



PHYSICS 175



FROM THE WEST WING TO THE KANE 1849- 1970: IMPROVING FACILITIES FOR PHYSICS

Dr Margaret Lantry, University Curator,
Heritage Services, Buildings & Estates

Queen's College Cork

Founded under The Colleges Act (1845) along with the Queen's Colleges at Belfast and Galway. Site purchased at Cork in 1846.

The Main Quadrangle consisted of:

- Lecture rooms
- Museums: Zoological, Geological, Physical & Mechanical, Art & Antiquity
- Library and administrative offices
- Accommodation for the President and Vice-President in the East Wing.

Queen's College Cork opened on 30 October 1849 for matriculation and scholarship examinations.

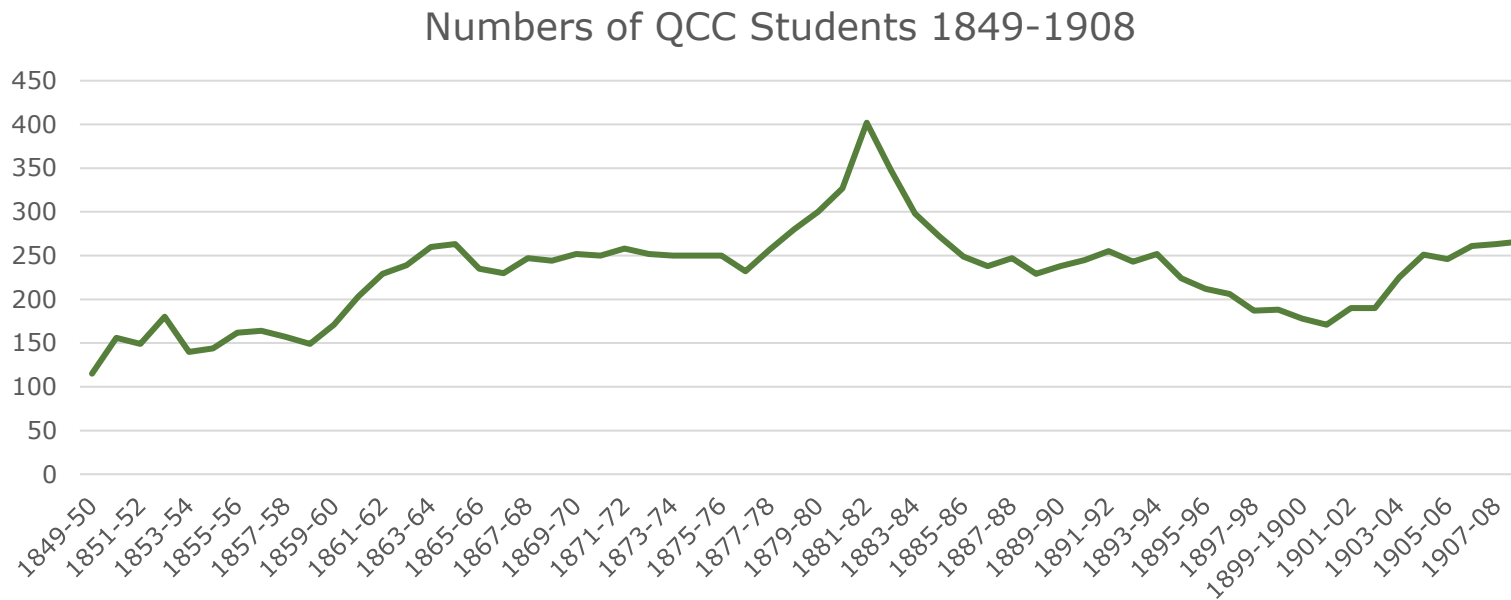
The first lectures at QCC were delivered on 7 November. In Physics (then called Natural Philosophy), Prof. George Ferdinand Shaw delivered the first lectures from 1849 to 1855.

Science at Queen's College Cork

There were three Faculties and two Schools in 1849:

1. Faculty of Arts – this included Divisions of Literature and Science
2. Faculty of Medicine
3. Faculty of Law
4. School of Engineering, Civil and Mechanical
5. School of Agriculture

**No of Students
in 1849 was
115, aged
between 14 and
27**



Science at QCC in 1849/50

Bachelor of Arts course – no BSc degree yet

FIRST YEAR.

The Greek and Latin Languages.
The English Language. *One Term.
The Modern Languages.
Mathematics.

SECOND YEAR.

Logic. A course of one Term.
Chemistry.
Principles of Zoology and Botany.
The Higher Mathematics, or
The Greek and Latin Languages.

THIRD YEAR.

Natural Philosophy.
History and English Literature.
Physical Geography.
Metaphysics,* or
Jurisprudence and Political Economy.*

The courses in **Civil Engineering** included the subjects of:

1st Year: Mathematics, **General Physics**, Chemistry,
Drawing, Surveying and Mapping;

2nd Year: Higher Mathematics, Practical Mechanics,
Mineralogy and Geology, Drawing and Civil Engineering,
including the Principles of Architecture.

Students in **Medicine** also had to study **Natural Philosophy** (Physics).

In 1908 the subject became 'Experimental Physics'.

