

THE MARCONI SITE, NEW STREET

CHELMSFORD

ESSEX

LEVEL 3 HISTORIC BUILDING RECORD



Essex County Council
Field Archaeology Unit

March 2013

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THE MARCONI WORKS, NEW STREET
CHELMSFORD
ESSEX
LEVEL 3 HISTORIC BUILDING RECORD

Client: Bellway Homes Limited (Essex)

FAU Project No: 2580

NGR: TL 7080 0735

OASIS No: 146638

Date of Fieldwork: November 2012 – February 2013

1.0 INTRODUCTION

A programme of historic building recording was undertaken by the Essex County Council Field Archaeology Unit (ECC FAU) at the former Marconi Works, New Street, Chelmsford, prior to the demolition of the factory, factory extension, weigh house, cottages, Marconi House and Building 720, and the refurbishment/ conversion of the Grade II Listed 1912 Building, the Power House and the Water Tower. The work was commissioned by Bellway Homes Limited and carried out in accordance with a Design Brief prepared by the Essex County Council Place Services (Historic Environment) team and a responding written scheme of investigation produced by ECC FAU.

Guglielmo Marconi is regarded as the father of radio and the earliest factories of his Wireless and Signal Co. Ltd were located in Chelmsford. The first, established in 1899, was situated at Hall Street, housed in a converted silk mill. In 1912 the New Street works were constructed and were the first purpose built wireless factory in the world, as well as the site of the first official public radio broadcast in 1920. In the late 1930s the works were expanded and a new office building was added. Additional buildings were constructed through the subsequent decades, particularly in the 1950s and 1960s. Following various mergers the site came under the ownership of Selex Communications in 2001, who vacated the site in 2008. Since closure the factory buildings have been redundant, although they have been maintained for security and safety purposes. Major structures survive on the site from all periods of Marconi's ownership, representative of architectural styles ranging from the Edwardian Baroque of the 1912 Building via the 1930's Modern Movement design of Marconi House and the 1937 Factory through to the futuristic design of the 1950's 720 Building.

Copies of the report will be supplied to the client and ECC Place Services (Historic Environment) for inclusion in the Essex Historic Environment Record (EHER). The archive will be deposited with Chelmsford Museum. An OASIS online record has been created at [Thttp://ads.ahds.ac.uk/oasis/index.cfm](http://ads.ahds.ac.uk/oasis/index.cfm) and is accessible via the ADS website.

2.0 BACKGROUND

2.1 Site location and description

The Marconi site is located in the modern centre of Chelmsford (fig. 1). The site comprises an irregular shaped plot, located adjacent to the railway line which forms the southern boundary. The northern boundary is defined by Marconi Road and the east by New Street. To the west of the site lies a large office block, Eastwood House. The Marconi Works includes offices, laboratories, factory accommodation, ancillary buildings and some housing, ranging in date from 1912 to the 1960s (CAU 2006). Much of the area is built over and the remainder comprises car-parking, roadways, yard areas, landscaping and verges. The site is situated on land which rises gently from east to west but there are noticeable drops in level between Marconi Road and Eastwood House, and the site (CAU 2006), suggestive of levelling in the past.

2.2 Planning background

The site has a long planning history, only the more-recent aspects of which are discussed below. Two applications (12/01463/DEM & 12/01462/LBC) for *the demolition of all buildings to the west and south of the water tower: to include; the factory, factory extension, weigh house, cottages, Marconi House and 720 building (to exclude the listed 1912 building, the Power House and the water tower)* were submitted to Chelmsford City Council in September 2012). These works are a precursor to comprehensive redevelopment plans for the site, a planning application (12/01789/FUL) for which was submitted in December 2013; namely, *redevelopment of the whole site to provide a mixed use scheme comprising 437 new residential units (Class C3) contained within buildings extending to between 2 & 7 storeys in height, conversion of existing buildings & construction of new commercial floor space to provide office (Class B1), retail & other non-residential uses (Class A1, A2, A3, A4, D1 & D2); Provision of new entrances into the site & pedestrian/cycle routes & linkages to the wider area; New public spaces, hard & soft landscaping & associated parking provision & infrastructure (including works to protected trees).*

Given the importance of the site in relation to the development of the radio industry, ECC Place Services (Historic Environment), in their capacity as archaeological advisors to Chelmsford City Council, recommended that an English Heritage Level 3 standard historic building record should be completed prior to the demolition and refurbishment works. This recommendation was made in line with guidance contained in the National Planning Policy Framework (DCLG 2012) and also followed recommendations made for previous applications relating to the site.

The application for Listed Building Consent was approved subject to conditions on the 3rd January 2013. Condition 2 states:

No demolition/ conversion or preliminary groundworks of any kind shall take place until the applicant has secured the implementation of a programme of building recording and archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the local planning authority. All recording work should be conducted by a professional recognised archaeological contractor.

Reason:

To ensure that adequate archaeological records can be made in respect of the site in accordance with Policy DC21 of the Adopted Core Strategy and Development Control Policies Development Plan Document.

The above development proposals follow on from a series of previous applications for the redevelopment of the site submitted in 2006 and 2008 (e.g. 08/00450/OUT), which have generated a wide range of supporting information including an Historic Buildings Impact Assessment (Burgess 2006), an archaeological desk based assessment (CAU 2006) and an archaeological test pitting exercise (CAU 2007).

2.3 Aims and objectives

The purpose of the historic building survey was to record the buildings to English Heritage Level 3 standard (2006) prior to demolition. Primarily this meant addressing the following aspects of the buildings on site, using a descriptive and analytical narrative supported by drawings and a full photographic record: plan form; materials and method of construction; phasing; internal spatial layout, room function and status; original décor; finishings, fixtures and fittings.

As specified by the Design Brief (ECC Place Services 2012), the aim of the survey was to use the 2006 Impact Assessment (Burgess 2006) as a basis for the recording and development of the site and bring it up to a Level 3 record standard.

2.4 Description of work

Recording works were undertaken throughout the various stages of soft-strip and demolition works, beginning with an initial programme of recording across all available parts of the site prior to any demolition works commencing. Further visits were made as asbestos removal progressed through the buildings, often accompanied by the removal of suspended ceilings and other modern partitions and coverings, revealing previously obscured architectural and construction details. As a result of the presence of asbestos initial visits concentrated on the 1912 Building, while the Power House was the last to be recorded. Some small areas, notably on the first floor of the 1912 Factory, were unsafe and could not be recorded in detail though photographs have been included in the report where possible.

As part of the survey external and internal architectural descriptions were made and plans of all but the modern buildings were created. Since the only up-to-date floor plans were of the buildings to be retained most of the plans used in the survey that form the basis of this report are largely based on earlier, historic plans and a 1998 survey reproduced in the Impact Assessment (Burgess 2006). Due to their size, annotated building plans are reproduced in this report at a scale of 1:200 and in some cases 1:400, while paper copies at 1:100 are provided in the archive.

A series of digital photographs were taken externally and internally, as well as 35mm black and white photographs of main external and representative internal views. Specific shots were taken of any original fixtures and fittings or architectural detail. A representative selection of photographs is reproduced at the back of the report as plates 1-146 and the remainder can be found in the archive. Comprehensive external and internal photographs depicting the Marconi buildings still in use before the majority of the works closed may be found in the 2006 Impact Assessment and offer more detail of the later offices and working areas than the 2012 survey.

Buildings have been assigned a unique ID number for ease of reference and numbered and phased block plans are provided to illustrate the development and layout of the factory complex and show significant modern additions (fig.1), which are referenced throughout the text. . A phase plan is included as figure 2, though some of the dates are approximate and largely refer to dates on plans reproduced in the Impact Assessment.

3.0 HISTORICAL BACKGROUND AND DEVELOPMENT

A wealth of information on the history and development of the radio industry in Chelmsford and the New Street Works can already be found in the public domain, particularly W.J. Baker's *A History of the Marconi Company* (1970) and a Level I-II survey and report by the Royal Commission on the Historical Monuments of England (RCHME) on the *Buildings of the Radio Electronics Industry, Chelmsford Essex* (Cocroft & Menuge 1999). The following section therefore presents a brief overview of the available material.

Guglielmo Marconi is regarded as the father of radio and the earliest factories of his Wireless and Signal Co. Ltd were located in Chelmsford (Cocroft & Menuge 1999). Marconi arrived in England in 1896 in search of commercial backers for his inventions, having been unable to raise support in his native Italy. In London, in March of that year, he lodged the first wireless telegraphy patent, a 'holding patent' for a wireless telegraphy system, and then on the 2nd June 1896 a full specification for the world's first practical wireless telegraphy system. The following year a group of financiers, led by his cousin Henry Jameson-Davies, approached him with an offer to form a company promoting his inventions and in July 1897 Marconi was granted British patent No. 12039 and the Wireless Telegraph and Signal Company was founded with the intention of acquiring Marconi patents on an international scale. Early experiments were conducted on the Isle of Wight and across Poole Bay in Dorset, followed by a cross-Channel broadcast in 1899 from Wimereux, near Bologne, France, to the South Foreland Lighthouse, St Margaret's Bay, Dover. Marconi's association with Chelmsford began in 1899 when the Wireless and Signal Co. Ltd established its first factory for the manufacture of wireless telegraphy equipment at Hall Street, housed in a converted silk mill (Cocroft & Menuge 1999, ECC FAU 2012).

By the late -19th century Chelmsford was already closely associated with a number of new industries, including Crompton's Arc works in Anchor Street (ECC FAU 2008a, 2008b) and the Christy Brothers Broomfield Road Ironworks, both early pioneers in the production of electrical components, and the American-owned Hoffman Manufacturing Company, who established a precision steel bearing factory in New Street in 1899. It has been conjectured that the presence of these businesses associated with the early electrical industry may have been one of the factors that attracted Marconi to the town (Cocroft & Menuge 1999).

The field of maritime communications proved to be an initial area of success. In 1899 wireless telegraphy was adopted by the British Royal and Merchant Navies. On 12th December 1901, a wireless signal was successfully transmitted over a distance of 1800

miles across the Atlantic from Poldhu, Cornwall to Signal Hill, St John's, Newfoundland, Canada. By the end of 1902, Marconi had established permanent and reliable wireless stations at Glace Bay in Nova Scotia, Canada and Cape Cod, America. By 1903, the Company had built a number of stations on shore and many merchant ships had been fitted with its wireless sets, which had to be rented from the company and were operated by Marconi personnel. In January 1909 wireless telegraphy saved over 4,000 lives when it was used to call for rescue when the SS Republic collided with the SS Florida off the coast of Nantucket.

In March 1910, the Marconi Company put forward a plan to link the many parts of the British Empire by a world-wide chain of 18 high power wireless stations including shore-based and ship-based stations, charging half the cost of cable telegraph rates. It was suggested that this 'Imperial Wireless Scheme' would be of great strategic advantage, providing ships of the Royal Navy with a global means of communication unhampered by vulnerable landlines and submarine cables.

Chelmsford Borough Council building control plans from this time show that Marconi's were constantly improving and expanding the Hall Street site, by the end of June 1909 it was busy with orders in hand worth £87,000 (modern day equivalent in excess of £4m), and its cramped nature no doubt dictated their decision to move to new premises at New Street in 1912. However, the research and development facilities were retained at Hall Street after production was moved to New Street until at least 1919, before they too were re-established on the New Street site (ECC FAU 2007).

Thirteen years after opening the Hall Street factory the Marconi company had become the world's leading supplier of radio equipment and was able to establish an integrated head office and factory on New Street, which remained the company's headquarters throughout. The factory and offices, designed by Dunn and Watson, were constructed over a seventeen week period between February and May 1912 and were ready for inspection in June by the suitably impressed delegates of the International Radiotelegraphic Conference on 22nd June 1912 (CAU 2007, www.marconicalling.com). The changeover of operations between Hall Street and New Street took place in a single weekend. The new works initially comprised the offices fronting onto New Street, behind which were the east-west orientated factory building, railway sidings and sheds, cut into the slope immediately to the south of Marconi Road. To the west of this, as depicted on the 1919 Ordnance Survey map, in the area extending up to Glebe Road, were two large radio masts (CAU 2007), possibly associated with the development of the Chelmsford 5XX high-power long-wave station, which was inaugurated in

June 1924 and facilitated better and much wider signal coverage to a large part of the country (www.marconicalling.com).

Marconi sets were in regular use with the Royal Navy by the outbreak of the Great War (1914–18), which saw important developments in wireless technology. The most important of these were the replacement of spark gap transmitters with Poulsen arc transmitters in naval sets and in turn the development of equipment using valves, which permitted a microphone to be attached to the transmitter and headphones to the receiver, allowing voice telephony (Cocroft & Menuge 1999).

In the aftermath of the war radio research and development concentrated on public broadcasting and the Marconi company was closely associated with new developments. On the 15th June 1920 the first official public radio broadcast was made from the New Street Works by the opera singer Dame Nellie Melba. However, broadcast ranges were limited and in an effort to boost transmission a powerful central long wave transmitter was proposed, with an experimental version erected at the New Street works in 1924. The decade between 1924 and 1934 saw a massive increase in public interest in radio, with radio licence holders multiplying over that period from 600,000 to 6,600,000 (Cocroft & Menuge 1999).

Consequently, the 1912 Office building and staff canteen and mess rooms were extended in 1929, while the factory was extended in 1936, and a new factory unit constructed in 1937, reflecting the growing role of the company as a leading supplier of radios, telephones, telegraph and wireless equipment to the armed forces, government departments overseas, civilian aerodromes and the general public. In the 1930's a new five storey office and laboratory block, Marconi House, was erected, no doubt connected with increasing public demand as a result of the expanding domestic radio industry and military requirements stimulated by the mid-1930's rearmament programme, as a second war in Europe seemed increasingly likely. A site plan from 1937 (fig. 4) provides a good representation of the internal layout of the time and labels many of the functional areas.

During the Second World War (1939 – 1945) major advances in wireless technology included the development of radio direction-finding equipment or radar, an area in which Marconi had been undertaking pioneering work from the mid-1930's. Radar played a fundamental role in the Battle of Britain and was subsequently developed in a variety of forms including airborne variants allowing night fighters/ fighter/ bombers to engage enemy aircraft, ships and U-boats at night, ranging equipment to guide anti-aircraft guns on to their targets, and radar-guided bombing devices (Cocroft & Menuge 1999). Marconi, as one of the leading electrical

manufacturers, was approached by the Air Ministry to design and produce new radar sets and to meet this new demand a research centre was established at Great Baddow. The Chelmsford factories manufactured a variety of equipment during this time but concentrated in particular on the production of naval sets. Aerial photos of the New Street site from 1945 show both the factory sheds and Marconi House with camouflaged painted roofs. However, both the Marconi Works and the nearby Hoffman Ball Bearing Works were damaged by enemy action during the course of the war, with the factory hit by a bomb in 1941 that killed 17 people (CAU 2006). As a result of the risk of air-raids, shelters were constructed for staff immediately to the north of the railway embankment forming the southern boundary to the site, although these had been demolished or filled in by the mid-1950's to make way for Building 720 (CAU 2006)

In the late 1940's, as the Cold War set in, the existing wartime radar system was substantially upgraded to meet the threat from faster moving jet aircraft. Figure 5 shows the first floor layout of the site in 1948. During the following decade the Marconi company was not only a supplier of equipment but also undertook research and development work in conjunction with the Telecommunications Research Establishment. Consequently, the late-40's and 1950's were a period of significant growth for Marconi, reflected in the expansion of a number of the companies existing factories and the acquisition of new sites (Cocroft & Menuge 1999). At New Street expansion took the form of a new factory space and canteen, Building 720 - designed by Taylor and Collister in 1950, the latter element replacing the existing 1912/1929 mess rooms, which were converted to working areas.

Defence contracts continued to form a major component of the company's work in the 1960's but as one of the pioneers of military radar technology Marconi was well placed to further develop the technology for commercial uses including civil Air Traffic Control radar systems and mercantile marine radar (Cocroft & Menuge 1999)

Later developments in the history of the site include the addition in 1965 of a new canteen to Building 720 and the construction of an office block, Eastwood House, in the 1980's. GEC Marconi was badly affected by the end of the Cold War in 1989 and its inevitable impact on the defence industry, which led to redundancies and closures throughout the company. British Aerospace (now BAE) acquired the defensive arm in 1999, transferring many of the New Street operations to Eastwood House. Part of the company was sold to Selex Communications, who acquired the site in 2001 for a short period of time. In 2008 Selex relocated to new premises in Basildon and the factory was closed. However, the Marconi

name lives on as Alenia Marconi Radar Systems, which is part of BAE, which occupies Eastwood House.

4.0 SITE OVERVIEW

The Marconi works is a large four-hectare site containing a wide range of buildings representing the development of the company over the past one hundred years, from 1912 to its closure by later owners of the site, Selex in 2008. The main manufacturing and office areas form a conjoining mass of interconnecting buildings of different phases and architectural styles with other structures to the north and south and a large expanse of open ground to the west (fig. 1 and cover plate). There are two vehicle entry points on New Street; at the north (goods entrance) and south ends of the frontage, past the control room, and a pedestrian entrance leading between through the former gatekeeper's house and mess rooms through turnstile gates. (fig. 1).

