internal partitions, and secondary glazing. New services and air-handling plant are fitted to the roof. These affect the 1920-22 listed extension
2010	Listed building consent is granted for internal alterations to refurbish ground-floor toilets

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Appendix 3 Checklist of Significant Features

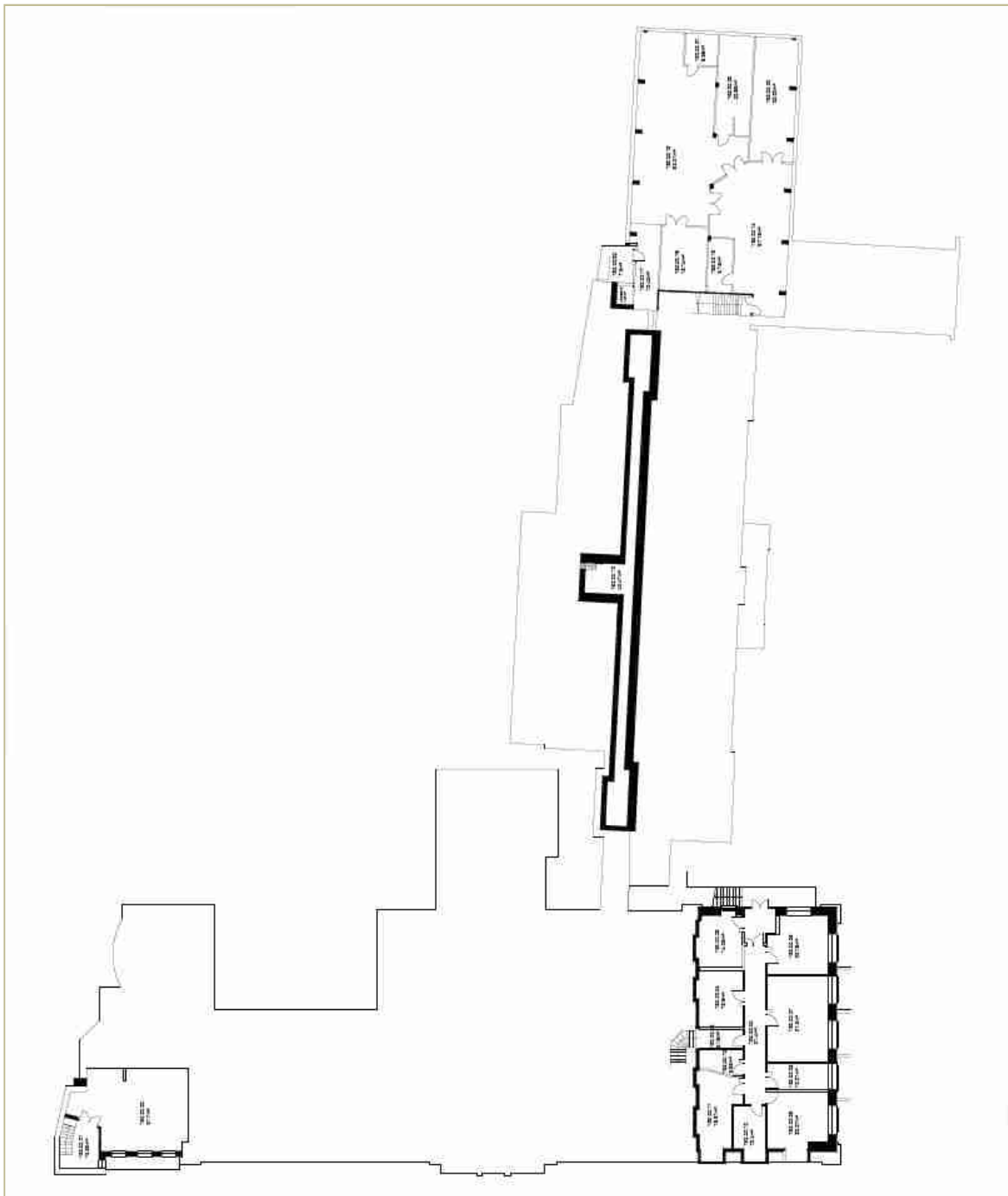
This checklist is intended for the use of those working or planning work on the site or buildings. It highlights features of architectural significance within the Dyson Perrins Laboratory; these may be original features or new additions that nevertheless contribute positively to the character of the building. As this is a Grade II listed building any repair or alteration work to factors that contribute to the significance of the building will require listed building consent in order to avoid prosecution under the Planning (Listed Building and Conservation Areas) Act, 1990. **If planned work will likely affect any of the aspects featured in the list below advice should immediately be sought from the Building Conservation Team at Estates Services.**