Subjects provided in 1878/79

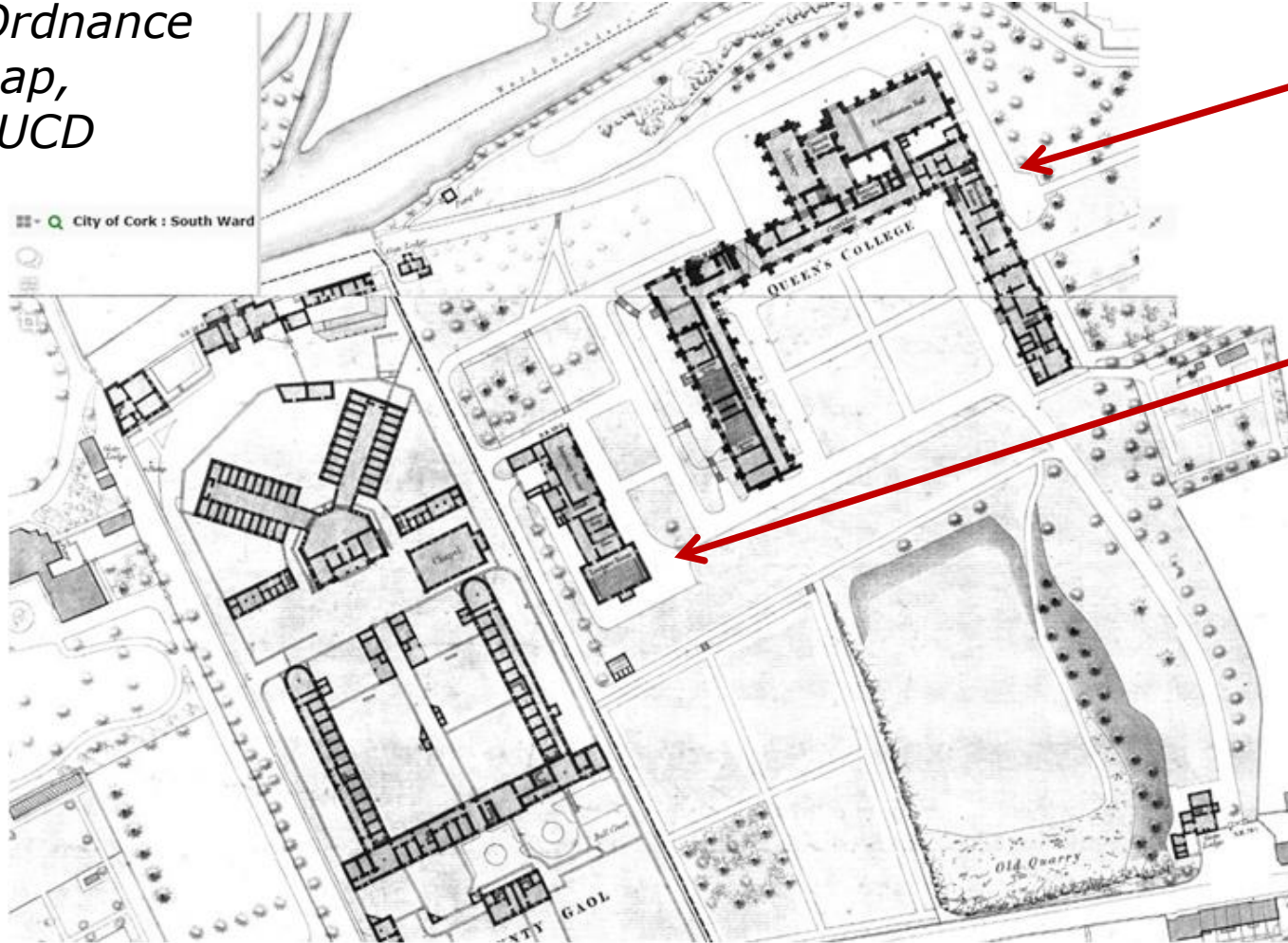
	No. of Lectures on each Subject.	Total No of Students attending the Classes in each subject.
Greek,	234	32
Latin,	213	29
English Language,	28	21
" Literature,	48	14
Modern History,	40	9
French,	189	98
Logic,	65	17
Metaphysics,	55	2
Political Economy,	32	6
Mathematics,	297	59
Natural Philosophy,	301	98
Chemistry, Theoretical,	83	82
" Practical,	89	54
Geology and Mineralogy,	30	1
Zoology and Botany,	62	60
English Law,	75	8
Jurisprudence and Civil Law,	48	7
Anatomy and Physiology,	136	86
" Practical,	148	159
Medicine,	58	25
Surgery,	63	35
Midwifery,	62	25
Materia Medica,	62	47
Medical Jurisprudence,	38	27
Engineering,	300	25

In 1878/9 the five most popular subjects were (in order):

- Practical Anatomy – 159
- Natural Philosophy (Physics) – 98**
- French – 98
- Theoretical Chemistry – 82
- Anatomy & Physiology – 86

The early College in 1869

Source: Ordnance Survey map, online at UCD website.

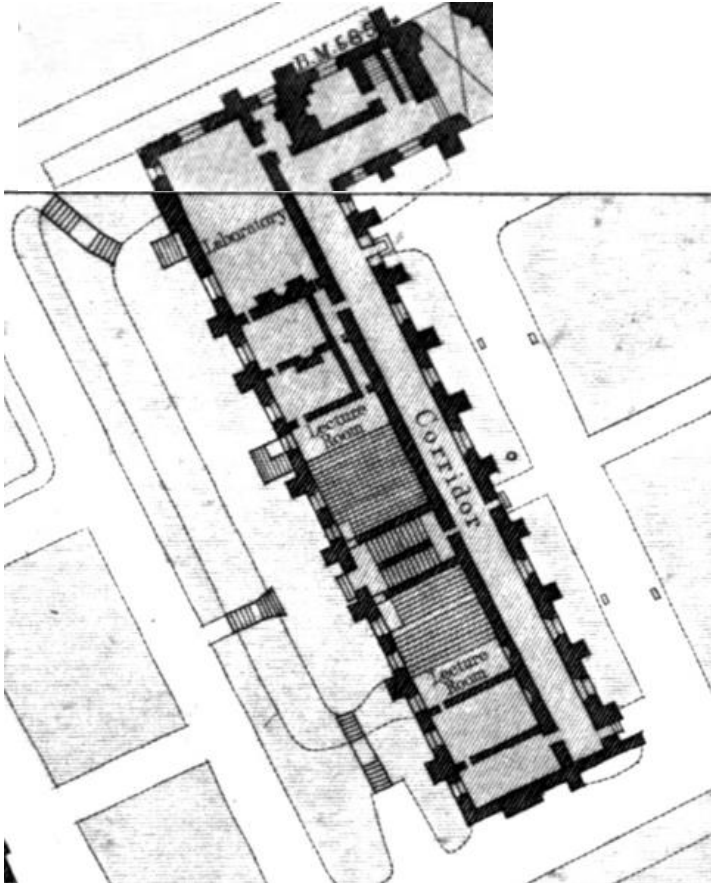


The Main Quadrangle was finished in 1849.

The Clarendon Building, later known as the Medical Building and more recently as the Windle Building, now The Hub, was built between 1850 and 1880.

There were two entrances to the campus: from the Gaol Walk on the north side, and from the Gaol Road (later renamed the College Road) on the southern side. These entrances are still in use today.