The main staff entrances to the car parks on the west side of the site were on Glebe Road, before Eastwood House came under the ownership of BAE Systems, and Townsford Street, where the cycle entrance was also located (fig. 1). A disused flat-roofed brick gatehouse still stands on the boundary with Eastwood House that monitored traffic in and out of the premises (fig. 1). From the car park, staff would enter the premises through another set of turnstile gates.

The buildings are concentrated on the east side of the site, with the earliest occupying the New Street frontage. London architects Dunn and Watson were commissioned to design all parts of the 1912 factory and offices. The principle structure is the two-storey Edwardian Baroque style office range (1) which is Grade 2-listed and contains the early offices, showrooms, design areas and luncheon rooms. Standing slightly to the south of the offices and separated by the New Street entrance is the former gatekeeper's house and mess rooms (2), whose architecture is more 'domestic' in style. Internal access between the offices and gatekeeper's house is via a covered bridge over the gated entrance. On the other side of the control room is the staff entrance off New Street. Extensions added to the rear of these buildings in the 1920s for extra offices and dining areas are in sympathetic form but plainer than the main elements and were designed by A. R. Wiseman of Chelmsford (Burgess 2006).

The 1912 factory (3) joins the west side of the office range and is a formidable structure sympathetic to but more functional in its architecture style, with blind arcading and north-lit factory roofing, also designed by Dunn and Watson. Later first floor offices have been inserted over the years. Loading bays face the main north entrance that originally linked to a railway siding on the north side of the factory. In later years the track was removed when it became the main goods entrance. A rather ornate almost Baroque church-like water tower, built over four levels, also faces onto the former siding (fig. 1).

On the opposite side of the north entrance are the 1912 weigh house and well house, amongst a partly-derelict range of single-storey 1930s and later outbuildings (10), including works offices and stores. These have an historic rather than architectural interest. Behind and to the north is the 1912 pond/reservoir (fig. 1), supplying the factory's sprinkler system (Burgess 2006). Cottages (9), built in an Arts and Crafts style on the north-east corner facing onto New Street, are the only example of worker's housing by Marconi. Further to the west are the boiler house and turbine room (8). Other structures standing to the west of building 8 (fig. 4) no longer remain.

At the west end of the 1912 factory is the 1936 factory extension (4), which is built in a simpler early-20th century factory-style to the main factory, designed to increase the working area inside. Some later first floor offices were added along the outer walls. The Modern 1937 factory extension 5 is contemporary with factory 4 but their style is very different. Extension 5, which is built onto the south side of the original factory, is a large two-storey structure in International Modern Movement style designed by William Walter Wood of Chelmsford, whose main features are the long horizontal elevation and towers. The ground floor accommodates factory space and the first floor offices, linked to the 1912 offices and Marconi House.

Marconi House (6) is another significant 1930s Modern structure, designed in 1939 by the London firm of Chamberlain and Willows to be the worldwide headquarters of Marconi. This is a large five-storey U-shaped office block with a tall rotunda that dominates the view of the site from the south and east and contains some significant Art Deco interiors. The building joins the 1936 factory extension to the north and is linked to the 1937 Modern factory by covered first floor bridges that span the main factory entrance on this side.

Opposite the prominent Modern buildings are tarmac areas for vehicle access and parking spaces and Building 720 (7). Building 720 was designed by Taylor and Collister in 1950 to provide further factory space and a new canteen. It was built over two storeys with a

mezzanine floor and its modern factory aspect has a distinctive 'wavy-roof' profile. A new flat-roofed canteen building was constructed in 1965 adjoining the south-west corner, which has no architectural interest (fig. 1).

Site boundaries are marked by original railed fencing on the prominent New Street façade and otherwise by modern railed fencing and security gates of no historic interest. A short length of brick walling stands either side of the boiler house and turbine room around the fuel tanks. There are no green spaces. Bicycle sheds are located along the southern boundary against the railway embankment and a large car park and pedestrian access to the south-west. Eastwood House, occupied by BAE Systems that incorporates surviving elements of Marconi, stands to the west of the factory on land formerly occupied by Marconi, but outside the current development area.

5.0 BUILDING DESCRIPTIONS

5.1 General Description

There are several surviving historic buildings on the site and these have been numbered for ease of reference in figure 1 and are summarised below. As far as possible, their titles are the same as those used in the Impact Assessment (Burgess 2006). Dates ascribed to the buildings refer to architects plans reproduced in Burgess and not necessarily the actual construction date, though they are assumed to be the same or soon after. The historic buildings included in this survey are:

- 1912 Offices (1), extended in 1929
- Gatekeeper's house and mess rooms (2), 1912, extended in 1929
- 1912 Factory (3) including water tower
- 1936 Factory extension (4)
- 1937 Modern factory (5)
- Marconi House, 1939 (6)
- Building 720, 1951 (7) and modern canteen (1965)
- 1912 Power house (8)
- Roadside cottages (1912) (9)
- Weigh house and outbuildings along the northern boundary (10)

Building numbers have been assigned for ease of identification and are marked on figure 1. Individual room numbers or group numbers covering groups of rooms by type or function,

have also been assigned and are included on the plans at the back of the report. The main surviving historic structures are described fully and modern (post 1960) structures are summarised briefly to complete the record.

Where pertinent, original room function is indicated in the figures, as well as the text. Modern partitions are shown in grey and do not necessarily show doorways. Numbers are assigned to existing spatial layout but not necessarily to modern offices or corridors. Some areas have had differing functions during the years and this is alluded to where apparent and illustrated in figures 3-5, which show original layouts from 1912, the 1930s and 1940s. More specific modern roles, if different, are alluded to in the text, and taken from a modern GEC Marconi site plan found with a batch of old architects drawings supplied by the client.

The following descriptions are based on observations made during the survey, information in the earlier Impact Assessment report and, where relevant, List descriptions. In general, historic exteriors survive well and in some cases the original spatial layouts remain too, but much internal fabric has been altered and modernised over the decades. Therefore this report describes the current, not necessarily historic, layouts, though historic layouts are alluded to where possible.

5.2 1912 Office building (1)

The 1912 offices represented the public façade of the company and occupied a prominent position on the New Street frontage. Designed in contemporary Edwardian Baroque style, it has a decorated central entrance bay, wings each side and a clock tower above. Here the prominent personnel had their offices, presumably including Marconi himself, shared with supporting roles supplied by typists, accountants, etc. It also housed the showroom, drawing offices and senior staff luncheon rooms.

The offices were Listed Grade 2 in 1997 (List entry number 1031538) and reads as follows:

Offices and laboratory, now offices. 1912 by W Dunn and R Watson. Brown brick with limestone dressings and red clay tile window heads. Hipped slate roof with four brick ridge stacks with stone banding. Edwardian Baroque style.

Two storeys; 3:5:1:5:3 fenestration with slightly projecting central bay and projecting side wings. There is a central domed clock turret with weathervane. Central bay has open pediment set over pilasters with stone banding set on balcony with wrought iron balustrade and ground floor with panelled double doors. First floor has cartouche over 36-pane sash set in Gibbs surround.

Flat red brick arches over sashes with glazing bars; dentilled stone cornice; stone banding to quoins and wings. Similar 6 bay side elevations. Attached low brick wall with painted railings and opposite the entrance brick gate piers surmounted by iron lamp holders.

INTERIOR: Fine bolection-panelled entrance hall, with decorative wrought-iron balustrade to cantilevered staircase, modillioned cornice and Baroque-style plasterwork to ceiling. Half-glazed doors from hall to rear passages which give access via semi-circular arched screens to offices with plaster cornices.

HISTORY: The world's first purpose-built radio factory. This building also housed the laboratory where Marconi carried out his development work.

[W J Baker, "A History of the Marconi Company"1970.]

Please note, specific references to laboratories have not been found along the front offices but testing stations are recorded between the offices and 1912 factory.

The descriptions below also include the 1929 office/drawing office extension.

5.2.1 External description

The 1912 office adopts a symmetrical linear north to south plan form with a central entrance bay, uniform side wings and projecting bays at either end. Brickwork is in English-bonded 'brown' bricks and the exteriors are fenestrated with multi-pane sash windows.

East elevation

The main elevation (plates 1 & 2) employs 6/9 sash windows, with those on the ground floor being slightly longer. Those in the north wing, containing the ground floor showroom have longer 9/9 sashes for extra illumination. All have flat red tiled heads (rather than bricks) and codestone sills. Windows to bays 4, 7, 11 and 14 are flanked by single-light five-pane sashes in the manner of tripartite sashes (Burgess 2006).

The entrance doors in the central bay are mahogany and flanked by a pair of two geometric leaded casement windows behind wrought iron screens, that light the entrance lobby (plate 3). Above the doors the name Marconi's is etched in gold lettering, below the tall window that lights the formal staircase inside.

North elevation

The north elevation originally accommodated the ground floor showroom with drawing office above and linked to the factory on both levels. This side comprises six bays and was deeper

than the south side, which was only three bays deep before the extension was added. The central bay is occupied by an arched doorway giving access to the main axial corridor inside. Originally this entrance contained leaded semi-glazed wooden doors and fanlight (Burgess 2006), since replaced with a modern security door. Ground floor fenestration to the east of the doorway continues around the showroom but changes to shorter 6/6 sashes to the west to accommodate the ramp to the railway platform that follows the factory wall (Burgess 2006). These more closely-spaced windows light the old Oil Test Room. Those windows on the first floor are uniform except for that on the east end which has been reconfigured to form a fan-lit semi-glazed fire door with access to a metal fire escape (plate 4). Fans have been inserted in the top panes of the windows on the two west bays that light the former print room. A large skylight occupies the middle roof space of the drawing office.

South elevation

Before the south elevation was extended it was a three-bayed symmetrical elevation with sash windows and a hipped roof (Burgess 2006). The stone quoining on the south-west corner is still in evidence against the 1920s extension and in particular the red brickwork of a blocked 1920s doorway, into which a toilet window was inserted when the offices were converted to the hospital block (plate 5). Above it is a modern timber-clad bridge linking to the former gatekeeper's house, which has been adapted in various forms and is more fully described under the Gatekeeper's House.

The rear extension (plate 5) was built in 1929 by A.R. Wiseman of Chelmsford for the provision of extra ground floor offices and a second first floor drawing office and print room (Burgess 2006). Its architecture is similar to the main building but plainer in form. Windows are of metal rather than wood and either two or three panes by four, with the middle panes tilting by cords inside. They are mounted on codestone sills and have the same tiled flat arched heads. The roof is slated and hipped where it joins the main building and gabled to the west. Skylights light the former drawing office but roof ventilators were added when the offices were converted to kitchens and dining areas. At the bottom of the walls are slate-clad ventilators for the basement.

West elevation

The rear elevation has always been largely hidden by the factory and the single storey test room roof that linked the factory and office areas, and was hidden further when the 1920s extension was constructed. In its original form the three southern bays mirrored those of the front and the outlines of the windows remain inside in the adjoining wall, particularly on the ground floor. Access from the back was originally through a pair of leaded semi-glazed doors

that have been replaced by a modern concrete stair leading to the first floor only (fig. 6a & 6b). Windows on the top floor are regularly-spaced 6/9 sashes that are hidden from view. In the centre is a large geometric-form leaded transom and mullion window that lights the main stair and is a feature of the first floor landing (seen internally as plate 19).

5.2.2 Internal description

The interior was recorded in its modern day state prior to stripping-out, but further visits were able to record more accurate spatial layouts of rooms as well as details of historic interiors and features.

Original plans show similar floor layouts on both levels, with offices at the front facing the road joined to a single corridor to their rear that also provided access to the test room to the west, which formed part of the factory. Both elements were separated by two entrances at either end, to limit access between the working areas and administration areas.

Currently most of the floors are carpeted for offices and these overlie the original wood block floors that are only visible in the corridors. Office partitions have also been added, as well as false ceilings fluorescent lights and a modern sprinkler system. Corridors have plastic trunking systems in the upper walls and, with the mains electricity off, were festooned with lamps powered by generator.

The 1929 extension is also described in the following text.

Ground floor: 1912 offices

From the front of the building, the central main doors lead into the entrance lobby and hall (1 & 2). The small lobby is lit by two leaded casement windows and has a marbled floor in geometric design that continues into the main area. Semi-glazed six-panel doors separate the lobby from the entrance hall and stair (plate 6), which provides the most decorative interior. Carpet now obscures most of the marble floor around the stairs, but some of it was exposed in the survey. The walls of the room are decorated in mustard and pale yellow divided by a moulded dado (plate 7). Above the dado are regular leaf-bordered gypsum plaster panels and a heavily-moulded cornice to the west of the stairwell. At the base of the walls are dark-stained moulded skirting boards that continue along the corridors and the rooms on the east side. The stair itself has a wrought iron balustrade with fairly elaborate scrollwork decoration, mahogany handrail and a dog-leg form with a half-pace landing lit from the large central window over the main entrance.

An arched opening leads southwards from the hall into modern reception area 3, created by removing the original doorway surround into the enquiry office and the partition wall between the enquiry office and Works Manager's Office (fig. 6a). Decoration in here is similar to that of the main hall with its dado rail and ceiling panels, acting as an annexe between the two areas (plate 8). Carved consoles have been inserted either end of the removed partition wall to provide extra decoration and the fireplace has been removed. The former doorways out onto corridor 4 (south) have been blocked (fig. 6a).

Corridor 4 leads through dark-stained semi-glazed fire doors from the entrance hall to the offices either side (plate 9). The corridor continues the main decorative themes of the principle areas and has not been affected by subsequent alterations. Its moulded dado rails, dentilled cornices and skirting boards remain intact along with the wood block floors (raised on a 6-inch concrete slab, Burgess 2006). Apart from the dentilled cornices, which are simply moulded, the same features continue inside the offices. More recent fire screens have been added, largely in keeping with the original ones.

The corridor passes rooms that are entered by heavy semi-glazed doors set within arched multi-pane glass surrounds (plate 10), which help to cast light into the corridors and survive best on the north side of the entrance hall. Original plans show the doorway removed on the south side of the stair hall into room 3 was of the same design (Burgess 2006, appendix 1/4). The basic layout of the rooms along this corridor survives quite well, apart from a few rooms that have been linked by inserted doorways and partitions, and they also retain their fireplaces (fig. 6). A good example is room 5, the former reception room (plate 11). Plate 11 provides good detail of the door with its inverted corners (believed to be after 1912, Burgess 2006) and vented fanlight above. The fireplace remains intact on the near-side of an inserted, though historic, door insertion (fig. 6a). Over it is a framed map of the world. Windows on the east walls have long architraves reaching to the floor with panelling below.

Some of the offices have been divided quite brutally by modern partitions such as room 6, another reception room (fig. 6), to the detriment of the fireplace. Not all partitions are modern, some are semi-glazed hardboard ones (e.g. room 9, fig. 6a), which in other parts tend to be 1930s or post-war additions.

The northern part of corridor 4 finishes at the former showroom, room 10, which was until recently the shipping department. This area has been divided up into offices and a delivery booth. The ceiling has suffered from damp, forcing the paint to peel (plate 12). Dentil decoration to the beams indicates a higher level of detail than the adjoining rooms. Steps

have been inserted at the west end into the former oil test room (11), which marks the beginning of the factory space. The only historical fixture of note is an old winch fitting attached to an RSJ in the centre of the room (fig. 6a). The southern part of the room was divided to become loading corridor 26 after the 1930s.

From the stair hall, the southern part of corridor 4 leads to the end of the 1912 building and the 1929 extension (fig. 6). Here the original room layout has not been affected by later partitioning in the same way as the opposite ends. Decorative fixtures and fittings generally continue the broad themes (doors, wall features, etc) except for the ancillary areas. Room 12 remains an office and contains a replaced mid-20th century glazed door and side screens and a small locker for the use of the former Works Manager's Assistant, who occupied the room (plate 13). Room 13, the former typing room, has been converted into a ladies toilet. The gent's toilet (14) next to it is raised over the basement, suggesting the basement is a later addition (Burgess 2006). The toilet has been refitted but retains its two-panel doored cubicles. At the far end is the former accounts office (15), which has been carpeted and fitted-out with modern office partitions and suspended ceiling (plate 14). These had been cleared out on a return visit to expose a high picture rail with green-painted frieze and plastered dentilled beams, the same as those in the showroom. The windows on the west side of the accounts office now overlook rooms 17 and 18 in the 1920s extension. Basement access is via a narrow four panel door next to the office entrance that opens onto a concrete stair. Some old shelving remains inside but otherwise the basement is empty. The ceiling is carried on 14-inch iron joists.