The checklist lists both general significant features that affect the building as a whole and which should be held in mind if working in any space, and specific features of particular significance that should receive special regard if working in these particular spaces. The Further Information column refers to the relevant page reference in the Conservation Plan proper.

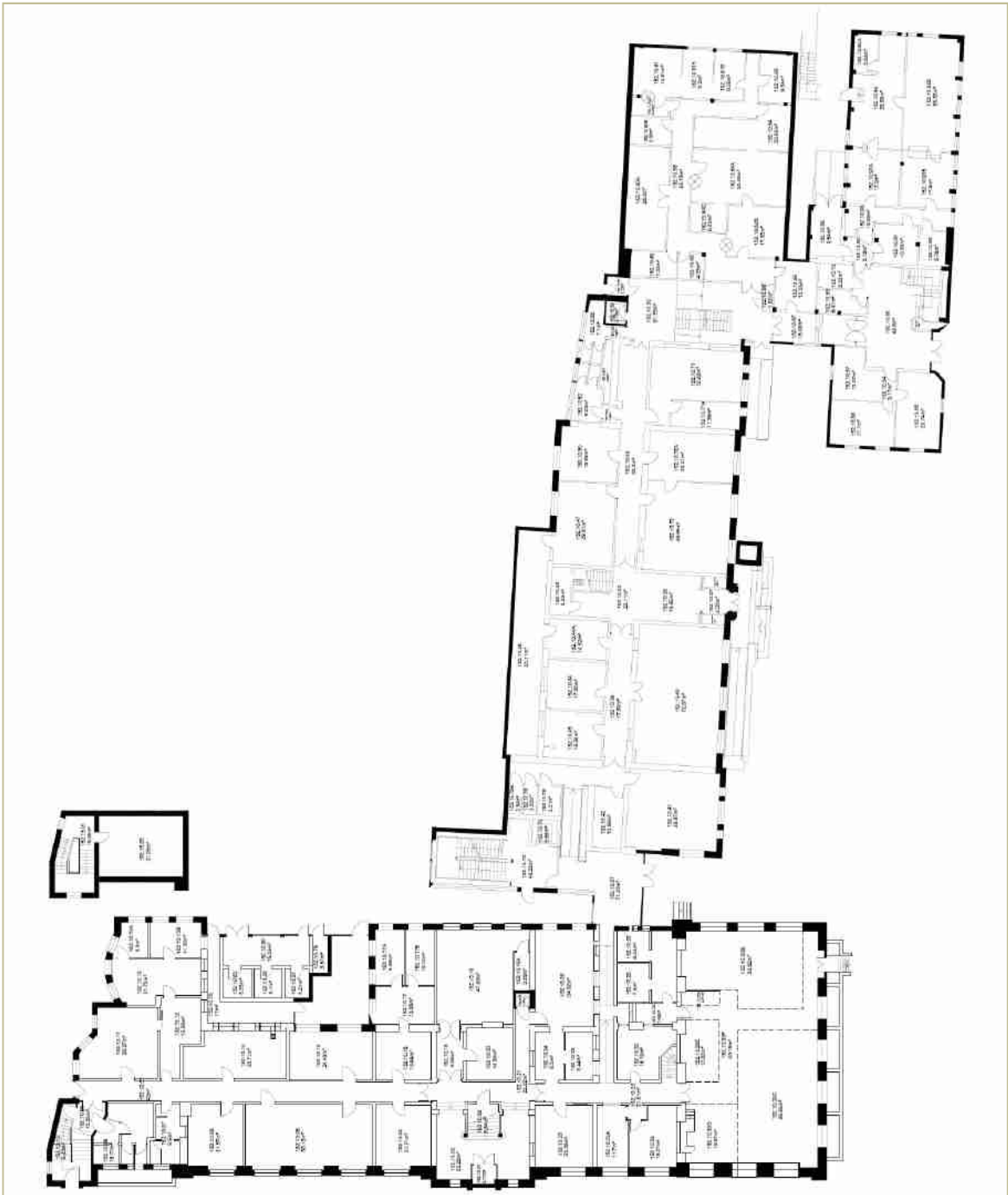
The Dyson Perrins Laboratory, Building #152		
SIGNIFICANT FEATURE	✓	Further Information
General:		
External decorations		p.15, 27-31, 36-37, 43
Any carved decorations		p.15, 27-31, 36-37, 43
Brickwork throughout		p.15, 27-31, 36-37, 43
Stonework throughout		p.15, 27-31, 36-37, 43
Windows and rooflights throughout		p.15, 27-31, 36-37, 43
Internal tiles		p.15, 27-31, 37-38, 43
Original benches		
External Elevations		
-Stone plinth and base		p.15, 27-31, 36-37, 43
-Brickwork including quoins		p.15, 27-31, 36-37, 43
-Porch including carved decorations, modillions, parapet, ionic columns, niche, and pediment		p.15, 27-31, 36-37, 43
-Pilasters		p.15, 27-31, 36-37, 43
-Cornice, dentils, and parapets		p.15, 27-31, 36-37, 43
-Windows and rooflights		p.15, 27-31, 36-37, 43
-Any carved decorations		p.15, 27-31, 36-37, 43
Internal Spaces		
-Internal stonework		p.15, 27-31, 37-38, 43
-Internal windowed porch		p.15, 27-31, 37-38, 43
-Half-height tiles		p.15, 27-31, 37-38, 43
-Original benches excluding modern tops		p.15, 27-31, 37-38, 43