Accommodation for Physics in the Main Quadrangle



All subjects, except for Medicine, were taught in the West Wing until about 1910.

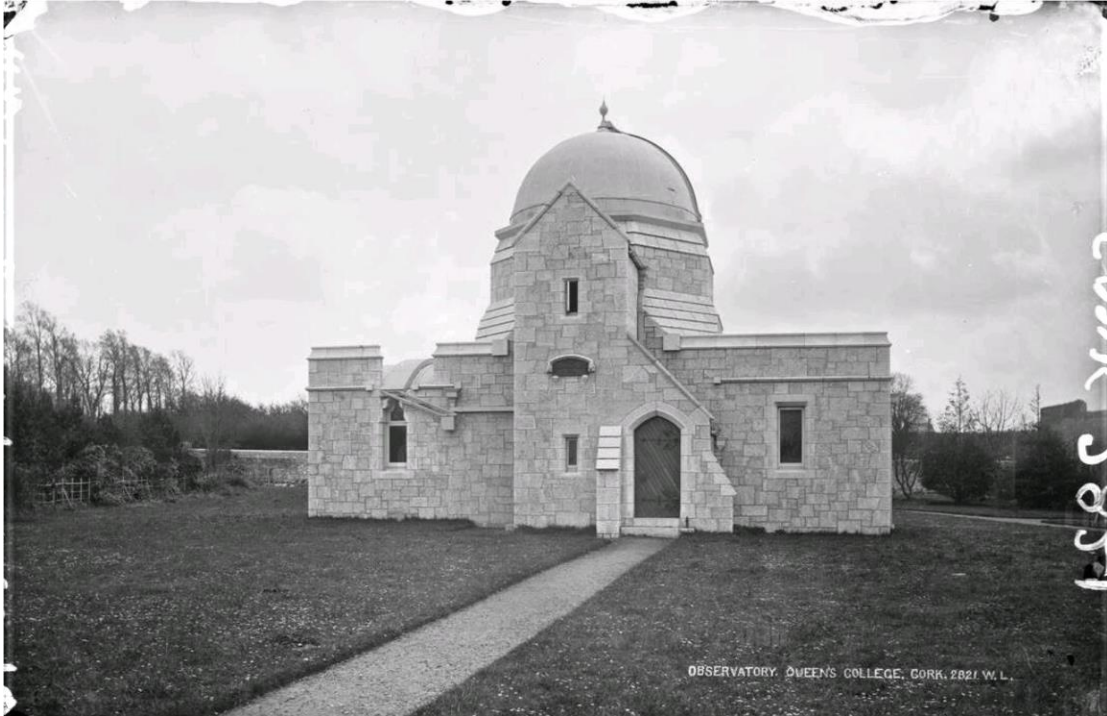
Two lecture theatres, now W5 and W6

One laboratory, in present-day W9

Engineering in the basement

In 1911: "Of practical work in Physics there was none, and all conditions seemed to have been fulfilled if the students had been shown a few electrical and magnetic experiments. ... up to the present, there has been positively no Physical Laboratory in which work could be carried on" – Sir Bertram C. A. Windle, President

The Crawford Observatory



1880: the third building on campus

Queen's College, Observatory, Cork City, c.1900
*Lawrence Photograph Collection, National Library of
Ireland: L_CAB_02821*



The Observatory today

<https://www.ucc.ie/en/heritage/places-and-spaces/crawford-observatory/>

The College in 1893

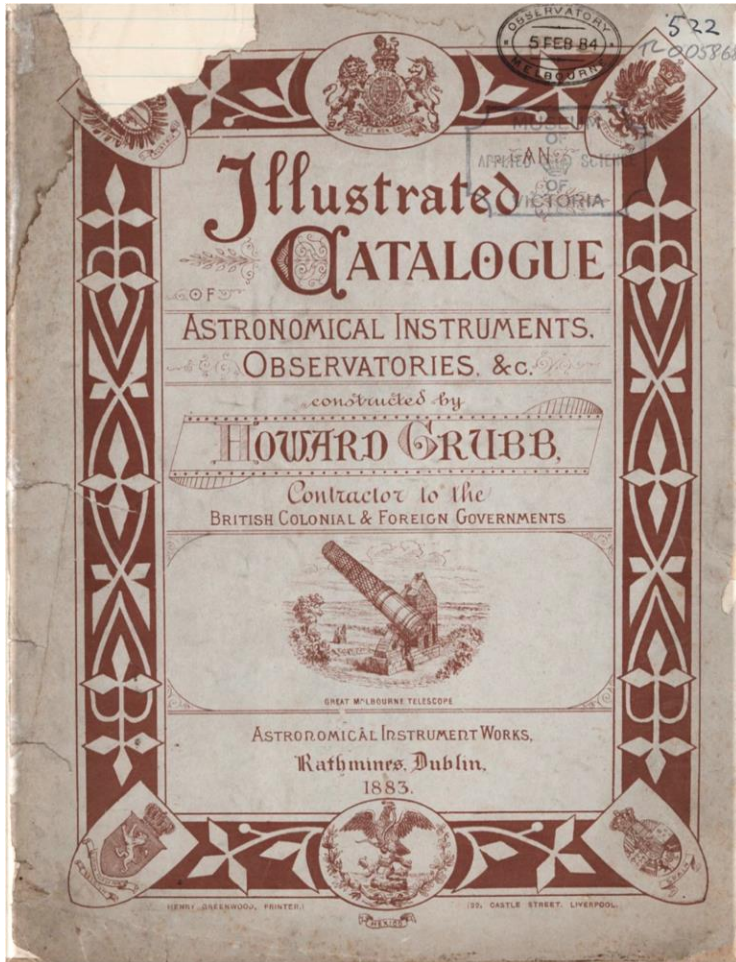
*Source:
Ordnance Survey
map, online at
UCD website.*



The Crawford Observatory is at the SW corner of the campus.