Rooms 27 and 29 were the original test room but were divided by corridor 28, probably in the 1930s (fig. 4). Room 27 survives better than 29 but the earlier doors have been replaced with two 1930s/40s style semi-glazed forms, the most interesting of which has two horizontal panes divided by a thin band of glazing in the centre (plate 15). This type was seen adjoining room 27 and is also present in all factory areas. The walls of corridor 28 are made of hardboard and the factory-end fire doors have similar horizontal glass panes and square margins on the outer edge (plate 16). Square roof lights remain in the flat roof of the former test room, three tilting multi-glazed windows on each side (just visible in plate 15).

Ground floor: 1929 extension

The ground floor of the 1929 extension was built to accommodate further offices, stores and a cellar (fig. 6) but by 1937, after the offices were relocated to building 4, the ground floor was converted into a small hospital and occupational therapy block (fig. 4). Original plans

from 1929 (Burgess 2006, appendix 1/9) show the same layout to the existing one, with only minor changes to the circulatory routes.

The former T-shaped corridor with entrances from the 1912 building to the east and externally from the west and south survives in L-shaped form since the southern entrance was blocked when clinical room 18 was established (fig. 6a). Upon conversion, the eastern corridor was sub-divided into corridor 17 and staff area 18, to provide clocking-on, kitchen and toilet facilities for the nurses and doctors. A glazed multi-pane screen was inserted between rooms 18 and 19 (probably relocated from its original position by room 25), with a sliding reception window and hinged desk unit (plate 17). Entry into the room was via a semi-glazed two-panel door of similar form but fitted with obscured glazing. The later corridor has vinyl flooring and the rooms are decorated to a lower level than the offices; all have tiled window sills, wood block floors and few fixtures and fittings. The offices along corridor 21 were fitted with semi-glazed doors (six paned with vented fanlights over) and glazed side-screens to spread light into the corridor. Only one of these remains in its original form, in treatment room 19 (plate 18). The globe lights in plate 18 are probably a later insertion and the toilet door is of 1930/40s design, with a large square panel at the top and long slender panels below. Office and enquiries/waiting room 20 occupies the former store and surgery 22 is located in the former office, with access into the waiting room (fig. 6a). A small ward or consulting room (room 24) has been created from a former office with direct access from the surgery but maintaining its original corridor access (fig. 6a). The ward was simply-furnished and only the bedside curtain rails and sink unit attest to its former function.

First floor

The original first floor layout relates strongly with the floor below, continuing the theme of the stairs, principle offices and reception rooms linking off a single corridor each side to specific 'team' offices and high-status rooms (fig. 6b). At the north end the layout was identical to the ground floor, with the Drawing Office at the far end, followed by the Chief Draughtsman's and Works Orders Offices, lavatories and two reception rooms. On the south side of the stair landing were two large offices, lavatories and luncheon room at the end. The 1929 extension added two additional drawing offices and a second print room (fig. 6b). This layout changed in 1948 when the canteen was relocated from the gatekeeper's house (dining rooms and kitchens were added for the office staff). There was no access originally between this floor and the factory.

The stair landing (1) is decorated in the same manner as the entrance lobby below, with large plaster panels. The walls are painted mustard yellow painted above the dado and

umber below. A geometric-style leaded window lights the back of the landing (plate 19). The stair hall decorative themes are continued in the ceiling, which comprises three leaf-bordered plaster panels; the largest of which is in the centre, framing an oval fruit and berry panel (plate 20) and brass chandelier. Metal nozzles in the plasterwork allude to the later sprinkler system. The edge of the ceiling is defined by a dentilled cornice with egg and dart mouldings.

The same dark-stained semi-glazed fire doors as seen downstairs lead to corridor 2 either side of the landing and single doorways enter into rooms 3 and 7 either side (fig. 6b). Corridor décor is the same as the corridor below. The only difference on this level is that the skirting boards are painted black rather than stained and the doorways, where they remain, contain heavy eight-pane doors within wide architraves, though many are either later three-panelled or semi-glazed doors.

Room 3, a former reception room, is fitted with brass wall vents and cast iron geometric floral ceiling vents (plate 21). The three rooms to the north (reception, lavatories and office) were combined to form a dining room (4) in 1948 and were more recently sub-divided into offices (fig. 6b). Following their stripping-out, moulded and dentilled cornices and beams were revealed (plate 22). Stripping-out works in the former drawing office (room 5) exposed a bolted queen post strut timber roof frame and, since light was important, cord-operated multi-pane rooflights behind the modern ceiling (plate 23). Original plans (Burgess 2006) show the queen post roof is a common form throughout the 1912 building. The print room (6) at the back is linked to the inserted 1930s first floor offices by two inserted doorways replacing a single central one (fig. 6b). Along the north and west walls are screed concrete surfaces for printing machines (fig. 6b), showing up against the floorboards. The first floor offices were unsafe to enter during the survey due to damp and no plans are available.

The room layout south of the stairs has not been altered but some room functions were changed when dining facilities were improved and expanded in this area. Offices 7 and 8 were converted to kitchens for senior staff dining after the main canteen facilities were transferred from the mess rooms to Building 720 in 1951. Kitchen 7 contains all modern fittings except perhaps for the serving area which probably dates to the conversion. Otherwise its tiled floor and walls, larder, serving area and modern cookers and fan systems all relate to its recent usage. Dining room 9 (plate 24) was presumably designated for senior office, rather than factory staff, and again the fittings are modern. Against the adjoining kitchen wall was wooden panelling (plywood, removed) and shelving around the fireplace lit by down-lighting and a serving hatch. The area around the serving hatch is equipped with contemporary shelving, though much has been replaced. Large heated serving units were

situated in the centre and at the south end a modern display cabinet (intact) that would have held Marconi memorabilia (plate 24). Flooring is laid in 7-inch boards.

Gent's toilets 9 were well fitted-out and primarily for the executives of the luncheon room next-door, as can be deduced by its heavy six-panel door and dentilled cornice only found in the more prominent rooms. Herringbone floor tiles are another unusual though practical feature. At the east end of the room, the cubicles have remained as original with their hardwood doors, four-panel pine partitions with moulded entablature.

At the south end of the building, modern canteen 10 and dining room 11 are fitted out in similar form to dining room 8 with plywood panelling dated to 1964, a date pencilled onto the blocked-in fireplace on the north wall. Built-in drawers and cupboards along the north wall panelling provided storage for cutlery, condiments, etc, and along the external walls are matching radiator cabinets inconspicuously hiding low radiators and pipework in the form of thin rectangular heating elements and stainless steel hot-plates (plate 25) covered by metal grills, since removed. Like many such areas, the room has a wood block floor. The stripping of the panelling revealed the original character of the luncheon room, containing similar architectural treatment to the stair area, in the form of leaf-plastered panelling and a dentilled and egg and dart-moulded cornice in contrasting shades of gold-coloured paint to create depth (plate 26). The deep, square-panelled Jacobean ribbed ceiling is particularly fine in context of the building and clearly marks an area of high status. The east wall of the bridge across to the gatekeeper's house is semi-glazed with obscured glass (plate 27) but the west side was rebuilt when the openings at this end were changed.

The 1912 plans (Burgess 2006, appendix 1/2) show a first floor link between the gatekeeper's house, where the original kitchens were housed, and the luncheon room. In 1948 dining facilities were expanded and the drawing offices within the 1929 extension were converted to dining areas (fig. 5). It is interesting to note how the three doorways between rooms 10 and 11 and 12 correspond to original window positions (fig. 6b). In the final phase of use, dining room 11 retained its function but room 12 became a series of three small offices (or private dining/meeting areas ?) separated from room 11 by a narrow corridor (fig. 6b). Again, these areas were furnished with wooden panelling, wood block floors in the style of the luncheon room, and suspended ceilings. After the panels and ceilings were removed, a two-tone cream and green painted wall was revealed as well as the original angle-iron drawing office roof and skylights (plate 28). Room 14 occupies the former print room but is now a lobby area to the concrete stair fire escape at the back of the building, a functional change shown in the 1948 site plan (fig. 5). The room contains a moulded wooden dado

more reminiscent of the 1912 office interiors, and safety doors with two-part glazing that enter the corridor to the 1937 factory. A blocked doorway on the south side probably once held similar doors acting as a fire exit from the dining rooms of the 1929 extension (fig. 6b).

Two flat-roofed wooden huts, a locker room and kitchen store (fig. 6b) have been added in the modern period over the test room roof and are accessed from corridor 2.

5.3 Gatekeeper's house and mess rooms (2)

This is a two-storey structure that occupies the New Street frontage on the south side of the 1912 offices and main entrance (fig. 1), which is to be demolished in the current proposals. Originally it comprised a three-bayed gatekeeper's house with gable facing the road and L-plan six-bay recreation/dining rooms attached to the south and slightly set back from the frontage, both built in brown brick and slated 40° pitched roofs along the street frontage and to the rear. An extension, built of the same materials, was added onto the west wall of the club room in 1929, to expand on existing facilities. In the post-war period a control room was installed in the gatekeeper's house and a covered pedestrian entrance (4) created from New Street into the site. The dining rooms and kitchens were converted into offices and laboratories/manufacturing areas on the ground floor and into offices on the first, presumably after canteen facilities were transferred to the newly-built Building 720 in 1951. At the time of the survey all but control room 3 had been cleared-out, leaving only post war and modern partitions and more permanent fixtures and fittings like carpets and doors, which are mainly original and commonly four-panelled within the house part or semi-glazed.

The gatekeeper's house was linked to the luncheon room in the office range by a covered walkway or 'bridge' originally designed in 1912. The present version was demolished during the survey but its position is indicated on figure 6b, joining the present day offices and dining rooms. A small gatekeeper's hut (labelled 100 in fig. 4) formerly monitored movements through the gate but was probably demolished when control room 3 was established in the post-war era.

The 1929 extension is similar to the mess rooms in form and style to the main building though slightly plainer. Windows are generally uniform in character and are of the metal Crittalls multi-pane industrial style, similar to those inserted along the north elevation of the 1912 factory. They comprise twelve-paned centrally-opening hopper windows on both levels, with concrete sills and tiled heads. The gables are broader but the roof pitch is the same, though lacking finishing touches such as bargeboards. Three ridge ventilators have been inserted along the roof.

The extension was constructed to create a new men's mess room and club room, resulting in an enlargement of the women's mess room to encompass the whole of the 1912 range, and the kitchen relocated between the two (Burgess 2006 appendix 1/15). The floor above the women's mess room became a billiards room and the one above the men's mess became the club room. This configuration broadly resembles the present layout.

In the following text, external descriptions are divided between the 1912 gatekeeper/dining and recreation building and the 1929 extension for ease of reference, but the interiors are described under the same heading, since in the last working phase they are commonly linked by function as offices and workshop spaces.

5.3.1 External description: 1912 Gatekeeper's house and mess room

The building is contemporary with the 1912 offices and shares the same prominent position, construction and form but with lesser architectural detail as befitting its more functionary role (plate 29). The 1929 extension shares similar characteristics. Brickwork is in English bonded brown brick with a slate roof and fenestration is in multi-pane sash windows with stone sills and flat tiled arched heads.

East elevation

The two-bay gable (plate 29) originally had 6/6 sashes on the ground floor to light the parlour and scullery, two 3/6 pane sashes on the first floor to light bedrooms and three-light sashes to light the basement (Burgess 2006). The ground floor windows have been replaced with a large modern casement window that lights the control room, established in the post-war period. A chimney, plain in form, which served the parlour and front bedrooms, was removed when the rooms inside were reconfigured (Burgess 2006, appendix 1/13).

The main five-bay range parallel to the road was originally lit on the ground floor by 6/9 sash windows (Burgess 2006 appendix 1/13), which were replaced by shorter 3/3 vent windows after the dining rooms were moved. Those on the first floor remain as 6/6 sashes. The central bay contains a shaped gable around bas-relief stonework incorporating a blank diamond/cross motif (plate 29). Chimneys rise either side which served the kitchen below, between the men's and women's dining rooms (Burgess 2006, appendix 1/14). At the north end next to the gatekeeper's house is a half bay containing the pedestrian entrance (obscured by hoarding) that occupies the former larder and a 2/4 first floor sash window that originally lit the bathroom.

North elevation

The north elevation of the gatekeeper's house stands opposite the 1912 office building, with the New Street factory iron gates in-between (plate 30), but because of lack of space was difficult to photograph in its entirety. Original elevations (Burgess, 2006 appendix 1/13), show a broadly symmetrical three-bay range, with steps and a semi-circular arched doorway leading into the house. The arch is decorated with a tiled keystone and red brick impostes either side (plate 30), like those in the 1912 factory. At the top of the steps remains an eight-pane fanlight formerly over a set of double doors that led into a small entrance lobby and stair hall through a semi-glazed door. The doorway into the control room is a post-war insertion. Either side of the gatekeeper's door are 6/6 sashes lighting the former kitchen and parlour. Above on the first floor is a central 2/4 sash window for the cleaner's cupboard and to the east is a 3/6 bedroom window. On the opposite side is a doorway from the former kitchen, serving the luncheon room exclusively, via the bridge.

On the north side of the yard area between the 1912 mess room and 1929 extension stands a rather decorative cast iron external stair leading to the first floor landing, added in 1929 to provide direct access into the billiard and club rooms. Although the stairs themselves are solid and functional by necessity, the rails and balustrades are slender and in the latter case have 'turned' ornamentation (plate 31). Beneath the landing is a small two-room extension, blocking the former entrance into the kitchens and mess rooms (Burgess 2006 1/14). Entry into this part, now workshops, is by two four-panelled semi-glazed doors. The landing door leading off the first floor is in the same style as those below, but with a rectangular three-pane fanlight over.

West elevation

The exposed gable of the gatekeeper's house (plate 32) retains its original form apart from some disturbance by modern signage, trunking and more recent items, while the gable in front of the men's dining room is now hidden by the 1929 addition. Windows on the ground floor take the form of a central 6/6 sash with narrower 4/4 sashes either side. The same pattern is repeated on the first floor with shorter versions: a 3/6 central window and 2/4 windows.

Along the main range there has been a good deal of alterations to its four bays. The pedestrian entrance (4) is positioned on the north bay, which necessitated the widening of an earlier doorway (Burgess 2006, appendix 1/13). Turnstiles hide part of the doorway here. Another door, modern and made of steel, has been inserted on the third bay under an open modern porch and the former kitchen doorway, which led from the kitchen into the separate

dining rooms, has been enclosed by building around the open porch here beneath the stair landing. One 6/9 original sash window remains, on the second bay to the right of the turnstiles in plate 32. The windows on this side are taller than the house windows.

The first floor retains three 6/6 sashes. An earlier double-doored opening from the billiard room onto the fire escape has been reduced in size and is hidden behind an enclosed timber-boarded and flat-roofed porch added after 1929 to both sides of the landing (fig. 7b & plate 31) and supported on slender cast iron columns. Two post-1929 dormer windows have been added on the roof.

South elevation

Doorways have been inserted into former windows on both floors. That on the ground floor is modern in date, providing access to the modified workshops/laboratory area, while the second was inserted on the first floor when the fire escape was added in 1929, to serve the billiards room (fig. 7b & plate 33). Both are now boarded-up. Otherwise there are no changes.

5.3.2 External description: 1929 extension

The main entry point into the men's mess room was at the east end of the east elevation where there is a wide multi-paned semi-glazed doorway with matching glazed panels either side, set within a slightly projecting concrete surround (plate 34) and covered in a flat-roofed concrete canopy supported on functional concrete brackets. Fenestration remains as original. The north elevation (plate 32) maintains its window symmetry and remains unaltered. On the longer west elevation (plate 33) the central windows are flanked by slightly narrower side windows. Modern double doors have been inserted into a single doorway that provided secondary access into the mess room (fig. 7b) and was probably once similar in form to the east entrance. The rear south gable retains its fire escape stair that was accessed from the west end of the club room. The doorway has been sealed and only the fanlight is visible (plate 33).

5.3.3 Internal description

Almost all fixtures and fittings have been removed except for floor coverings, partitions, suspended ceilings, internal and external doors and some large cast iron radiators.

5.3.2.1 Ground floor

Gatekeeper's house

Originally the only entrance into the gatekeeper's house was from the arched lobby area on the north side that led to a stair hall with parlour and scullery to the left and kitchen to the right. A small lift in the kitchen meant that food could be cooked, and taken up to the pantry above and delivered to the south side of the 1912 offices via the gallery, suggesting that cooking was another role of the gatekeeper (Burgess 2006, 1/14), or more likely his wife and perhaps other staff. Two wine cellars were located below (no plans available).

Above the steps is the entrance lobby, the doors of which are removed. Beyond it is a wide doorway fitted with a modern semi-glazed door under a large safety-glazed fanlight. C-shaped corridor 1 has a blue and grey lino floor and no interesting fittings. It goes around room 2 passing the doorway to the cellar steps (plain, four-panelled). The cellar is in two parts and contains shelving, odd office furniture and multi-chrome white and red-painted brick walls. There were no features of interest. The stairs at the west end were inserted after the gatehouse ceased to be a residential and kitchen unit in the post-war period and are plain in form with rounded wooden handrails. Room 2, which is reached by the former entrance lobby, was last used as a small office and contains no evidence of former kitchen use apart from a contemporary cupboard (fig. 6a).