**PRIOR TO UNDERTAKING ANY REPAIRS OR ALTERATIONS ON THE ABOVE-
LISTED ARCHITECTURAL FEATURES, CONTACT THE CONSERVATION
TEAM AT ESTATES SERVICES ON (01865) (2)78750**

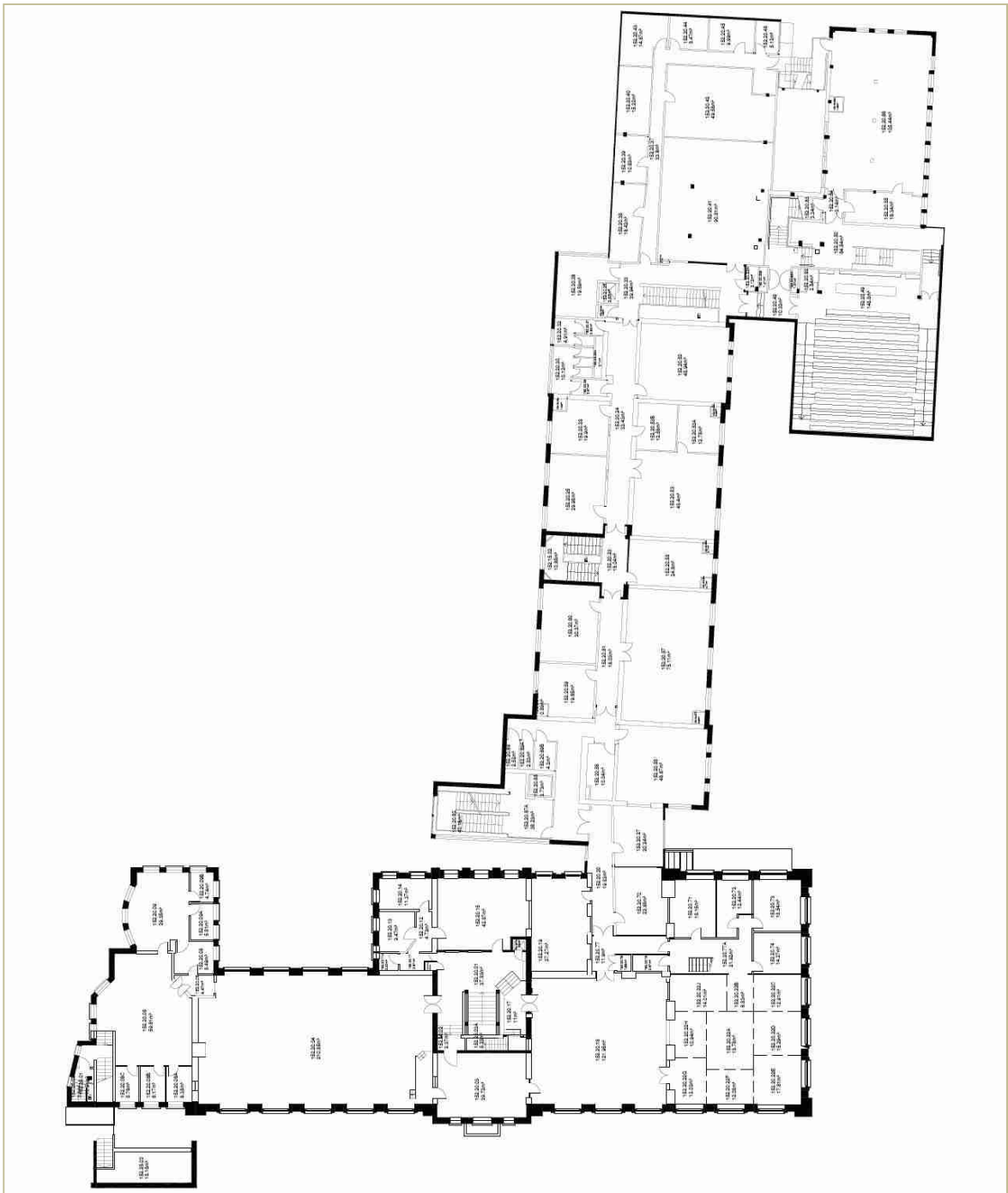
Appendix 4 Floor plans



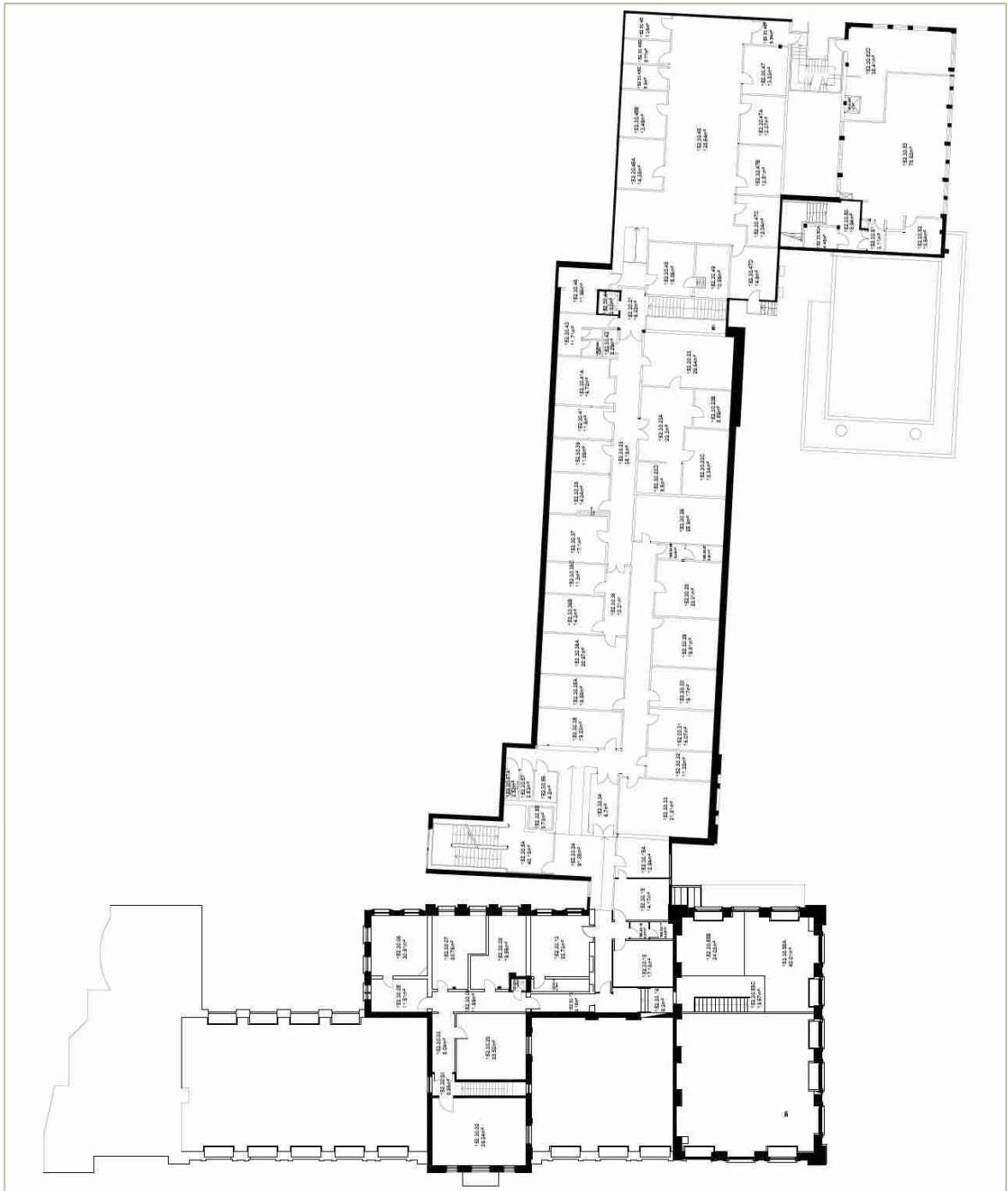
Basement plan with north at the top of the image