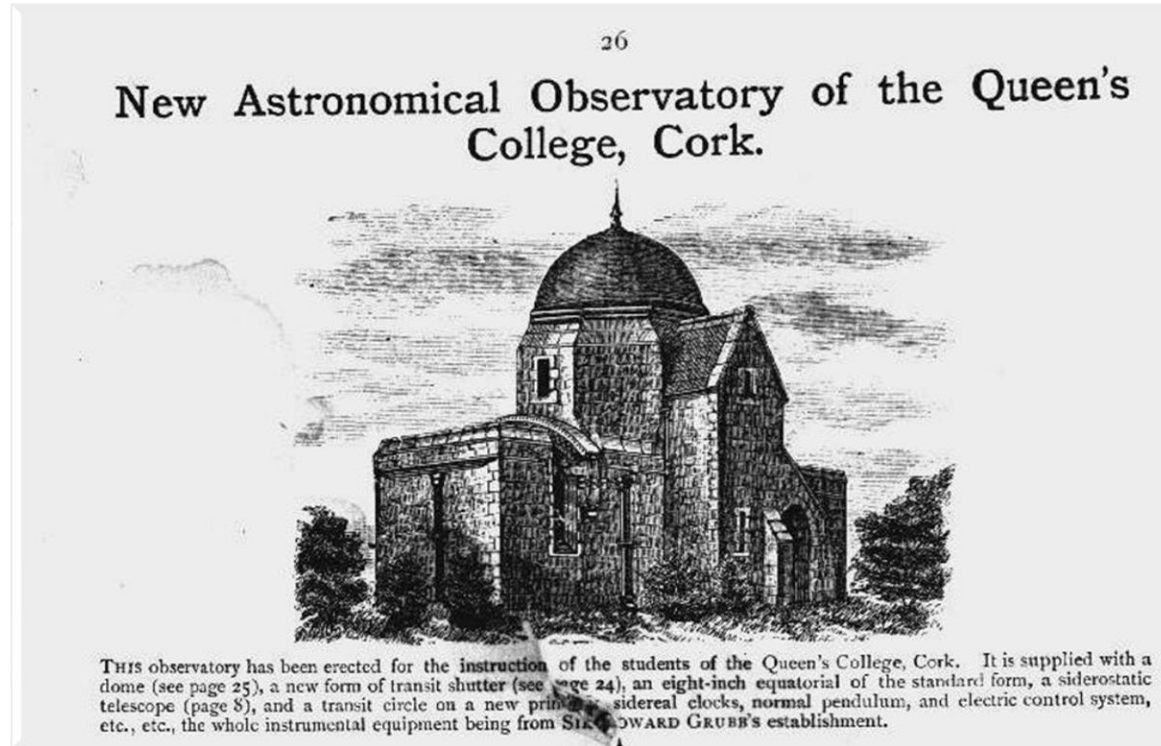
There's also the buildings at the corner of what is now College Road and Donovan's Road – a hall of residence for students, called Berkeley Hall (later Honan Hostel), which opened in 1884. Although a private institution, the boarders were QCC students.

Howard Grubb's Catalogues



Grubb's Catalogue (1883): at Melbourne Observatory, where he installed a telescope.

Everything was provided by Sir Howard Grubb – the complete observatory supplier.



Grubb's Catalogue (1888): engraving showing the new observatory at Cork. In the text underneath, Grubb tells the reader about the facility he installed there: the dome; "a new form of transit shutter"; the 8-inch equatorial telescope of the standard form (there was also a deluxe version) and siderostatic telescope; as well as the transit circle, sidereal clocks, a pendulum and the electric control system.

Photos of the Moon from the Crawford Observatory 1915

PHOTOGRAPHS OF THE MOON.



From a photograph by Philip E. Belas.

Crawford Observatory, University College, Cork.

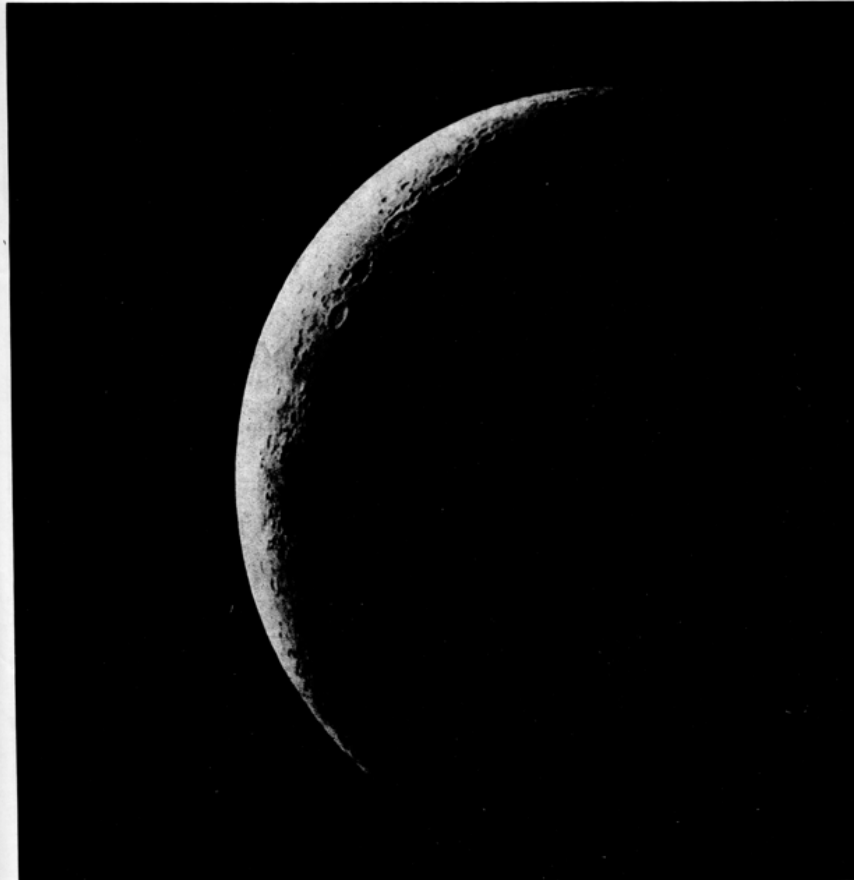
FIGURE 178.

The Moon, 22nd February, 1915. Age 8.6 days.

Refractor: Aperture, 13-in.; F.L., 11-ft.; Expos., $\frac{1}{2}$ -sec.

As seen in an inverting telescope.