The doorway into control room 3 is inserted and the window next to it has been enlarged for greater viewing range. Similarly, the two street-facing windows were replaced with a single larger one. All have modern 6-inch cream tile sills. The most interesting feature of the room is the control panel with its veneered surround, desk and monitoring sets that probably dates to the 1970s or 80s and is perhaps the only piece of Marconi technical equipment to remain on site (fig. 6a & plate 35). On the south wall, the doorway is a later insertion to monitor the pedestrian entry point 4. The style of the door is certainly post-war date and the two glazed panels suggest a 'Modern' design influence, though the fixtures are later replacements. The door contains a small sliding communications screen. The gateway is substantial and clearly more modern. At the opposite end of the passage is a turnstile to control footfall in this area. Another is positioned on the car park gates on the west side of the site.

Mess rooms

The main range is taken up with room 5 which encompasses the 1920s women's mess and kitchens but now forming a largely open plan L-shaped space comprising workshops, offices and perhaps laboratory facilities used by the 'plant engineers' (fig. 7a). The workshops are separated by steel partitions, presumably dating to 1951 when the canteen was moved to

Building 720 (Burgess 2006). Nothing remains of its original function and almost all industrial fittings (machinery, working surfaces, etc) representing its more recent use have been removed and damp has penetrated the ceilings. Specific room function is difficult to identify other than in general terms.

The main room, 5, is split into two: the north part is open-plan and the south part has steel-panelled semi-glazed partitions forming offices and/or laboratories or testing areas. The open part has grey/yellow lino tile flooring and white-painted bare brick walls, partly tiled on the east wall. The windows on the east wall have been reduced in size from the larger sash windows to smaller double-vent windows (plate 36). Lateral steel joists (6 by 4.5-inch) carry the ceiling, supported in the centre by two rows of upright joists. Conduits and electricity points feed around the walls and at the north end is a workbench and scales (fig. 7a). Workshop 6 contains a small metal workbench and vice, and modern ?generator.

The modern room configuration defines a corridor which leads from the working area to a modern fire door on the south side and westwards past two later offices and into either room 7 or the 1929 extension. Room 7, a later addition along with room 6, is sparsely decorated and has an industrial nature with a large modern extractor fan located in the centre. Against the 1929 extension is a blocked doorway with a nice semi-glazed sliding door over it and leading out into the yard are a plain set of semi-glazed doors. A blocked window between rooms 6 and 7 (fig. 7a) suggests one was built before the other, but this is unlikely.

1929 Extension

Room 8 has been modernised with modern office partitions, carpets and suspended ceilings and steel partitions of a more industrial nature on the south side that continue into room 5. There is no decoration apart from painted brick walls. Loading doors in the south-west corner probably date to the 1950s and are clearly associated with the more industrial activities going on in both parts of the building.

5.3.2.2 First floor

Gatekeeper's house

First floor room configuration changed after the gatekeeper's house ceased its residential function to allow through access between the former billiard room to the bridge (and thereby the 1912 offices), and to create office space from the former bedrooms. Bedrooms 1 and 2 were combined as offices and the former central stair landing was sealed in when the west stair was built. In its place are two short flights of steps leading through into (small) office 4 (former house bathroom) and a new corridor (5) through into the main range (fig. 7b).

Corridor 3, which is defined mainly by modern semi-glazed partitions, offers access into room 6, an office space created from parts of the old pantry, landing and cleaner's room, and through a doorway into corridor 7 that leads straight onto the west stair (and ground floor) and bridge. The new corridor formed part of bedroom 8, serving further office space. Such substantial changes resulted in the removal of the bedroom fireplaces and chimneys.

Billiard room

Alterations carried out in 1929 created a billiard room on the first floor over the mess, with toilets and bathrooms on the north side against the gatekeeper's house and a bar area to the west (fig. 5). After WW2 offices were created in the main part and in the 1929 extension (Burgess 2006), and corridor 5 was formed with male and female toilets (9 & 10) created each side from semi-glazed hardboard partitions (fig. 7b). A second corridor (12) was inserted opposite the bar leading into the extension (fig. 7b).

The interior of the main room (11) has painted bare-brick walls and brown post-war semi-glazed doors. Original multi-pane glazed doors stand on the south side for the fire exit and stair, which was built to provide external access into the billiard room. There is no indication of decorative features such as panelling or ceilings. The main part was occupied with desks and filing cabinets (Burgess 2006) and modern office partitions at the south end. Roof frame detail (plate 37) is the same form as in the 1912 office.

1929 Extension

The extension, or former club room, was latterly used by the Purchasing Department and has been less-affected by later changes. It retains much of its original character but like a lot of the buildings has suffered from damp.

Internal entry into the extension is from inserted corridor 12, one of the few areas to contain an original slim-panelled radiator (plate 38). This entry door is original too, though relocated here slightly from its original position (Burgess 2006, appendix 1/15). External entry was provided by the fire exit door on the east side, which are original, containing multi-pane glass and a top-hinged fanlight (plate 39). The interior is the same as the 1912 areas apart from its bolted angle-iron roof frame which is partly obscured by a hardboard ceiling.

5.4 1912 Factory & water tower (3) and 1936 factory extension (4)

The 1912 factory, water tower and 1936 extension are described under the same section because of their spatial, architectural and functional relationships. The factory buildings are to be demolished as part of the proposals for the site and the water tower is to be converted.

Figures 3 and 4 show the historic layouts and functional areas of the factory spaces from 1912 and 1937.

The factory is attached to the rear (west) of the 1912 office range by the flat-roofed test room. It is a large linear structure with extensions to the west and south (built around 1936 and 1937 respectively) and a railway line and sidings to the north along much of the original factory frontage. On the other side are the power house, a range of auxiliary buildings and stores and the reservoir.

The original 1912 structure measured 142m east to west and 48m north to south and was built from brown stock brick laid in English bond, the same as the Office range. The space inside was divided into three main factory areas, three bays deep, and two northern bays containing test rooms, workshops and stores. A toilet block projected centrally from the southern side, which was removed when the Modern-designed 1937 factory was constructed. Each bay was 9.1m-wide. A first floor gallery was added on the first seven bays of the north side by the early 1940s (Burgess 2006). In the roof, a bolted angled iron frame supports five parallel north-lights, a typical factory form, with cast-iron downpipes taking water off the valleys (Burgess 2006).

Historic photographs of the main working areas show a different factory to that seen today, equipped with heavy belt-driven lathes and other machinery powered by a complicated system of bands and line-shafts powered by electricity from the turbine room. Over the subsequent decades the machinery and its power drives have been removed and the only surviving early features are fairly minor, i.e. doors, light switches, etc. Up in the roofspace, where the shafts originally travelled, are a collection of post-war and modern ventilation ducts, power conduits, tannoys and fans.

A rather ornate water tower was included in the original factory construction, situated at the centre of the north elevation. This is described separately in this section and the ground floor is included in the 1912 factory plan (fig. 8) and again in figure 10 with the other three levels.

The 1936 extension to the west was constructed in similar form to the original factory, built in English-bonded yellow stock bricks five bays deep by seven bays long. A contemporary site plan (fig. 4) indicates an expansion of the machine shop capacity and additional workshops, predominantly to the north side. First floor offices/galleries (presumably for senior workers) were added along the north bay and at the west end some time after. The structure is

virtually intact, apart from the toilet block at the west end that was demolished some time ago.

At the time of the survey, the factory had been disused for some time and the interiors were in a poor state as a result of water penetration. Because of this, some of the small upstairs areas were unsafe to enter and were not recorded to the same level, although plans of the more historic ones (pre-1960s) are included in figure 5. Machinery had been removed from the working areas, but photographs in Burgess (2006, 36) give an indication of how the working area appeared in 2006, while the Marconi works was still occupied.

5.4.1 1912 Factory: external description

Because the 1912 factory has been augmented by extensions to the west and south, only the north elevation is exposed and described below. References are made to surviving plans and elevations found in Burgess, (2006 1/16-19).

North elevation

The long, 142m, north elevation (plates 40-43) runs from the 1912 Office to the 1930s extension for a total of 28 bays beside the railway sidings/platform. Loading bay openings and docks are positioned at intervals into storage and dispatch areas and smaller doorways lead into more discrete functional areas. Fenestration is minimal apart from the eastern end and external decoration is plain apart from a brick dentil eaves course below the north lights. The tall four-storey water tower stands out from the mainly single-storey factory in a Baroque church tower style and was perhaps the inspiration for the camouflaged markings on this side of lancet windows intended to confuse enemy bombers during WW2.

The first seven bays attached to the office range display inserted metal multi-pane factory windows either side of a loading door leading onto the platform from the former power test room (fig. 3 & plate 40). The opening has a large brick-arched doorway with tiled key and imposts; the same dressings also seen on the four other loading areas but here obscured by a later sliding door, one of several on the loading bays. These inserted factory windows have a central tilting operation and concrete sills and heads and probably date to the 1930s when the extension and first floor area are believed to have been added. On the first and second bays they replaced original sash windows to the battery room and power test record room (fig. 3) whose tiled heads are still visible and identical to those of the office.

A dock door stands on the ninth bay. Dock doors were built to ground level between the sidings to allow vehicles into the bays, and this one supplied the packing room along with

another on the fourteenth bay and a loading door between on the eleventh (fig. 8 & plate 41). The docks are fitted with roller shutter doors.

To the west of the tower are two low pedestrian doors followed by two higher ones all decorated with plain arched heads. These have secondary wooden sliding doors except the one to the west (fig. 8) that retains a partly glazed door and fanlight (plate 42). A modern goods reception door has been inserted into the adjoining bay from the later erection shop with roller blind door and metal canopy. The rest of the elevation is plain apart from the sliding loading door on the end bay into the original carpenter's shop (plate 42, behind skip)

South elevation

Much of the south elevation is now obscured by the 1937 factory, but original elevations (Burgess 2006) show a series of mainly blind arches with tiled imposts and keystones and loading bays situated on bays 7, 8 and 16. Semi-glazed arches in similar multi-glazed form to the fanlights along the ground floors office corridor are located in a row between bays 12 and 15 (Burgess 2006), none of which survive in their original form. The only externally-exposed arch lies on the fourth bay towards the east end, below the 1937 factory corridor (fig. 8 and plate 43).

The original western wall survives for two bays at the junction with the 1930s factory but has been removed across the factory floor and the roof above supported on a large RSJ. It probably resembled the form of the 1930s extension; a row of five north-light gables. Any blocked former windows or doors were not apparent during the survey.

Water tower

The water tower is an architecturally interesting building set within the centre of the north elevation and rising to a height of 17.7m. It is built of brick with stone quoins over four-storeys, with a truncated chimney shaft on the south-west corner and a flat roof. The chimney housed a flue for a large boiler inside the factory (Burgess 2006), logically housed in room 10 next-door to the tower. The water tank stands on the top (third) floor and has a 1352 cubic foot capacity (Burgess 2006).

The main north elevation (plate 44) is built flush with the factory range and the upper two levels set back slightly above a short balcony decorated with a dentilled course and ball finials. The same decoration was also used to decorate the pediment before it was removed along with the top part of the chimney (Burgess 2006).

The large double semi-glazed doors that open onto the railway siding are similar to those in the office range with their arched fanlight, while the arched brick head has the same tiled arch and keystone as the factory doorways. An emergency fire escape has been cut into the door (Burgess 2006) and a jib in the form of a steel joist inserted into the top of the fanlight to move materials or goods from the siding. A dark area above the jib indicates the position of a former canopy (plate 44). A large multi-pane sash window lights the first floor and is repeated on the other elevations (plate 45). A narrower one lights the second floor on all sides. All windows are dressed with flat tiled heads and keystones. The third floor is lit by small lozenge-shaped windows set within a tiled cross-shape on all sides (plate 45).

5.4.2 1912 Factory: internal description

Figure 3 is taken from the Impact Assessment and provides the layout of the 1912 factory and the functions of each area. Although it is difficult to comment on changing room function and more recent changes when viewing a stripped-out building, it appears the existing layout has changed very little, which is what may be expected from a utilitarian structure in single use and ownership for such a long time. Other sources are available for study that explain the more recent history of the company and its buildings.

Rooms 5 and 6 had unsafe ceilings due to water penetration and were not entered during the survey, though some photos are included in the archive. The first floor rooms above (rooms prefixed 701 in fig. 5) were therefore not entered either. Room 7, the carpenter's shop, was particularly affected by asbestos and all later partitions (post-1937) apart from the first floor offices were removed before access was possible.

Factory interior 1 (plate 46) was the main manufacturing area and comprises the former mounting shop, condensing and winding shop and machine shop. It is divided as thirteen longitudinal east-west bays by three north-south axial bays, formerly separated by brick walls of which only the supportive piers and steel lintels remain (fig. 8). Bays are approximately 9.3m wide and formed by boxed 6 by 10-inch steel stanchions carrying large c.12 by 20-inch steel joists. Bolted angled steel roof trusses occur at 3m intervals and carry the distinctive north-light roof. Later side corridors exist on the north and south sides (2 & 3) with entry points onto the working floor close to the traditional working area divisions. The floor is screed and covered in grey vinyl floor tiles and there are large areas of green mould and damp. Above, attached to the roof trusses are modern factory fixtures: metal ducting, fluorescent lights, electricity conduits, blowers and tannoys. No line shafts or other remains of original power drives remain. On the east wall, modern windows have been inserted to the

former test room area, which has now been subdivided to form the later corridor through from the office range. The gables looking over its flat roof have multi-pane factory glazing.

Similar horizontal pane glazing is observed to the semi-glazed panels filling the (often) knocked-through blind arches of the south wall of corridor 3, on bays 8-10 and 16-25 adjoining the 1937 factory (fig. 8) and it is assumed they date to this phase. Some are fitted with the same inter-war geometric-style doors (plate 47) like those seen in the corridor/test room area. Presumably the screens helped distribute daylight effectively between the 1912 and 1937 factories in what was a relatively dark area.

Corridor 3 retains interesting fixtures and fittings along the north factory wall in the form of metal light switch boards and contemporary fuse boxes from the inter- or post-war era (plate 48).

Large steel-plated wooden factory sliding doors cover the entry points from the corridor and mark the major circulation routes between the rooms. The doors are manufactured by 'Mather and Platt' and bear a date of 1936. Such heavy doors are opened using a boxed counterweight system (plate 49). It is clear there was a long association with this company as the inserted steel windows in room 4 (former finished stores) are made by the same firm and dated 1983 (fig. 8).

Rooms on the north side of corridor 3 were primarily used for finishing works such as testing, packing and storing and are suitably large for these purposes. All are simply-decorated with painted brick walls and blind arcading on the long walls. The roofs have the same angle-iron frames as the main factory area (1). All rooms had been stripped-out prior to demolition and removed of asbestos, leaving only major features such as doors, windows, partitions and stairs. All areas were also damp. A typical example is room 4, the former finished stores, which illustrates these basic characteristics well (plate 50). Office areas, added in the 1930s/40s, remain in rooms 4 (plate 50) 7 and 13 (fig. 8), fitted out with contemporary features like shelving and heaters. A significant feature is the overhead travelling crane in room 12, the former packing room (fig. 8 & plate 51). According to the machine plate, the crane was manufactured by 'Herbert Morris and Bastert Ltd' of Loughborough and was designed to carry a maximum weight of 5 tons. In the same room are some modern weighing scales along the south wall and an overhead water cylinder along the west wall, also manufactured by Mather and Platt (1967). The sliding doors on bay 11 are timber-built and ledged, braced and battened and typical of surviving loading doors on this side (plate 52).

The two dock doors either side have been replaced with roller metal shutters and the docking areas built up to floor level.

Rooms 8-11 stand along the railway sidings. The main one of these is the water tower 11, which is to be retained within the development. Room 9 was the heating boiler room, which is entered by a short flight of metal stairs (fig. 8). The interior retains obsolete pipework that once linked to the boiler and the red/green and white painted walls signifies service usage, the same as the cellar under the gatekeeper's house and room 10 next-door, which contains a modern an 'Atlas Copco' generator and associated switchboards.

The **water tower** (11) was accessed for survey on the ground and first floors only, since the upper two floors were infested by pigeons and unsafe. Floor plans of all levels are included in the report as figure 10.

The ground floor contains pipework and gauges within a railed enclosure along the east wall and an inserted staircase to the west (plate 53), that replaced an earlier steel ladder up to the ceiling hatch (fig. 9). A sliding door leads through into the factory raw stores (fig. 3) to enable raw materials to be brought in from the railway siding by a hoist attached to a steel (RSJ) jib. Ladders lead through ceiling hatches between the floors (fig. 10). The first floor working area is defined by pine-boarded panelling and has a concrete ceiling. No other historic features remain apart from the metal ladder to the second floor

5.4.3 1936 factory extension: external description

The extension is broadly the same in appearance as the original factory building and built in the same English bonded yellow stock bricks. The only exception is the northern bay, which has been raised to two storeys and has had pre-cast corrugated fibre cladding added to the upper walls along the north and west sides, probably in the 1960s or later. At the same time the roof was reconfigured and clad in the same material as the sides. Original fenestration and north-light roofs remain on the other four bays.