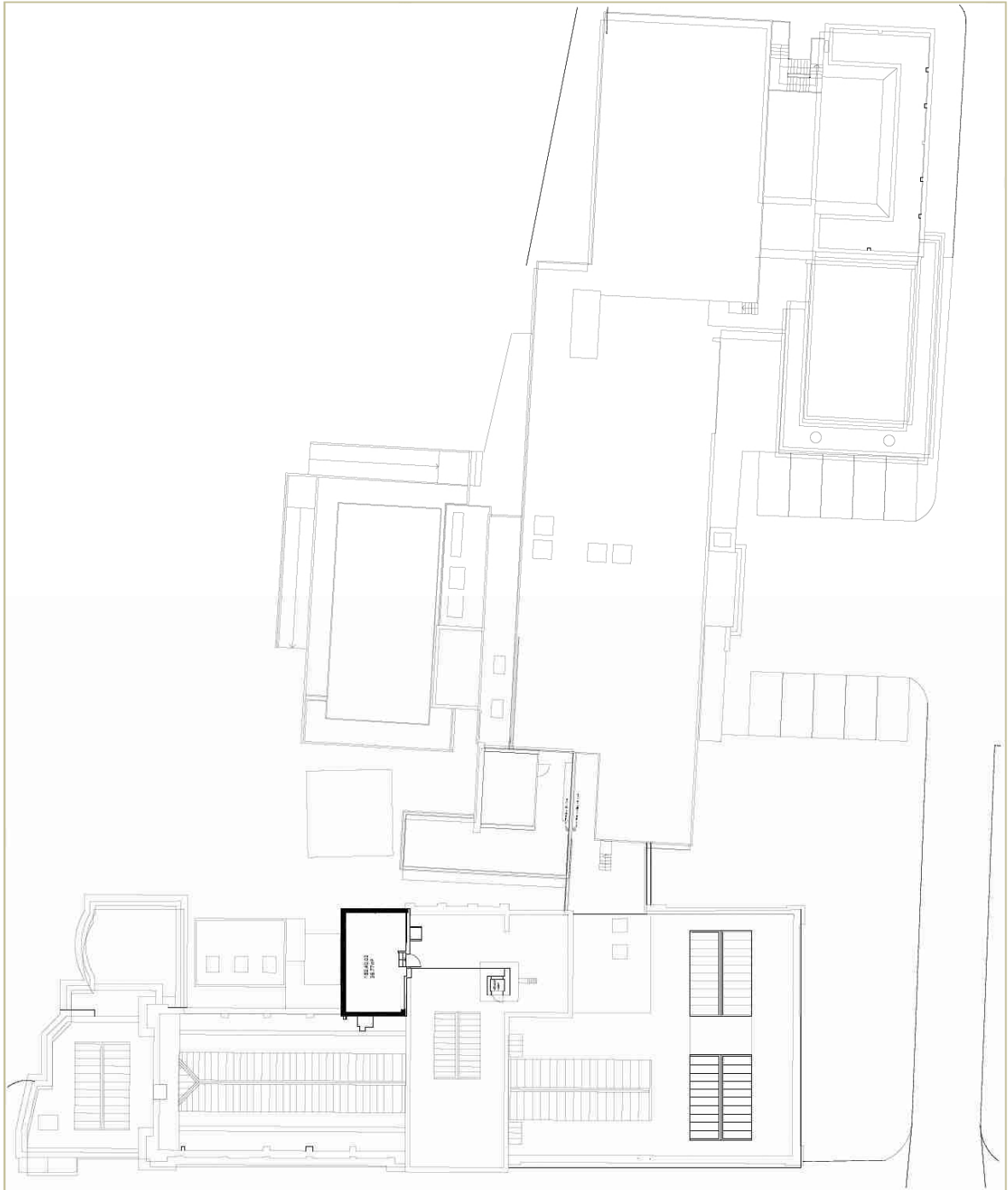
Ground-floor plan with north at the top of the image