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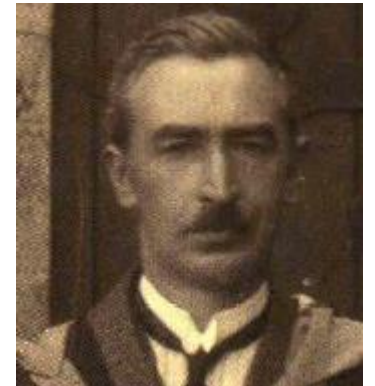
FIGURE 179.

The Moon, 18th January, 1915. Age 3.1 days.

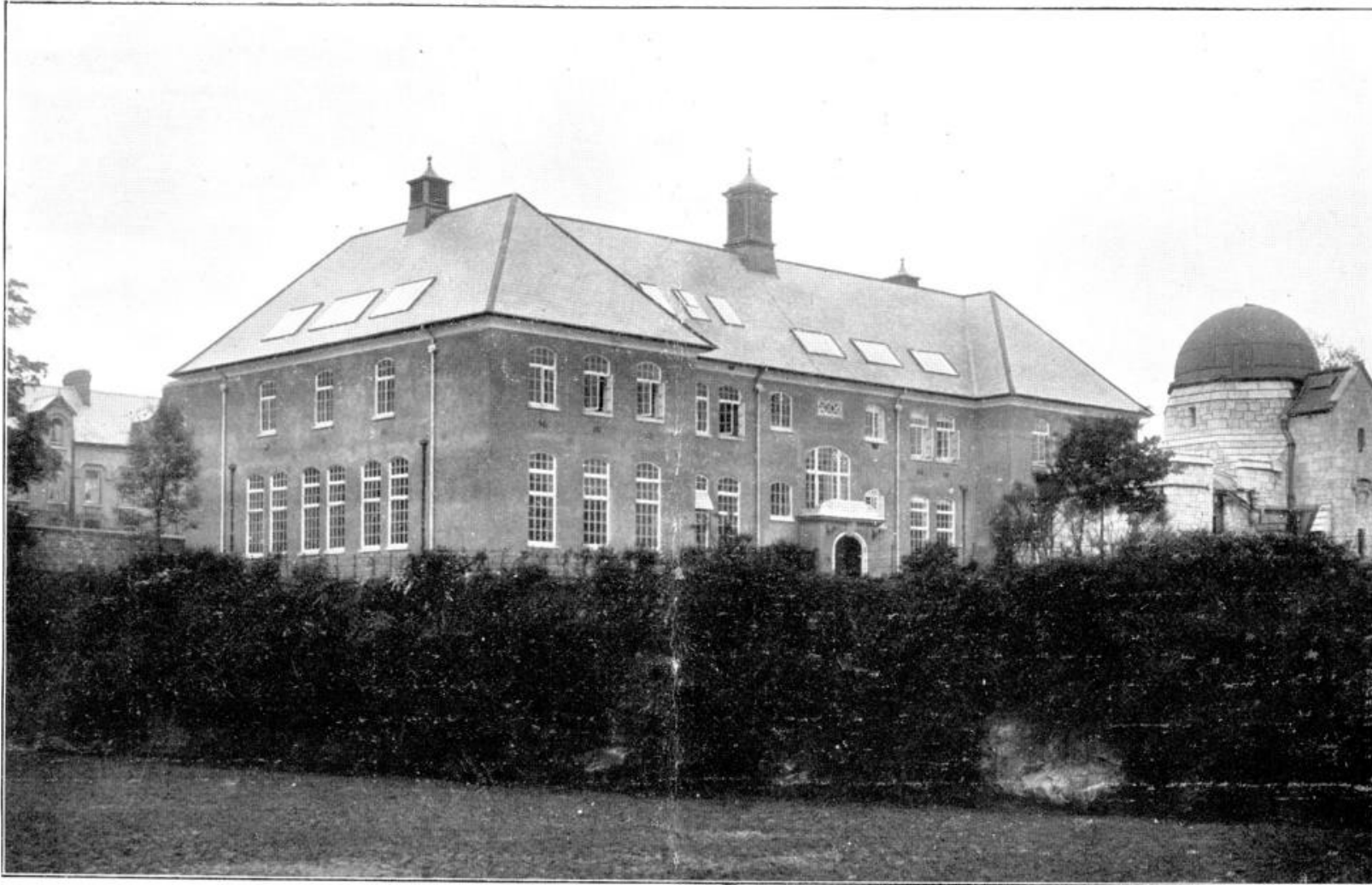
Refractor: Aperture, 13-in.; F.L., 11-ft.; Expos., $\frac{1}{2}$ -sec.

As seen in an inverting telescope.

Philip E. Belas BA
(1906), MSc (1916),
ARCSI – first lecturer
in Physics (died
1937).



Big changes – for Physics (and Chemistry) – for UCC



CHEMICAL AND PHYSICAL LABORATORIES (EXTERIOR).

1910 – footprint of 9,576 sq feet.
Cost of £12,000

Electric lighting (generated by the Tramway Co.), gas, heating and ventilation systems
Floors of reinforced concrete.

Internal furniture made by UCC workshop.

Vacated by the Departments of Chemistry and Experimental Physics during 1970-71.

Now the Iris Ashley Cummins Building, used by Civil Engineering.

"The ground floor, which measures 133 feet by 72 feet, will be devoted to physics. Provision has been made for a large laboratory 30 feet 6 inches by 68 feet 6 inches, with portions shut off for special work in magnetism and optics; also for smaller rooms for electrical work, apparatus for the workshop, and small classes. The physics lecture theatre is in the centre of the ground floor, partly over the entrance hall. A notable feature of the building is its floors, which are all constructed in reinforced concrete. Those over the large physics laboratory and the lecture theatre are believed to be among the largest, if not quite the largest, in this country. They are absolutely fireproof and also perfectly rigid and sound proof. "