Since the east side joins onto the 1912 former elevation and the south elevation is obscured by Marconi House, only the north and west elevations are described below.

North elevation

On the north elevation (plate 55), the ground floor contains a pair of loading doors leading straight into the factory space on the first bay, a single entry point into the spray painting shop (fig. 4) and stairs up onto the first floor. The second bay was formerly occupied by a

concrete-roofed hut or shelter of some kind that is no longer standing. The doorway into it from the factory is now blocked (fig. 10). From this point onwards, the ground floor is fully glazed with horizontal factory window panes that light the former welding and metal department (fig. 4). According to site plans produced after 1951 and used during the survey, these windows replaced a number of single windows, presumably metal-framed, when the first floor was created. More recently a plethora of modern pipework emanates from the west end, associated with modern laboratory/testing areas that replaced the welding department. A raised modern boiler room or other such service building has been added at the west end, where toilets formerly stood, and has no architectural merit.

West elevation

The north bay is flat-roofed and contains horizontal windows on three levels, representing two levels inside and was presumably altered for this purpose (plate 55). The upper two windows are margin-glazed, like those on the north elevation of this bay. Beside these, modern loading doors lead out from the end of the 1960s elevation onto a (removed) concrete ramp over the site of the former toilet block. The angular north-light roofed factory elevations have narrow tilting windows in groups of four per bay except for the second bay that has shorter windows to light ground and first floor levels (fig. 10 & plate 55). All windows have concrete sills and heads and survive relatively intact.

5.4.4 1936 factory extension: internal description

The main factory interior (14) was constructed as a continuation of the machine shop to the 1912 factory and it adopts the same form and layout (plate 56). The original layout also included smaller workshops in the two northern bays, mainly for welding and spray-painting (fig. 4), now changed to become office 16, electricity substation 17 and laboratories 18. The first floor offices above the would appear integral to the original build, since the stairs between rooms 15 and 18 (fig. 10) are shown on figure 4, but those in the north-east corner of room 15 are not. Such changes to the layout date from the post-war period. The main areas of these to retain features of interest, rather than be cleared of fixtures and fittings, are room 16, part of the spray-painting shop with its high windows, substation B (17) and room 18 that houses modern laboratories, testing areas and machinery for the 'Environment Test' department (fig. 10 & plates 57 & 58). Original inter-war style doors, either split semi-glazed or the more 'domestic' single-panelled on the upper third and multi-panelled below (plate 58) lead into established areas such as rooms 19 and 20.

At the west end are the remains of semi-glazed hardboard offices 21 and 22 on two levels overlooking the factory floor (fig. 10), built in the post-war period. The interiors are carpeted

and only contain more fixed fittings such as radiators and shelving, but provide an example of such later additions that in many cases were not recorded due to safety factors (rotted floors and asbestos) (plates 59 & 60). Office/test area 22 is the latest internal addition.

5.5 1937 Modern factory (5)

The so-called 1930s factory was built onto the southern side of the main 1912 factory in c.1937, just after the factory extension was constructed and before Marconi House, which was constructed in 1939 and is noticeably absent from the 1937 site plan (fig. 4). The latter part of the 1930s was a time of great expansion for Marconi's and the factory was built in the more contemporary and ambitious International Modern Movement style.

The plan form is long and rectangular, built over two levels with four by fourteen bays and occupying a 30m by 113m area. The walls are built in reinforced concrete and rendered; the main bays are defined by rows of 13-inch reinforced concrete pillars that run the length and width of the building, though there are fewer rows on the first floor due to its lower weight-bearing needs. The Modern façade is long and low, with a cantilevered office first floor, imposing stair towers either end and projecting toilet blocks along the ground floor. From the front, the pediment of the flat roof obscures the more traditional north-light roofs of the other three bays.

At the time of the survey the building had been left for some time and graffiti had been painted onto the exteriors. The internal layout comprised mainly modern elements and the first floor was in the process of being stripped-out ready for demolition. Internal partitions are created from semi-glazed partitions and hollow bricks, some of which had been replaced by modern partitions. Suspended ceilings have been fitted to office area on both floors apart from the open-planned first floor areas that are open to the roof.

5.5.1 External description

The exteriors survive largely unaffected by modern developments apart from replaced uPVC windows. A separate gabled extension at the east end of the first floor was unsafe to enter.

South elevation

On the south elevation (plates 61-63), long metal factory window ranges, six deep and seven panes wide, occupy the ground floor, behind the low, flat-roofed toilet blocks. The central panes are margin-glazed and tilting, the vertical tilting panes alternating with fixed ones within continuous concrete sills and heads.

The cantilevered first floor thrusts forward, supported on concrete arms that also define the bays externally. Each bay contains two sets of narrow three-pane windows arranged in groups of three, all of which are replacements for original metal four-paned versions (Burgess 2006). Loading doors are located on bays 2 and 8 (from the west) accessing the factory and a store. The doors are partly obscured by metal fire escapes, the railings of which follow geometric Modern forms (plate 64).

The horizontal lines of the elevation are broken up by two large stair towers on the fifth and penultimate thirteenth bay (counting from west to east). The main west tower (plate 62) projects outwards from the main range, standing four storeys high with a roof terrace at the top. The first floor housed the Works Managers Office. The ground floor contains a pair of four-panel doors below a large glass-block fanlight that lights the main staircase inside, set within a geometric-style moulded surround that spreads outwards towards the base and then rises up as two quite subtle piers either side of the tower (plate 62). The first and second floors are lit by replacement four-pane windows. Above, the top floor is slightly narrower and decorated in art deco ziggurat style (Burgess 2006). The projecting front section holds a flag post in similar plain Modern form and metal balustrades around the pediment. The east tower (plate 63) is slightly lower, standing to only two levels. A short flight of steps leads to semi-glazed doors (Burgess 2006) at the front. Slightly recessed vertical windows rise from either side and above the doorway, separated by concrete fins to the top. A row of three windows at first floor level have been painted white.

A series of concrete steps recessed back from the tower on the east side originally provided entry into the test rooms, but the doorway is now blocked (fig. 11a).

East elevation

The south elevation curves around to meet the eastern side of the building in a graceful ocean-liner Modernist curve, produced by the continuation of the toilet block from the south side of the building (plate 65). A second lavatory block stands further to the north. Full factory fenestration on the ground floor is the same as the south side and above for most of the elevation is a later pitched roof addition which is at odds with the main structure. This extension (plate 64) is lit by metal casement windows and has a corrugated asbestos roof and is of no architectural interest. A modern fire escape is fitted towards the northern end of the elevation.

West elevation

Fenestration on the ground floor of the west elevation is the same as the other sides. The first floor has a row of narrower windows, in-between the two covered corridors bridging the gap between this building and Marconi House. There are two entrance points by the factory entrance, one of which is original, containing a five-panel door and the other is a later insertion containing a roller door (plate 66).

5.5.2 Internal description

As with other parts of the complex, through several decades of change and improvement of the Marconi works, only parts of the original ground and first floor layouts remain. Generally, few fixtures or fittings of interest remain from the stripping-out of the works after closure and the whole place has suffered from damp.

Older partitions, either of hollow brick or semi-glazed hardboard screens are mixed in with other more lightweight modern so-called 'office partitions' inserted to form new activity areas or replace old ones, as identified by comparing former site plans of the works with the current layout. Original flooring has been replaced with modern vinyl tiles in the ground floor factory or carpeting in the first floor offices, on raised floors in the main areas. Fluorescent lighting was added some time ago and, away from the main working areas, suspended ceilings have been fitted. As one may expect, factory areas have only minimal decoration whilst office areas can be expected to have more detail. Unfortunately the configuration of the offices on the first floor has been substantially changed and modernised.

Ground floor

Historic site plans show partitioned factory areas on the ground floor with testing rooms and stores along the east side and several rooms, including the works office, to the north (fig. 4). In the modern factory, many of these partitions have been removed. Much of the factory space (4 & 6) is now taken up with former Selex-period laboratories, stores, workshops and staff rooms and only part of the factory/office partitions around the works office survive (5). However, the partition between the testing rooms and factory remains (4) and also the main corridor (2) from the west tower entrance, albeit replaced in the modern period. Decoration is plain. Doors between rooms are semi-glazed, often with narrow central panes and doors onto corridors are four-panelled with glazing in the top panel in plain architraves.

The main entrance at the west tower leads into stair lobby 1 within the west tower. Set prominently in front of the doors is the main stair up to the Managers Office and first floor corridor (fig. 11a). The stair is constructed in concrete with a solid balustrade, finished in

green and yellow terrazzo in art deco style (plate 67). The wooden handrails mentioned in Burgess (2006) had been removed at the time of the survey. Around the stair is a cream-tiled floor. Such stair and flooring finishes are also found in Marconi House and the 720 Building. To the west of the stair is the lift, the entry to which is blocked on this side (fig. 11a). To the east is the (reduced) doorway into the factory. The area beneath the stair leads onto corridor 2, between factory areas 3 and 6, through the work's office (5) and into the main factory area. The corridor is part of the original layout but its walls, once either solid walls or more likely semi-glazed hardboard screens, have been replaced with light modern partitions. Factory space 3 has modern Selex-period laboratories, stores, workshops and staff rooms along the south side but is otherwise open-plan. There are good views from here towards the 1912 factory (plate 68). More Selex stores occupy factory area 6.

An interesting feature of the workspace is the two glazed ceiling panels running longitudinally within the two central bays (fig.11a & plate 68 & 69). Plate 69 provides clearer detail and original partitioning to the testing rooms (4). Works office 5 is the only other definable room on this level. Typical 1930s glazed doors and screens are also visible around the cast iron factory stairs in office 5.

The stair lobby of the east tower (7) is more functional in design than the west tower and offers access to the east end of the factory, toilets and upper floor. Decoration is minimal and the plain concrete dog-leg stairs (plate 70) are clearly for 'blue collar' use. The blocked doorway between the east tower and lavatory block originally provided exclusive access to the test areas (4) (fig. 11a).

Most of the lavatory blocks survive, though some have been converted to stores. Unlike the 1912 office toilets, the cubicles here have plain four-panelled doors. Most other fixtures have been updated but it is interesting to note the urinals appear to have been specially commissioned; bearing the name 'Radio' and manufactured by Adamsez Ltd of Scotswood-on-Tyne (see archive plate).

First floor

The first floor is arranged with south-facing offices at the front, primarily the Works Manager's in the projecting west tower, with offices and working areas of various sizes behind, linked by a long corridor which runs from the rear of the 1912 offices through to Marconi House (fig. 5 & plate 71).

The 1948 site plan provides an early representation of the first floor layout based on a 1939 site plan and it is interesting to note where former lines from the earlier plan were erased in its creation. This shows up particularly well at the two ends of the south office frontage where offices were removed to enlarge the areas here (fig. 5). The layout clearly shows the office range at the front separated by a major corridor from rooms of differing sizes that logically provided administration and service roles, since the upper floor was primarily a 'white collar' area. Modern changes have meant that most of these have disappeared to become open-planned work areas (4 & 6, fig. 11b), and modern offices, meaning that the manager's office 2 is the only one to survive in its original form.

Curved Modern-style walls mark the start of the corridor 1 either side of the west tower stair landing (fig. 11b). From here, the corridor continues westwards into Marconi House (over the covered raised bridge) and eastwards around room 6 and area 7 to meet the first floor corridor from the 1912 Offices (fig. 11b). Corridor 1 has been replaced with modern office partitioning except for the western part of the north wall (fig. 11b & plate 72), which is constructed from hollow bricks, painted yellow to match the stairs and detailed with stained 4-inch bevelled skirting boards.

Corridor doorways are set within thick plain moulded architraves and contain four-panel doors that include a glazed upper panel, also seen downstairs (plate 73). Doors to the emergency exits are similar and fully-glazed (plate 74). The manager's room (2) has been modernised and retains no interesting details, but the adjoining toilet (wc in fig. 11b) which is accessed from the landing, shares the same décor as the stair lobby below, plus a good quality glazed door (plate 75), suggesting the office was decorated to a high standard originally. Above the manager's room is the tower attic room, which has a parquet floor but no other detail worth noting. The wooden staircase up to it is narrow but quite grand in comparison to those in the factory (plate 76).

Corridor 3 is constructed of hollow brick and half-boarding and lit by north-lights. It is plainer in decoration than corridor 1 and leads to metal stairs that connect to those in the workshop offices below. Like other stairs intended for factory-worker use, it is lit by semi-glazed partitions.

The view inside room 4 is virtually unchanged apart from the raised carpeted floor (also in the other open area, 6) and shows the semi-glazed partition and entrance into the former telephone exchange 5 (plate 77). There is nothing of interest inside.

Room 6 (plate 78) was originally open-planned apart from the toilets on the north side, that remain, and rooms on the western side, that have not. The walls, floors and doors are modern.

Area 7, underneath the modern pitched roof extension at the east end of the factory, was unsafe and could not be entered during the survey.

5.6 Marconi House (6)

Marconi House was designed in 1938/39 to accommodate the existing sales and office staff from the 1912 office range and relocate staff from its London offices at Elettra House (Burgess 2006), to become the company's worldwide headquarters. The main reception area was on the ground floor and the upper floors contained offices, with other rooms serving clerical and auxiliary functions.

The structure stands on the south side of the 1936 factory extension and is separated by the 1937 Modern factory by the southern factory entrance, but is linked to it at first floor level by two covered walkways and an office at the front (plate 79). Later Building 720 stands opposite (fig. 1).

Like the 1937 factory, the office block is built in the International Modern Movement style. In summary, it is a large five-storey, broadly U-shaped structure, occupying an area of 38m by 47m, with a glazed roof atrium in-filling the ground floor space linking to the factory (fig. 12a). The structural core is arranged on concrete pillars with the outer walls built with 6-inch thick concrete walls separated by a 2-inch cavity. Non-load-bearing internal walls are constructed from 3-inch hollow tiles (Burgess 2006).

Externally the appearance of the structure has not changed particularly apart from its replaced windows. Internally there are good surviving interiors on the ground and fourth floors, the latter of which retains much of its original room layout. Whilst some interesting Art Deco features have been retained, offices on all levels have been modernised with the addition of carpeted floors, new radiators and suspended ceilings. Original room divisions have been removed and open-plan offices created on the first floor in particular. The roof is flat and covered in bitumen felt.

5.6.1 External description

The exteriors survive largely unaffected by modern developments apart from the windows that were replaced with aluminium frames in 1978/9, but were probably Crittalls-type metal

casements originally (Burgess 2006). The elevations either side of the entrance bay are uniform apart from a few differences on ground and first floor levels, which are highlighted in the text.

The main feature of the building is the rotunda on the south-east corner, which marks the formal entrance bay and also contained prominent rooms on the higher levels (plate 80). It is the tallest and most focal part, followed by the bays each side and the side wings. The ground floor is taller than the upper floors and its entrance lobby is fully-glazed and decorated with geometric banding dividing the lower from the upper half, repeated on the central doorway (boarded from the outside -plate 81- but seen internally in plate 87). On consecutive floors the windows wrap around the bay in regular horizontal bands with continuous concrete heads and sills. At the top of the circular bay is a fluted band that continues in narrower form on all sides and above it is a round pediment decorated by flag masts and tubular steel handrails.

East elevation

The east elevation (partly seen in plate 79) connects on first floor level with the 1937 factory by corridors on bays three and seven and by the adjoining office on the second bay. The ground floor has wide metal factory window ranges, the same on each of the outer elevations, and pedestrian entry points at either end (fig. 8a).

Across the elevation, the (casement) windows are arranged in regular horizontal bands with continuous concrete heads and sills. Those in bay two are narrower, two panes wide, while the remainder have four panes, generally one per office and topped by projecting concrete canopies, and this pattern is repeated on the south elevation also. Original drawings show that the window transoms continued through the concrete piers either sides (Burgess 2006 1/36 & 37), though successive layers of paint have made them less apparent, and that some of the windows were sound-proofed (Burgess 2006).

South elevation

The ground floor southern bay next to the rotunda has a glazed block screen on a granite plinth (Burgess 2006) that lights the foyer (plate 81). Apart from this detailing, the south elevation has the same form as the eastern side. One point of interest is the positioning of the windows around the corners of the building, which is a Modern design trait (plate 82).

West elevation

The west elevation is canted slightly to the east apart from the northern external stair bay to the rear entrance (indicated in fig. 12b). Generally, the same features are evident on this elevation as the south and east, apart from a blocked loading door on the southern bay (fig. 12a). The stair has two concrete flights and solid balustrades, with a certain Modern ziggurat-style to it (plate 82, far left). Entry into the building is via a recessed open-fronted entrance lobby with fluted sides and a short round-ended concrete canopy. The foyer inside is lit by a glazed block screen (fig. 12b & plate 83).