First-floor plan with north at the top of the image



Second-floor plan with north at the top of the image



Third-floor plan with north at the top of the image

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ANNEXES

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8 ANNEXES

Annexe 1

Development of the University Science Area

- Deane and Woodward's University Museum was built in a neo-Gothic style in 1855-60.
- The original Clarendon Physics Laboratory was constructed to the northwest of the University Museum in 1867-69. This was extended in 1946-58 but the structure has since been enveloped by the Robert Hooke (old Earth Sciences) Building.
- The Observatory was built to the northeast of the area in 1873-75, and expanded with a lecture room and library in 1877-78.
- The original Inorganic Chemistry Laboratory was constructed in 1877-79, and enclosed within the courtyard of the later departmental buildings constructed 1954-60.
- The original Physiology Laboratory was built to the northeast in 1884-85 (and a new wing added in 1907).
- The Pitt River's Museum was constructed to the east of the University Museum in 1885-86. It was extended southwards in 2006.
- Human Anatomy was constructed immediately to the east of the Museum in 1891-93, and rebuilt in 1954-56.
- Thomas Graham Jackson's Radcliffe Science Library was constructed to the south of the University Museum in 1898-1900 and subsequently extended in 1933-34.
- The Department of Zoology (now housing Atmospheric Physics) and Stevenson and Redfern's Morphology Laboratory were constructed to the north of the University Museum in 1898-1901.
- The Pathological Laboratory was constructed in 1899-1901. This building was handed over to Pharmacology in 1927.
- The School of Forestry and Rural Economy was constructed to the east in 1906-8, and extended in 1912.
- The Townsend Building was built as the Electrical Laboratory in 1908-10.
- The Dyson Perrins Laboratory to the south of the Museum was constructed in 1913-16. This was extended northwards from its eastern end in 1939-40 and 1956-58.
- The Sir William Dunn School of Pathology was constructed at the furthest eastern end of the site in 1926, and was extended by Sir Leslie Martin in 1967-9.

- The New Clarendon Laboratory (now the Lindemann Building) was built to the north of the Townsend Building in 1939.
- Physical Chemistry was constructed to the east of the site in 1939-40, and extended in 1958-59.
- Physiology was constructed to the east of the Electrical Laboratory in 1949-53.
- Microbiology was constructed to the northeast of the Museum in 1959-60.
- The Pharmacology Building was constructed directly to the east of the Museum in 1959-61.³⁴

³⁴ All these dates are reliant upon: Pevsner, N., and Sherwood, J., *Buildings of England: Oxfordshire* (Oxford, 1974) 277-9; and Howell, P., 'Oxford Architecture, 1800-1914' in Brock, M.G., and Curthoys, M.C., (eds.), *The History of the University of Oxford*, Vol. VII (Oxford, 2000) 763-777.

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