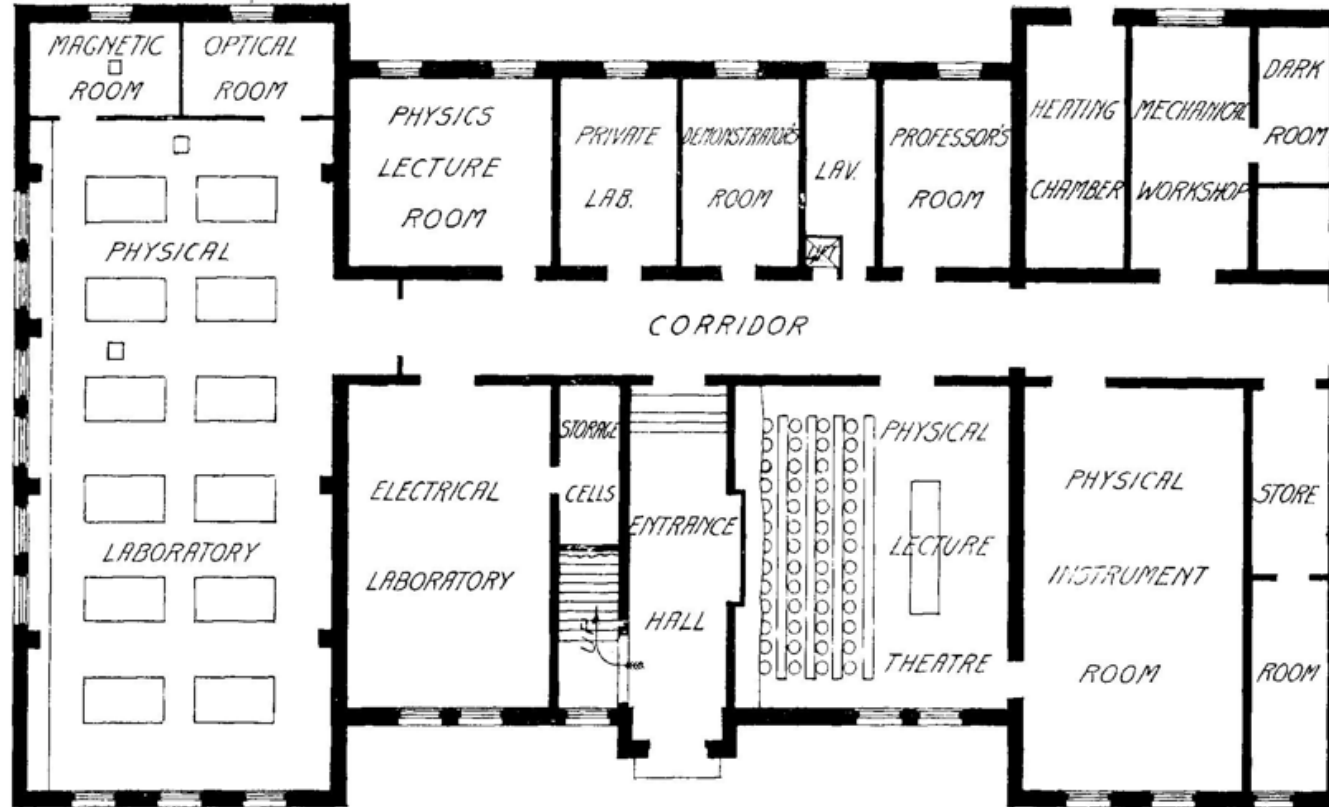
"Entering the building, passing through the hall, and turning along the corridor on the ground floor to the left, the first room is the Electro Technological Laboratory. This contains a motor generator, with a switch board for transforming the town supply from 460 to 100 volts. In connection with this is a storage battery of 34 cells for supplying current for the arc lanterns of the Lecture rooms and for physical experiments. It is controlled from a switch-board of the latest type. In this room will be a collection of instruments of a commercial type, so that standardising and testing can be carried out.

Next to this is the General Physical Laboratory, occupying the eastern end of the ground floor. The furniture consists in the main of 12 very fine teak and pitch pine benches, affording accommodation for 48 students. There is also a very long bench of a similar character down the east wall. The total accommodation of this room is therefore about 70, ample space being allowed for each student. Adjoining it are separate rooms for the study of magnetism and optics respectively. In the Magnetism room all iron has been replaced by copper and brass. The building itself contains comparatively little iron, certainly not enough to affect the instruments in this room.

Opening off the corridor on the south side are (1) a Classroom accommodating about 25, (2) Research room, (3) Lecturer on Technology's Private room, (4) Professor of Physics' Private room, and (5) Workshop and Dark room.

Returning along the corridor on the north side are (1) Unpacking room, (2) a very spacious Apparatus room, and (3) Physics Lecture Theatre, capable of accommodating over 100 students. A noteworthy feature of this room ... is the seating arrangement. Each student has his or her individual seat, with a space on each side, so that in order to let another pass he has only to rise and stand back between the seats. At the back of the Lecture table is a specially prepared surface serving as a lantern screen. The Lecture table is fully equipped with water and electrical current at high and low voltage. The Lecture table will be unusually large, so as to provide ample space for the arrangement of instruments. The windows are fitted with light-proof blinds, so that the room can be completely darkened. This room, as well as the others, is provided with an efficient system of artificial ventilation by which fresh air is heated over radiators on admission, and vitiated air can be withdrawn either at ground level or at the top."

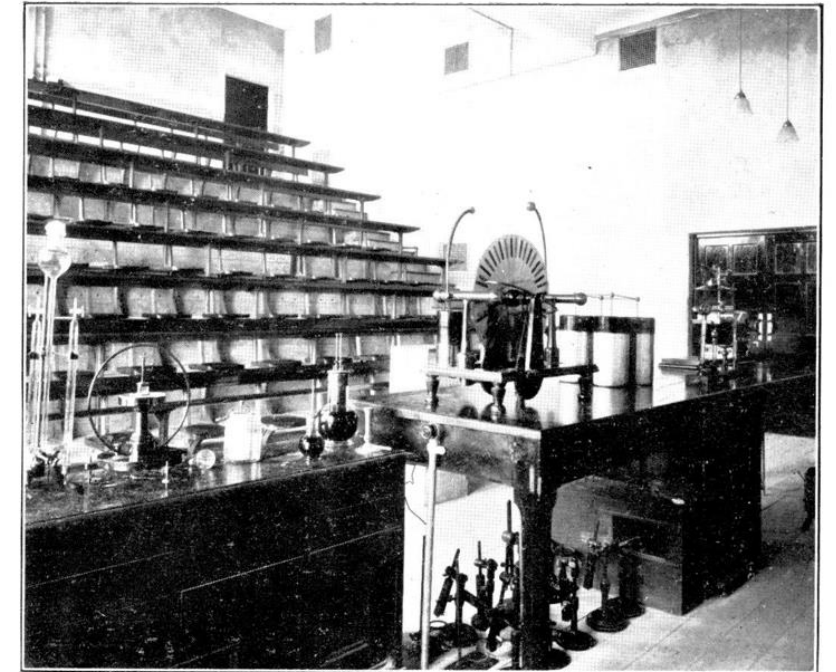
Facilities in the new building for Physics



GROUND FLOOR PLAN

CHEMICAL AND PHYSICAL LABORATORIES.