North elevation

The north elevation forms a U-shape around the ground floor glass-roofed atrium and has a similar arrangement of aluminium windows on the shorter end walls (fig. 12). Inside elevations around the atrium repeat the main themes, though it is interesting to note the staggered windows that light the east-side stairs, and the service structures on the roof (plate 84).

5.6.2 Internal description

Because the role of Marconi House has not greatly change over the decades, original layouts and fixtures and fittings generally survive better here than in the factory areas and in better condition, without the ingress of damp that has affected the more vulnerable north-light roofs. It appears to have stayed in use for longer as well, and was still occupied when the Impact Assessment survey was conducted in 2006, and was probably one of the last areas to close. The only real exception to this is the ground floor where certain areas have been re-configured as new office space in the modern period.

Ground floor room layout is specific to its roles as a reception area at the front, works offices and factory/testing areas in the atrium while the function of the upper floors was as offices and administration areas for the different departments they served. Therefore the original room layouts between the first to fourth floors were broadly the same. However, as may be expected over time, some degree of alteration and modernisation has occurred within these areas, primarily the first floor where a largely open-plan office has been created, and to a lesser extent on the second floor. The upper floors, in particular the fourth floor that housed the most senior offices, have remained virtually intact, and the overall effects of modern intrusion have been relatively minor. With this in mind, the following text has been arranged in three separate sections, the ground floor (which is different because of its reception and factory functions (testing areas/laboratories) and the first to fourth floors that have many common facets. To illustrate this floor plans are included to provide examples of modern

room layouts (fig. 12b, first floor) and more complete historic layouts (fig. 12c, fourth floor). Plans of the second and third floors are not included because their form is so similar to the existing fourth floor, though original plans of these levels may be found in Burgess (2006).

Based on the first and fourth floors, the latter part of this section describes layout, décor, fixtures and fittings common to all upper floors, identifying both examples of survival of original features and examples of more recent change in order to highlight the general character. This includes summary descriptions of each floor to highlight any variations in room layouts from original plans included in Burgess (2006 1/30-35) and subsequent changes in room layout.

All furniture and office equipment had been removed prior to the survey and contractors had been required to identify and remove asbestos from the building, prior to stripping-out and demolition. Because of the lack of features, specific room function or occupancy other than in fairly broad terms was difficult to identify. Common modern additions such as carpet flooring, suspended ceilings and fluorescent lighting have been fitted as part of the ongoing use but interesting Art Deco-style fixtures and fittings remain and are highlighted in the text. Original semi-glazed room partitions, made from hard board and hollow tile sub-divide spaces alongside modern office partitions.

Ground floor

Historically the ground floor was the hub of the Marconi company and its formal face. This level was essentially mixed use, combining the reception areas around of the entrance bay and foyer, with its high levels of décor, with office and auxiliary rooms to the north-east, open factory areas to the west and east and toilet facilities facing onto the main working areas (fig. 12a). These roles remain virtually unchanged but for the insertion of works offices along the eastern side.

The principal entrance leads into circular entrance lobby 1, defined on the ground by a red painted band that continues around the sides of the room (plate 85). The rest of the floor has been screed over for carpet. Walls have an Art Deco cream terrazzo finish to them, combined with yellow banding at the base and incised thin horizontal black lines at regular intervals in geometric form (plate 85). Either side of the margin-glazed swing doors into the foyer are metal ventilation panels and thin metal radiators, perhaps designed exclusively for Marconi's (plate 86). A single two panel door with upper margin light glazing leads to a visitors' toilet. In the ceiling is a disc-like light with subtle broadly-stepped geometric mouldings radiating from it (plate 85). A similar form is used on the north-west stair lobbies

on the upper floors. Foyer 2 is a larger area with similar decoration, accessed from lobby 1. Upon entry is the reception desk to the north-east (plate 87), lifts and stairs to the north-west and entry into the atrium to the west (fig. 12a). The main architectural feature here is the staircase that sweeps around in a graceful curve up to the floors above (plate 88). The combination of green and cream terrazzo is particularly effective; primarily the way the green panels rise up and around the mustard capped cylindrical newels. The stairs are built of concrete and have the same terrazzo finish as those in the west tower of the 1937 factory. On the sides of the room, a band of grey geometric tiles separates the terrazzo and plaster finishes, apart from the glazed south wall. Above the lift doors, and in the three corners of the room, there are fixed metal scallop-shaped up-lights. Plate 89 shows the light over the lift doors and detailing to the grey band; alternating groups of horizontal and vertical geometric bands arranged in threes, a common 1930s form of decoration.

Rooms immediately on the north side of the foyer (3) have been altered as offices, and the rest have auxiliary uses as plant and electricity switch rooms and have little historic interest (fig. 12a).

Entry into the largest part of the ground floor, the atrium (plate 90), was possible from the foyer and the 1936 factory. Original plans reproduced in Burgess (2006) show an open space extending across the whole western half of the building apart from a second group of toilets, which remain. Semi-glazed and modern partitions have been added along the west and south walls representing two different phases of sub-division, one row of which masks a former factory loading bay (fig. 12a). Away from the main manufacturing areas, these were software test rooms in the final stages of GEC Marconi (fig. 12a). The low-pitched angle-iron skylight roof over the atrium is in three sections of varying lengths, conforming to the irregular nature of this area and fitted with wire glass. Ventilation was supplied through skylights operated by a rod mechanism in the same way as similar lights in the factory test rooms and Building 720.

First to fourth floors

From the first floor upwards, the rooms were primarily used for office accommodation, filing and storage (Burgess 2006) for the various departments or groups, and adopt a similar room layout, with generally small offices along the outer walls (west, south and north) and larger offices and perhaps more 'technical' rooms on the opposite side of the U-shaped corridor, facing over the atrium roof. The only exception is the first floor, which has the linking corridors to the 1937 factory on the east side and external stairs on the west (fig. 12b). An ante-room precedes meeting room 4 on the fourth floor (fig. 12c). Descriptions of rooms and

floor layouts are based on the first and fourth floor plans with photographs to illustrate, drawn from all levels. Photographs of the first floor provide detail in certain areas and represent how the office was arranged in the modern period shortly before closure.

From the foyer on the ground floor, the main stairs lead up through the building in the south-east corner (fig. 12a). Stair landings or lobbies on each floor (1) are lit by a skylight above and share the same form of wall decoration as the stairs. They adopt a dog-leg form with tight Modern-style rounded corners on the inner balustrade (plates 91 & 92). Finishings to the original metal handrails have been removed either side as well as most of the geometric window railings (plate 93). It would seem the corners of the stairs were lit by lamps, four on each, since cut off. Narrow metal air vents are located on the west landing walls (plate 91). On the south side of the landing are the lifts, which are relatively modern but in their original position (Burgess 2006) and swing doors either side leading onto corridor 2 (fig. 12b & 12c). These hardwood doors have leaded-glazing with leaded fanlights above (plate 94).

All corridors (2, 6 and 9) were originally defined by semi-glazed room partitions (plate 95), apart from corridor 2 on the fourth floor, which contained offices for the more prominent personnel, and tends to have solid walls for greater privacy (plate 96). There is no extra decoration to the corridors. Room numbering is prefixed by the floor number, e.g. 403 on the top floor. Doors have leaded light panels in the top half and all those on corridor 2 retain their unpainted hardwood (?mahogany) appearance (plate 95) while others were simply painted (plate 102). Office doors on the top floor also have two-pane fanlights over to provide ventilation. Inside, the offices are plainly decorated and lacking in fixtures and fittings apart from a few examples on the fourth floor.

Some corridors retain brass ceiling ventilators or ?air conditioning that may have been specifically designed and produced at the Marconi works (plate 95).

One of the main rooms on all levels is the meeting room housed in the south-east rotunda (4). Apart from the fourth floor, which has a small ante room, the majority are entered from the corner of corridors 2 and 5. Each one of these has its own distinctive decorative style that becomes grander as the floors progress upwards. The first floor 'conference room', as it is known, is more contemporary styled than the others with a simply-moulded dado and architraves. A deep coved cornice runs around the ceiling and decorates the beam across the width of the room. The second floor 'lecture room' (former library according to Burgess 2006) is similar minus the dado, and with twin-panelled blue doors and 1960s style cabinets fitted to two of the walls (plate 97). On the north-east wall is a roll-down screen and white

board. The third floor room is Georgian-themed with low wooden panelling, six-panel doors, square fluted pilasters, deep moulded cornice, finished with egg and dart, and spindle and bead, mouldings (plate 98). The fourth floor is decorated more in the manner of the 1912 stair hall, with pink-coloured panelling to the walls, twin-panelled doors and a moulded cornice (plate 99).

Adjoining the north side of the rotunda on floors 1 to 4 is a washroom/toilet suite that echoes the Art Deco style of the stairs and foyer with its terrazzo floor and walls and geometric forms, particularly the slightly-stepped mustard-coloured picture rail and globe lightshade (plate 100). Here also are leaded light panels. Whilst most of the rooms are heated with cast iron radiators, the fourth floor washroom is heated by a stylish chrome radiator with hexagonal fittings (plate 101).

Corridor 5 separates the offices either side of the east wing and is defined by semi-glazed walls lit by margin lights to the offices and high-lights to the more private areas, such as toilets and stores (plate 95). The number of offices on the east side of the corridor varies slightly from floor to floor, particularly on the first floor which houses the corridors to the offices of the 1937 factory (fig. 12b). The two corridors leading to the 1937 factory again have similar partitions. A larger, more open, room configuration tends to be on the west side of the corridor (room 7, plate 102), which largely retain the same form. At the north end of corridor 5 are the plainer concrete service stairs leading down to the factory floor (fig. 12) with crude iron geometric-style balustrades.

Corridor 9 provides an access route through the west wing and shares the same semi-glazed partitions as corridors 2 and 6. On the first floor these have been replaced to create open-planned offices either side of the corridor route (plate 103).

Judging from its décor, room 14 on the corner between corridors 2 and 9 on the fourth floor was used for executives perhaps staying overnight since it has its own built-in clothes cupboard and bathroom suite (fig. 12c). The room is fitted with moulded dado and cornice and a wood block floor under the modern carpet. Two fine ?rosewood doors on the north wall give access to the cupboard and bathroom suite (fig. 12c & plate 104). Inside the bathroom are interesting fixtures and fittings including a 1930s sink (plate 105) and flat-panelled radiator. The floor has terrazzo tiling like the east wing washrooms. A modern shower has been fitted, possibly replacing an earlier bath. In the adjoining room to the east of room 14 is a ?1930s wardrobe (fig. 12c & plate 106). Such features are a rare survival. The only other

fixtures recorded on this level were some well-designed Art-Deco coat hooks in room 10 (fig. 12c & plate 107).

The odd configuration of offices on the east side of corridor 9, around room 11, remains largely intact on most floors, though inevitably modernised. At the north end of the second to fourth floors, the corridor finishes with lift/stair lobby 12 and offices 13 (fig. 12c). On the south side of the lobby are the entrances to the ladies toilet and a porter's office to monitor movements down the goods lift. The first floor foyer 12 is larger and grander than the other floors because of its association with the external stair in the north-west corner, with a broad stepped cornice on the walls and leaded side panels to the swing doors that exit onto the external stair lobby (plate 108).

On all floors, the internal stair on the east side of the lobby is decorated in the same way as the principle stair but with little embellishment. It is interesting to note how the windows follow the line of the stair (plate 109) and old radiators survive here on the landings.

5.7 Building 720 (7)

Building 720 is the latest component of the historic group, believed to have built in 1951 as factory space and the works canteen, replacing the former mess rooms on the New Street frontage that were converted to working areas. It adopts a large rectangular plan form of six bays measuring 23m by 77m, with the main facade facing the Modern factory and Marconi House to the north. Either ends have projecting stair bays and at the back is the 1950s kitchen block, supported on concrete piloti (now infilled), and a narrow tangential block running south from the main block (Burgess 2006). In construction terms, its exterior is brick-built around a 6m grid of reinforced square concrete columns forming five by twelve bays. The roof has a distinctively 'wavy' form from its six concrete barrel vaults and is covered in bitumen felt, sealing its once distinctive circular light wells. The kitchen block to the east has a flat roof and lantern lights. In c.1965 a new canteen and office block was constructed on the west side. Due to its late date, this building was not included in the survey, but general photographs are included in the archive.

The buildings inside retains much of its earlier layout, although some rooms have been reconfigured by modern partitions. The interiors survive in better condition than in the main factory areas. After canteen facilities were moved to the 1965 building, new doorways were inserted between the two, and access routes off the stairs. The first floor appears to have been used as part of the social club at some stage, and badminton courts accommodated

(see archive plate), but latterly this level was carpeted and used for offices for Customer Services and Marconi Marine (fig. 13b).

5.7.1 External description

The exteriors are heavily glazed with metal windows between the piers around the factory and canteen areas, and continuous concrete sills and heads. The walls are rendered and painted white to match Marconi House and the 1937 factory, apart from the walls below the sills, which show painted brickwork. The main elevations are similar in nature and share the same functions apart from the south elevation which is more complicated. Its most distinctive feature, however, is its wavy roof.

North elevation

Fenestration on the ground floor factory level consists of sixteen-pane tilting horizontal lights. Canteen windows on the first floor have a different arrangement of central casements between horizontal panes (plate 110).

East elevation

The ground floor has a central roller metal loading door and to the north are a blocked side entrance and window. A new entrance has been inserted on the south side of the roller door loading bay (fig. 13a). Fenestration above is the same as the north side (plate 110). The second bay from the south elevation is occupied by the flat-roofed stair bay, which has more domestic-style casement windows on both levels, the largest of which light the stairs on the east side. Smaller casements are located above the concrete-canopied doorway onto the stairs (plate 110). Another doorway is located on the first bay (fig. 13a).

West elevation

The west elevation (plate 111) follows the main themes of the east side around the factory and canteen, but with some shorter windows on the ground floor to light the toilets. A shorter projecting stair bay connects to the south lit by metal casement windows on the west side and narrow tiling windows over the stair entrance. A large factory entrance stands at the north end of the elevation (fig. 13a).

Standing against the stair bay is the three-storey modern office building (plate 111) that was built for apprentice training and offices, but later converted to kitchens and canteens (fig. 13). It has a concrete frame clad with pre-cast concrete panels (Burgess 2006). Due to its recent date, no other survey works were undertaken of this addition.

South elevation

The south elevation was difficult to view in its entirety due to overgrown vegetation and its proximity to the site boundary (railway line). Only the three levels at the back of the main factory/canteen block (including the mezzanine) and the two-storey tangential kitchen block were studied (plate 112).

Ground floor and mezzanine fenestration at the rear of the main block comprises rows of metal framed casement windows, in four-light groups on the ground floor and longer nine-light rows on the mezzanine level, one per bay. Rows of narrow tilting windows light the first floor. Around to the east, the open undercroft underneath kitchen block was infilled as a service area using concrete block in the modern period and was not surveyed. Above, lighting the kitchen, the windows are the same as those on the canteen, but in shorter two-pane lengths (plate 112). There is also a fire escape and above the kitchen is a tall boiler flue.

5.7.2 Internal description

Ground floor

The ground floor (plate 113) is a large factory space (1) divided into 36 bays by 15-inch square concrete columns over a grey vinyl tile floor and fitted out with air-lines, fluorescent lighting and cast iron radiators along the window range. On the southern side are offices, stores, lavatories and electricity switch-rooms, with two sets of double doors leading outwards to the back and concrete steps leading up to the mezzanine level either side (fig. 13a & plate 114). Some of these rooms have been rearranged in the modern period, but many retain their original form. At the western end are two further rooms (3, toilets and staff room) for apprentices who had separate facilities from the male and female staff (Burgess 2006) and separated from the working area by a modern corridor (fig. 13a). Entry points are accessed from stairs in the projecting bays either side, that on the west side is entered via a small lobby, decorated in yellow terrazzo floor ties and terrazzo walling up to the middle point and separated by a pair of glazed double doors (plate 115). This décor is similar, though more basic, to those in the Modern buildings, and continues up the stairs on both ends of the building that are fitted with solid balustrades with a yellow terrazzo finish and wooden handrails (plate 116). Emergency exits are located on the north-east and north-west corners (fig. 13a). The exit on the east elevation has been blocked.

In the projecting wing to the south (rear) is a plain concrete and metal-railed service stair up to the kitchen, entered from the former undercroft (fig 13a). Other rooms in the wing include a boiler room and other plant rooms.

Mezzanine floor

The mezzanine floor occupies the south wall of the main part of the building, over rooms 2, and is reached by stairs either side (fig. 13a). It overlooks the factory floor from the balcony (plate 117). On this floor is a row of several rooms, with stores occupying the central part, and offices either side. A lecture room was located at the west end (fig. 13a & plate 117). Original room divisions are simple and defined by steel and hardboard semi-glazed partitions and plain semi-glazed doors (plate 118).