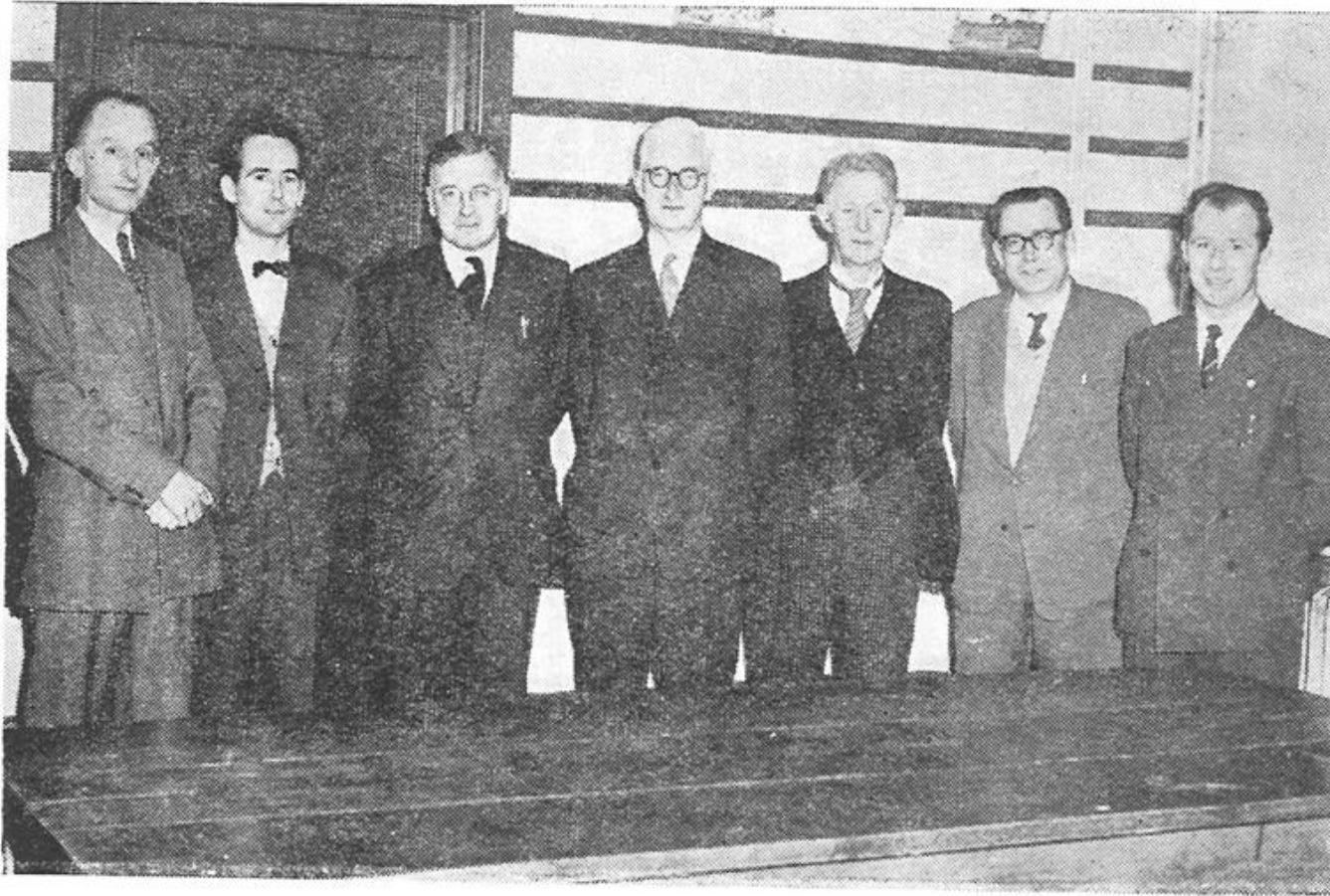
Laboratory for 70 students.



PHYSICAL LECTURE THEATRE.

Lecture theatre for 100 students.

Funding awarded with new Science Building in prospect



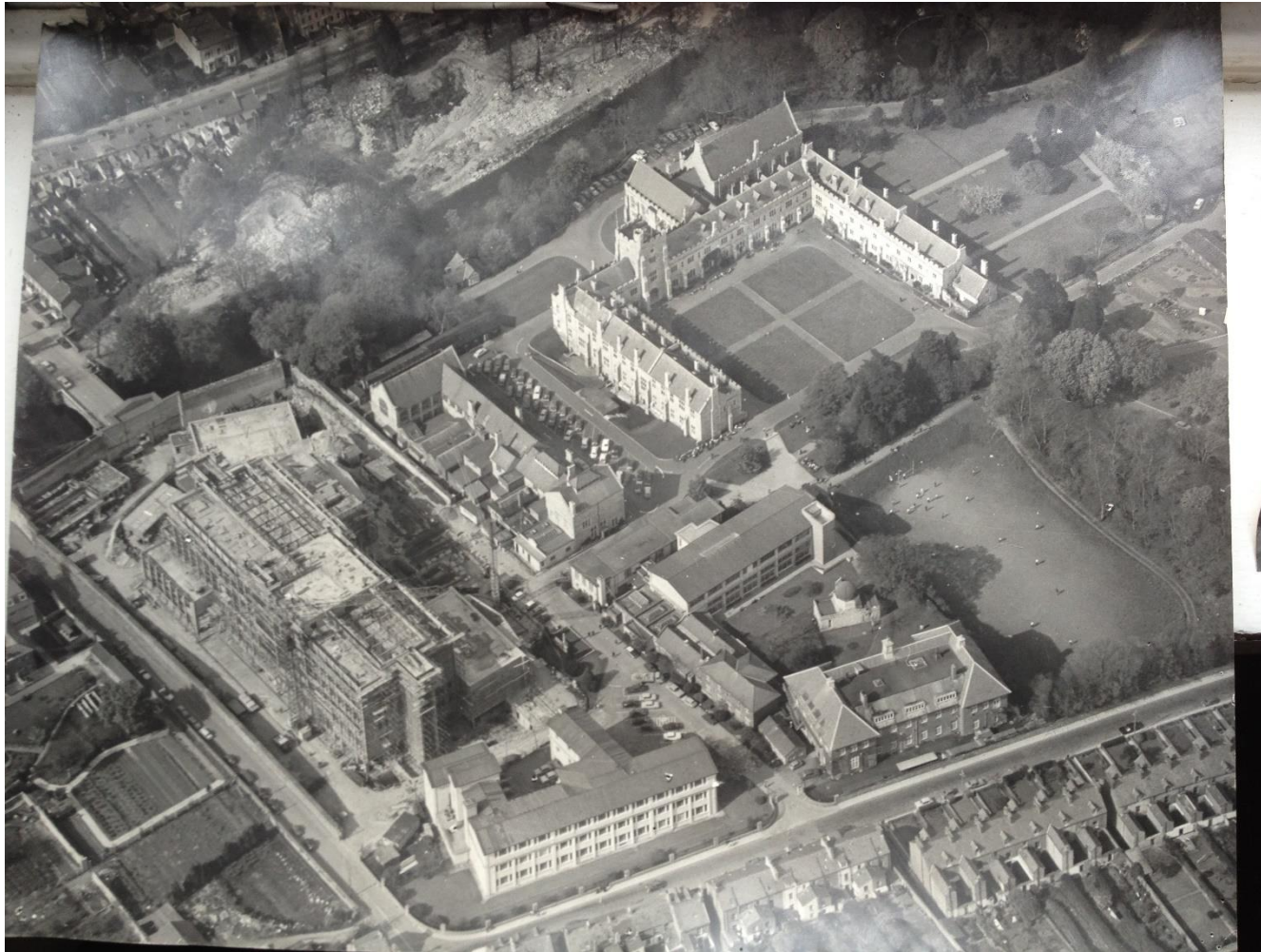
NUCLEAR ENERGY RESEARCH.— Members of the Science and Engineering faculties at U.C.C., with Professor J. D. Craggs of Liverpool University, at his lecture on "Thermonuclear Reactions", on March 24th, 1960. From Left to Right: Dr. E. F. Fahy; Prof. C. T. G. Dillon; Prof. J. D. Craggs (Liverpool); Prof. J. J. McHenry; Prof. F. Teago; Prof. J. Dooge; Dr. R. Sexton.

By the late 1950s it was seen that a new building was needed for the Faculty of Science. In 1956 the Atomic Energy Cooperation Agreement, 'Atoms for Peace', with the USA was signed.

In February 1961 funding was announced for research in nuclear energy provided by an amended agreement approved by the Dáil.

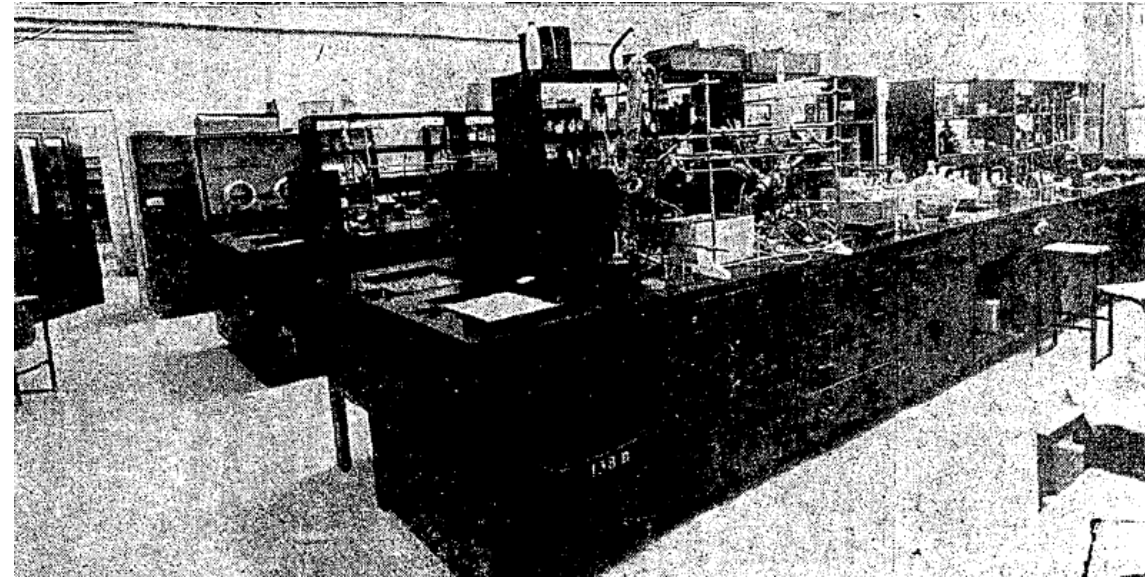
A grant for equipment and fuel was made, estimated cost £70,000. The equipment was to be housed in the new Science Building and included radioisotope research equipment for Biochemistry, Botany and Dairy Chemistry departments and also research and training equipment for Physics. It was specially designed for teaching purposes.

The New Science Building



Aerial view of new Science Building under construction.
Photo in University Archives

Tendered 1966
Open 1970/71



Evening Echo, 10 November 1970

Kane (Science) Building opens 1970/71



Chemistry & Physics Building:
New Science Building:

1,989 sq m / 21,409 sq ft
13,217 sq m / 142,273 sq ft

Housed the Departments of Chemistry, Experimental Physics, Mathematics, Mathematical Physics, Geography, Geology, Statistics (and temporary Drawing Offices for Engineering until Cummins Building was vacated and adapted).

No. of full-time students 1970/71:
3,593, of 375 in Science

As well as providing multiple laboratories, students could now be accommodated in large lecture theatres – G1 (206), G2 (112), G18 (112) and G19 (212) – there were also computer facilities, the Science Library and the Kampus Kitchen.