First floor

The first floor above the manufacturing area was originally occupied by a staff and 'hourly paid' canteen with a demountable screen between the two (Burgess 2006) and a large kitchen occupying the southern block with its own staircase and toilet facilities. More recently the floor was occupied by Marconi Marine and the Customer Services department (fig. 13a) and in canteen 1 a modern raised floor has been inserted, office partitions, a suspended ceiling (plate 119) and a corridor has been formed beside serving area 2 (fig. 13b). Stripping-out exposed earlier terrazzo floor tiles and the barrel-vaulted ceiling (plate 120), including the blocked circular skylights, original florescent lighting and ventilation units (plates 120-122). A 1930s Eastern Electric fusebox and switchboard occupies part of the south wall of the western bay (fig. 13c & plate 123).

Modern partitions largely hide the yellow tiled walls in serving area 2 and kitchen 3 (plate 124) but it is clear the terrazzo flooring continued into these areas. Toilets/cloakrooms are located at the east and west ends of the service area building (fig. 13c). Lining the outer walls of the kitchen are various cold rooms, fridges and food preparation areas (fig. 13b).

5.8 Power house (8)

The power house stands opposite the 1912 factory on the boundary with Marconi Road (fig. 1) and is to be retained and refurbished in the current proposals. When it was built in 1912, at the very start of the factory, it was a single structure with a boiler room to the west and a turbine room to the east, which were extended southwards in 1928 and 1930 (Burgess 2006) to form the generator room. A further extension in the inter-war period added another bay to the west of the boiler house, and brick shed-like structures were added on the same side in the post-war period. The chimney was replaced in 1985 with a steel flue (Burgess 2006). It is worth noting the presence of several other structures to the west of the power house that are shown on the 1937 site map (test areas, etc. in fig. 4) that have not survived.

Plan form is broadly oblong and orientated west to east with a double-pile slate roof, gables either end, and a chimney in the middle. All parts are built in yellow stock bricks. Entry points are located on the east and west sides, the west side having the wider loading doors into the generating room and into the boiler house via the later Fletton-brick shed. Access from Marconi road has been sealed off. To the west and east are platforms for oil tanks and coal stores. The former rail line has been replaced with concrete hardstanding to the south. Inside the original structure encompassed eight bays, with the slightly larger boiler house separated from the turbine room by a solid wall. The generating room to the south is built over six larger bays and in the same materials in matching form.

Inside, the current building retains two of its old Compton turbines and the boiler room has modern 'Robey' boilers. The generating room is open-planned and cleared of its machinery and was last used by the company for storing spare parts and carrying out repairs, but is now infested by pigeons.

5.8.1 External description

The original building matches the 1928 and 1930 extensions in form and character, but later extensions and alterations have harmed its appearance. Windows, where they survive, are of the metal Crittalls multi-pane industrial type, top-opening and centrally-tilting, with arched brick heads and concrete or codestone sills. Windows on the Marconi Road elevation are set high as a security measure, and brick walling continues either enclosing the fuel tanks and coal stores either side. Roof lights occupy the ridge spaces.

The join between the 1928 and 1939 extensions is difficult to see externally, since the builds match each other.

North elevation

The north elevation, along Marconi Road, has a plain functional form punctuated on the first three bays of the turbine room, working from east to west, by high multi-pane factory windows (plate 125). Two of these survive virtually complete but the third has been reduced to allow for modern ventilation grills. The windows have vented top panes and tiling middle ones. A doorway has been inserted below the window on the first bay, which is now sealed.

All the five windows that lit the boiler house and its 1930s extension have been blocked but their size suggests a similar form to the others, including those in the later extension (plate 125, right). In most cases the sills and heads have been retained, but there are two where only the heads are visible, arguing for two blocking phases.

East elevation

The east elevation is largely obscured by fuel tanks, but certain key details were recorded. All ground floor windows are blocked and sole entry on this side is from the southern bay through a single doorway from the fuel tank platform, whose door arch is dressed the same as the windows. Above on the turbine house gable is a metal-framed oculus window that bears the same brick detailing as those on the water tower (plate 125). The gable on the generator room retains its factory-style window below a concrete lintel but is mainly obscured by the tank.

South elevation

The south elevation (plate 126) faces inwards towards the factory across the former railway siding and dates to the inter-war period. The first four bays, working from east to west, are fenestrated with narrow 15-paned windows on the first and third bays, which have vented top panes and tilting middle ones. Former 20-pane windows on bays two and four have been affected by later activity; the first making way for a ventilation system, and the second being blocked (fig. 14 & plate 126). The window on the sixth bay has been blocked with metal shutters and above it is a blocked loading door, probably inserted at a later stage. The only one of the larger windows to survive is on the sixth bay.

West elevation

The west elevation (plate 127) faces onto a raised concrete platform that was formerly occupied by coal bunkers to fire the boilers and generators. The original boiler house elevation was removed when it was extended in the 1930s (pre-1937, see fig. 4) with a single-bay flat-roofed structure (plate 127, left). This building is much plainer, with continuous concrete sills and lintels to the only two upper windows on the south side.

Entry into the boiler room is through a pair of glazed doors leading into the modern (post-war) shed straddling the boiler house and the 1928 extension (plate 127), used as stores and electrics, but of no architectural interest. Above, though hard to discern, are the red brick dressings to an oculus window that is plainer in style than the one on the opposing gable.

A pair of original double ledged, braced and battened factory doors lead into the generator room. Two interesting points of detail here are the diamond-shaped observation panel in the worker's door and the bullnose brick jambs. On the south side is a small post-1937 plant room which, despite its later date, is built of yellow stock bricks like the earlier buildings.

Factory fenestration and dressings on the upper level, over the sheds, is intact, though the gable window above is probably inserted since it has a concrete sill.

5.8.2 Internal description

The boiler and turbine room interiors remain largely unaffected by modern developments, but, as practical buildings, have little in the way of interesting detailing or fixtures and fittings, apart from the two turbines previously mentioned. The generator room has been cleared of all its machinery apart from an overhead crane. Although it was built in two phases, the inside is one single space and is therefore described under one heading.

The internal floors are raised higher in the boiler and turbine rooms compared to the generator room to allow for under-floor services. All walls are bare painted brickwork or tiled and all floors are laid to concrete. Roofs are framed in bolted angle-iron, a typical industrial form, and have skylights along their ridges.

Boiler room

A small lobby inside the modern stores provides entry into boiler house which is occupied by two modern Robey boilers surrounded by pipework and steel gantries (fig. 14 & plate 128). A steel joist strides the division between the original boiler house and the extension, supported on a steel column. Various tanks fill this space, lit by a modern convex skylight.

Turbine room

The turbine room (plate 129) is set on a raised level with external access from Marconi Road and internal access from the generator room. The concrete floor and walls, up to the sills, are painted factory red and white thereafter. The room houses two Crompton Parkinson (manufactured in Chelmsford and Guiseley) turbines (plate 130) and perhaps formerly held a third, judging from a scar on the floor (fig. 14). Modern 'English Electric' transformers line the west wall and there is a 'Herbert Morris & Bastert' overhead crane running on tracks on the west and east walls, with a maximum load of three tons (plate 129). It is interesting to note the cast-iron radiators mounted high up on the west gable wall above the crane (plate 129). Modern plant has been removed at the southern end of the room, installed after the viewing area here was blocked in, this being quite a small room.

Generator room

The generator room (plates 131 & 132) is essentially a large empty shed, since the electrical power-generating plant was stripped-out some time ago. Its interior is largely uniform, with grey vinyl floor tiles, white-painted walls, bullnose window sills and steel tracks on the long

walls for a Morris overhead crane; maximum capacity five tons (fig. 14). A more interesting aspect is the white ceramic wall tiling mid-way up the walls of the boiler house extension beneath the peeling paint, particularly along the north wall (fig. 14), where it is topped by a thin moulded ceramic rail (plate 131). In the north-east corner is a steel staircase that provides entry into the turbine room, where the glazed screen of the viewing area remains behind later brickwork (plate 133).

5.9 Cottages (9)

3 and 4 New Street were part of the original Marconi complex, standing on the corner with Marconi Road (fig. 1), and separated from the works by a brick-arched wall partly enclosing a small front garden. The rear faced outbuildings to the west. It appears they were built to house key Marconi workers, though not managers, but maintenance workers such as electricians (fig. 4) who could be on hand to ensure the smooth running of the factory. Latterly they were used as offices.

The cottages form a mirror-image of each other and are built over two storeys in English-bonded yellow stock bricks, with a half-hipped slate roof of 35 degree pitch. Timber multi-paned casement windows are fitted throughout, with flat soldier-course heads and tiled sills.

5.9.1 External description

The exteriors survive without any sign of modifications although the building is suffering from damp through disuse. The main feature is the central Arts and Crafts-style central chimney and the unusual incorporation of the lozenge pattern in décor and internal layout.

East elevation

The front (east) elevation (plates 134 & 135) contains the two main entrance doors in the outer bays, each fitted with a five-panelled door and diamond-themed fanlight, beneath a bracketed canopy. Canted bay windows occupy the middle bays of each cottage. On the first floor, the bathroom is lit by a single casement window and the principal bedroom has a pair of casement windows. The chimney stack, which is designed to be disproportionately tall, has indented corners, an oversailing top and ceramic pots (plate 134).

Side (north and south) elevations

The side elevations are identical in form. On the ground floor is a three-light casement window lighting the kitchen. Beyond it are two small lozenge windows lighting the stair hall and larder (fig 15 & plate 136), which are unusual features. On the first floor, a tall window lights the stair and a pair of casements light the rear bedroom.

The north elevation (plate 134) was boarded up during the survey

West elevation

The rear elevation has two semi-glazed doors (one of which has been replaced with a steel security door) providing entry into the sculleries on the central bays, with integral windows between (plate 137). On the first floor are two paired casements lighting the second bedroom. In addition to the main stack are twin plain rectangular stacks serving the kitchens below.

5.9. Internal description

The internal layout survives well on the ground floor but on the first floor the walls have been removed between the back bedrooms to make larger office spaces. Many original or historic fixtures and fittings remain, primarily doors, windows and fireplaces which, because they have been replaced on the ground floor, provide an interesting sample of 1930s fireplace design.

Internal decor is plain, with plastered walls and picture rails to all rooms apart from the scullery and stair hall. Most of the doors are plain four-panelled in form, others were probably replaced in the 1930s refurbishment. Windows are original with curled fixings. All areas are carpeted and there are no signs of its later office function.

Ground floor

The front door opens onto the hallway with the stairs in front (plate 138) and cupboard beneath. Behind the stair hall is the larder, which contains a lozenge-shaped window (plate 139), fitted with well-designed catches. To the west is the kitchen, with cupboards either side of the fireplace (plate 140), that links to the scullery and back door (fig. 15). The parlour is the main front room, with its 1930s fireplace set against the angled stack (plate 141).

First floor

The first floor is reached by a quarter-turn timber staircase, with plain newel and balustrades. Entry into the bathroom at the front is off the landing, while a small lozenge-shaped lobby imitates the shape of the chimney and provides access into the three bedrooms. The bedrooms have no features of note though retain their original cast iron fireplaces (plate 142), while the bathrooms, which are rather cramped, were refurbished when the office conversion took place.

Weigh house and outbuilding range (10)

This group of buildings stands along the northern boundary of the works opposite the former railway siding and around the factory 'pond' or reservoir, that fed the factory's sprinkler system (fig. 1). The group comprises two structures built in 1912, the weigh house and well house, another surviving from the 1930s prior to the site plan of 1937 (fig. 4), and some others in the post-war period (fig. 2). All are single storey and provided storage and maintenance worker's offices functions, apart from the weigh and well houses.

During the survey, entry was prohibited to most of the outbuilding range due to unstable walls, and the area was fenced off awaiting demolition. This meant that, with the exception of the weigh house, only external records could be made, from the north side of the factory. Because internal access was not possible, no plans were created, but adequate plans are provided of the historic elements in figure 4 from 1937. In the following descriptions, the buildings are given letters prefixed by the number 10 and shown in figure 1. Where relevant these are also referenced to the 1937 plan by the numbers given in figure 4, e.g. weigh house 10/a (1).

Weigh house 10a (1)

The weigh house (plate 143) is a small single storey building close to the New Street goods entrance, built in 1912 (fig. 1). Originally there was also a roads goods weigh bridge on the western side and another bridge for rail goods on the east (Burgess 2006). The structure is built of yellow stock bricks in English bond with wooden multi-paned windows (with bullnose brick sills) and a shallow pitched slate roof and chimney on the western gable.

Externally, the structure is entered through a multi-pane semi-glazed door below a brick air vent. The south side, facing onto the weigh bridges, is plain apart from the two sliding windows onto the former weigh bridges (plate 143, left). The west elevation is obscured by the adjacent shed and features single casement windows either side of the central chimney stack. The north elevation is built onto by oil store 10b (2).

Internally, the space is occupied by a single room with bare brick walls containing its own 'home comforts' in the form of a cast iron fireplace at the west end and radiator by the door (plate 144). The roof is supported on a simple collar rafter frame.

Oil store 10b (2)

The oil store is built onto the north wall of the weigh house and is another small brick-built single storey structure similar in form to the weigh house but later in date (1930s). In

contrast, the building is built in cavity wall bond and the windows are all metal. The main entrance is on the east side, where the (modern) door stands below a concrete lintel and is flanked by single metal windows (plate 143). Side elevations have metal factory-style windows. A doorway exists on the west side into the adjacent shed.

The interior is divided into two rooms (fig. 4), but entry was not possible.

Behind the oil store, and fenced off to the west of the cottages (9), are two pre-fabricated wooden 'huts', apparently used as workers' offices (Burgess 2006), which were not viewed in the survey.

Post-war stores/offices 10c

Two adjoining pre-fabricated and corrugated iron-roofed sheds stand on the west side of the oil store (fig. 1). The eastern part (store?) is wooden-framed and had been partly-dismantled at the time of the survey, while western part, formerly used as works office, judging from the debris within, is metal-framed with corrugated iron sides and open-sided to the south (plate 145). Neither is shown in figure 4. A modern plastic 'Olympic' control booth and barrier stands to the south to control movements through the gates (plate 145, right).

Store 10d (6)

Adjoining pre-fab. sheds 10c to the west is an open-sided 'Dutch barn' style corrugated steel storage shed standing on a raised concrete floor (plate 145). The structure has an angled iron frame over four bays and a brick wall at the back. Although a building is shown on the 1937 map, it is likely that the present building is post-war in date.

Office/store 10e

This is another post-war pre-fabricated structure that adjoining shed 10d to the west, probably a works office. It has a light timber-frame and boarded exterior with gables to south and north.

Outbuilding range 10f (8-12)

The main group of buildings is a long linear row of brick buildings in poor condition, along the front of the reservoir, built in the 1930s for various uses such as electricians' workshops and foremen's offices (Burgess 2006), presumably associated with maintenance roles. The western part of the range is built in English bond in pier and panel but seemingly rebuilt from the fourth bay onwards. The southern side (plate 146) has high narrow metal-framed

windows and two main entry points, plus others on the end gables. Large areas of slates were missing from the roof and parts had also collapsed inwards.

Well house 108 (14)

Access to the 1912 well house (14) on the north-west side of the pond/reservoir was not possible during the survey, but it is described in Burgess (2006) as a small brick-built and flat-roofed structure and is labelled in figure 1.

6.0 DISCUSSION AND CONCLUSION

Marconi's was a pioneering company in the radio-electronics industry that had its world-wide headquarters and main manufacturing base at the New Street site from 1912 to 2008. The buildings that remain on the site form a large industrial complex representing four main phases, recorded in their modern context:

- The establishment of the works in 1912
- Minor additions in the 1920s
- 1930s Expansion of the works
- Post-war developments

The Listed 1912 offices (1) are the most important of the original structures to survive. Its Edwardian Baroque architecture reflects its status as the principle building of the early factory. Inside, the spatial layout remains virtually unaltered apart from the sub-division of some of the rooms with 1930s and modern partitions. Areas of interest are primarily the main stairs/stair lobbies, the fan-lit office doorways and original fireplaces. Many other 1912 construction phase buildings survive and are interesting for their historic character and group value, but tend to be plainer, more functional in design with low architectural interest. Of these, the water tower (part of 3) is the most significant as a landmark building, sharing a similar level of architectural embellishment as the offices. The 1912 factory building (3) is typical of the early 20th century factory form with its steel framework, factory glazing and north-light roof. Current interiors date largely to the 1930s and are common to all working areas. Original power drives for machinery have been removed. Otherwise, the power house (8), gatekeeper's house/mess rooms (2) and the more minor structures have plain form and built of easily-available materials, although they still have some historic importance to the site. Additions carried out in the 1920s have been sympathetic to the structures but internally these have been the most subject to change.

With the exception of the 1936 factory extension (4), which follows the architecture and form of the original factory, the 1930s buildings are designed in a more progressive Modern style using modern materials, long areas of glazing and flat roofs. The Modern façade of the 1937 factory (5) hides the more practical factory form behind. Its interiors have been re-formed in the manufacturing area and the offices modified on the first floor. Of all the 1930s buildings, Marconi House (6), the headquarters of the company, survives the best, externally and internally, especially around the reception areas and stairs, which show a strong Art Deco theme.

Later buildings are less interesting, but Building 720 (7) is a landmark feature for its wavy-roof. Although the 1965 canteen and Eastwood House were built relatively late, the character of the older buildings and the site in general have not been unduly compromised by modern development.

The impact of change has been minor to the exteriors of the buildings but, as the site has developed, internal layouts and functional areas have changed, which is the inevitable consequence of any manufacturing company - especially those in more technologically-advanced and rapidly-evolving industries like telecommunications.

The Marconi site is an important industrial complex of local, national and worldwide importance. Its various structures comprise a varied and interesting group, each broad constructional phase having its own functional merits, and in some cases architectural identities and contributions. This group has developed organically as a number of diverse buildings packed into a constrained urban site. With no 'grand plan' it is difficult to assess the site as a meaningful and cohesive whole, but more as an end product of 100 years of site evolution, compromised to some extent by functional change, modernisation and latter-day dereliction through disuse.

Of those buildings to be retained, the exteriors and the more notable internal features such as the stairs and ornamental doorways inside the Listed 1912 offices are likely to require sympathetic retention in the refurbished building. This report, made before demolition and redevelopment of the site, together with the earlier Impact Assessment, provides a record of all historically-significant structures that survive at the Marconi works and a baseline for further study of this important industrial complex.

ACKNOWLEDGEMENTS

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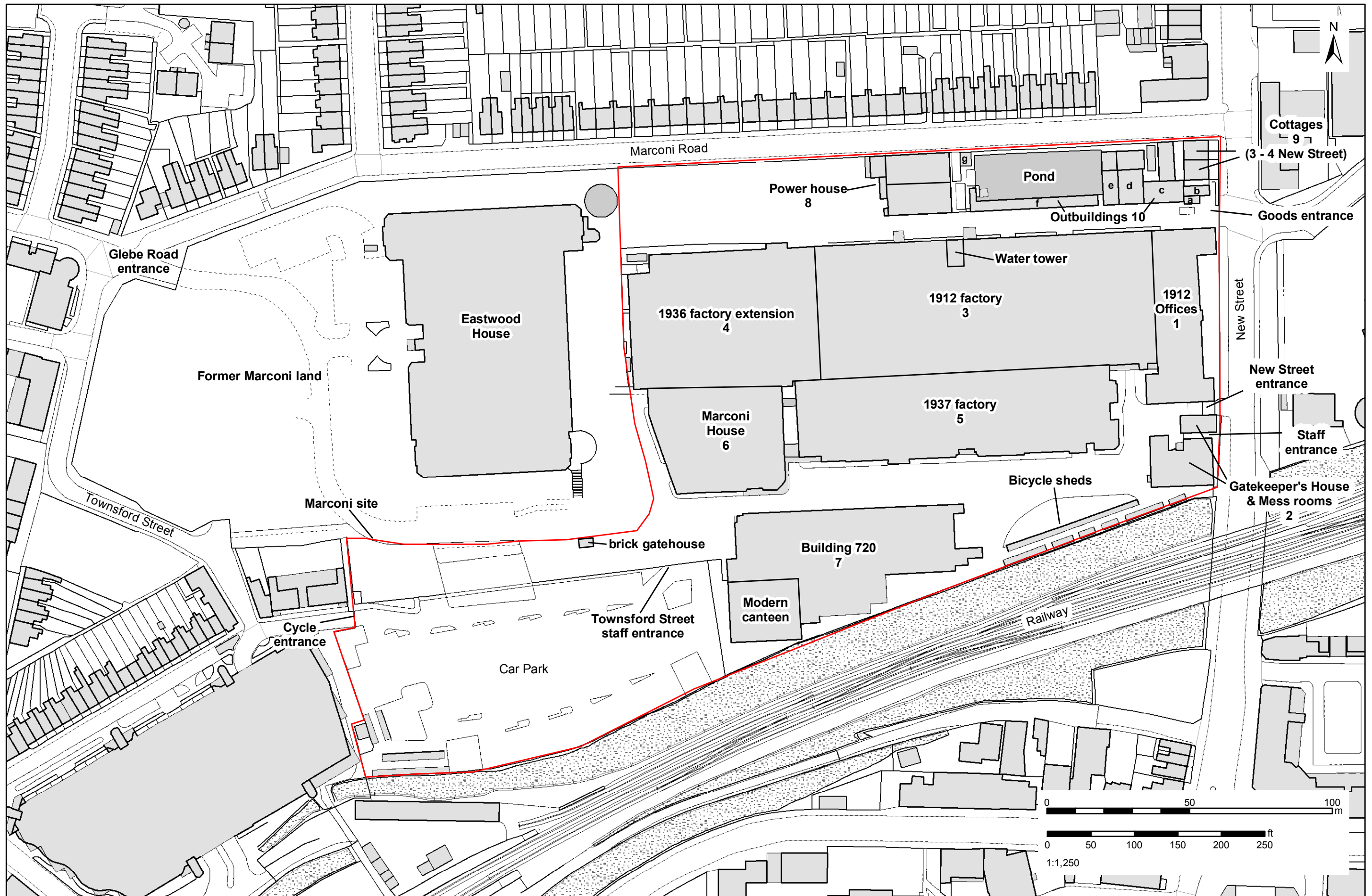


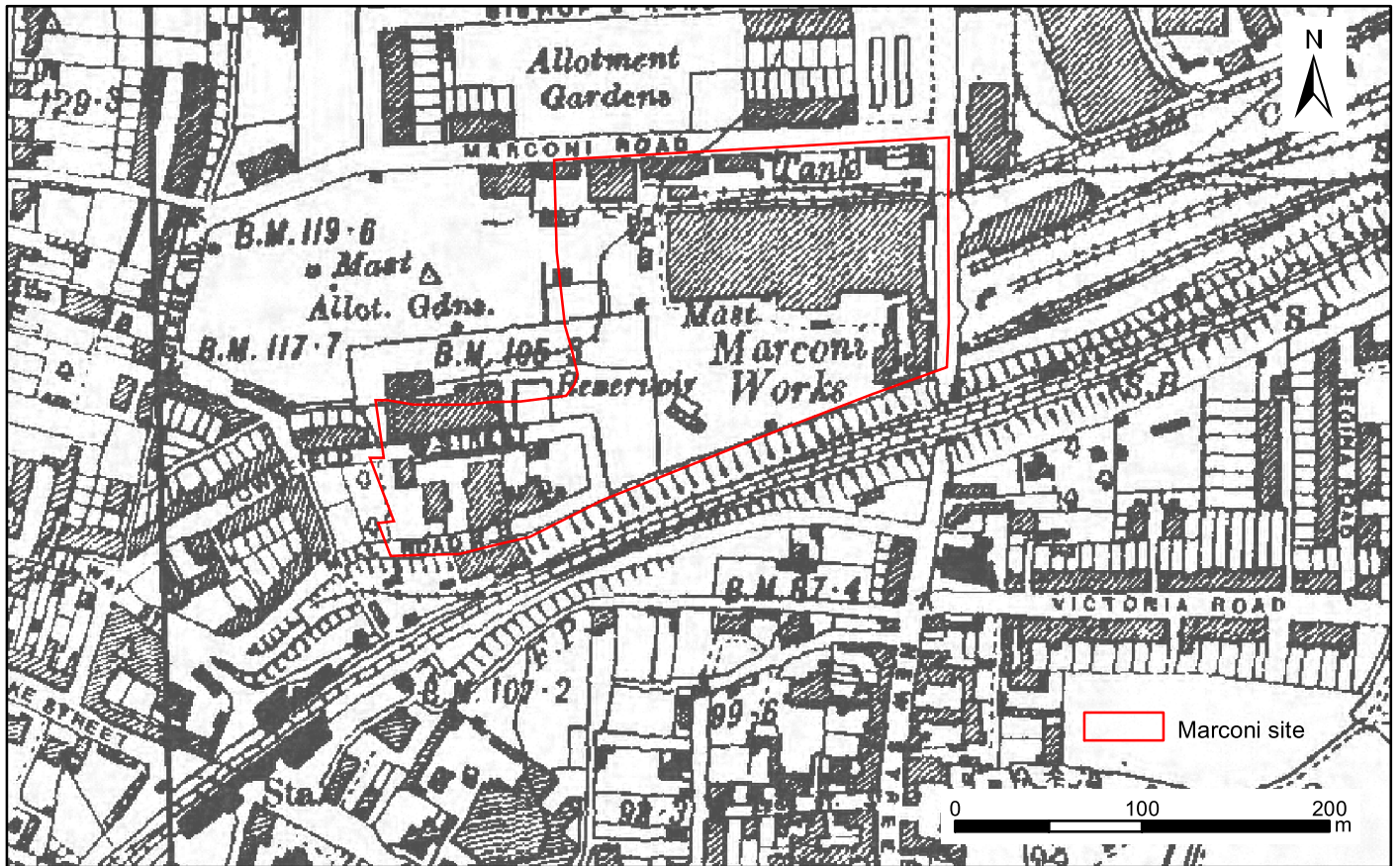
Fig.1. Site location and layout

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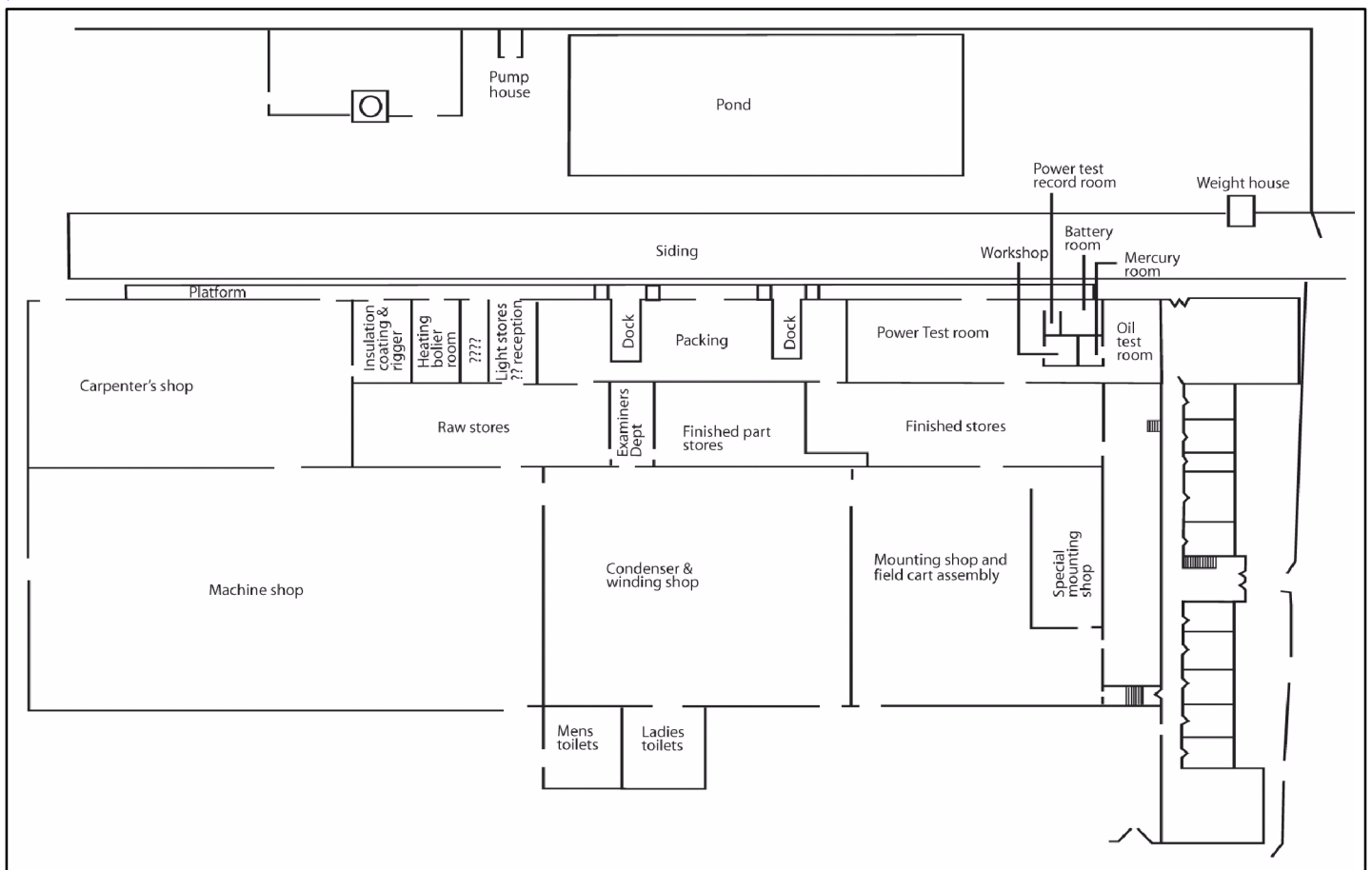


Fig.2. Phase plan

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Extract from 3rd Edition Ordnance Survey 6" (1919)



1912 Factory plan (Burgess 2006)

Figure 3

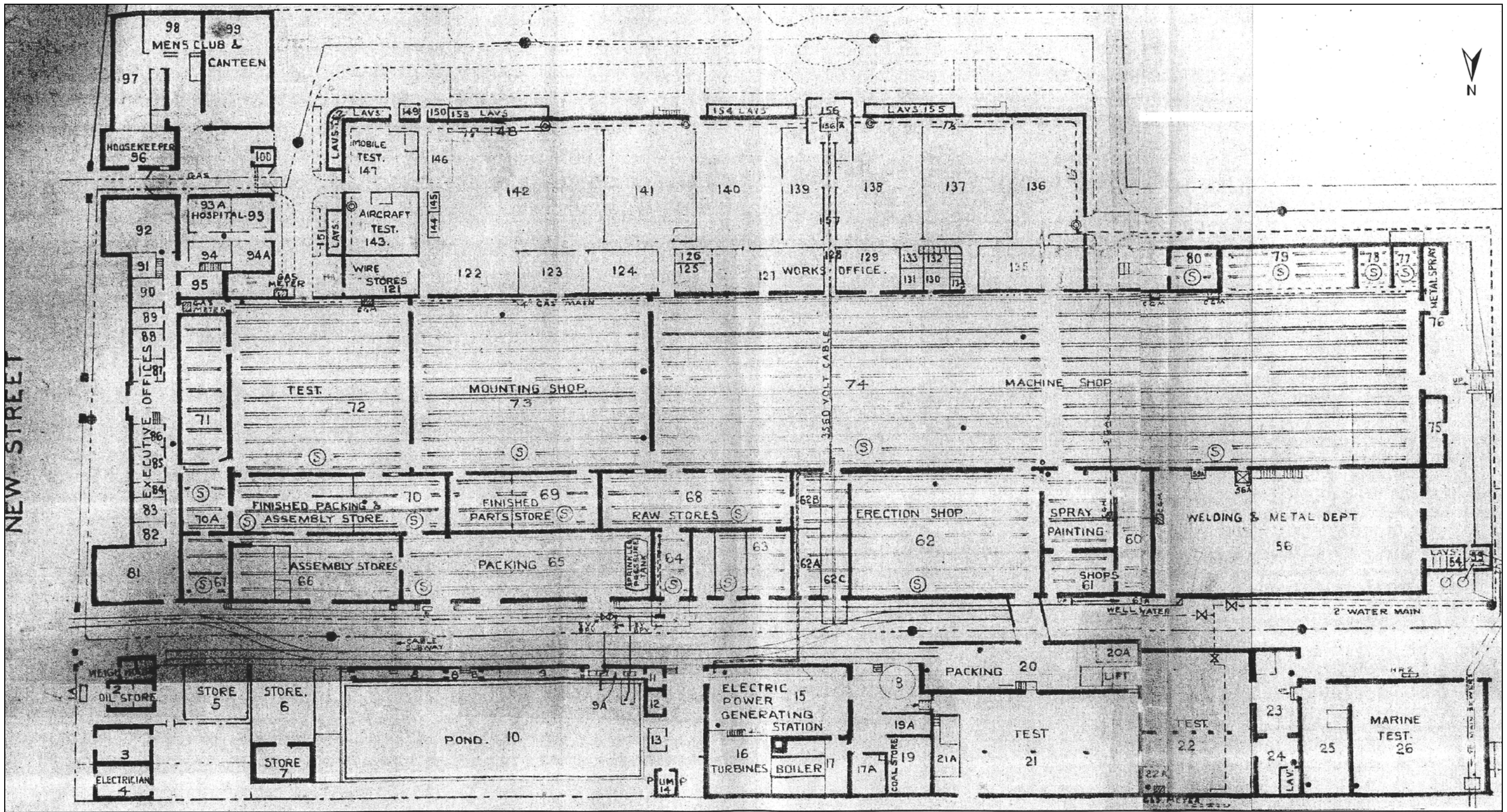


Fig. 4 1937 site plan – ground floor

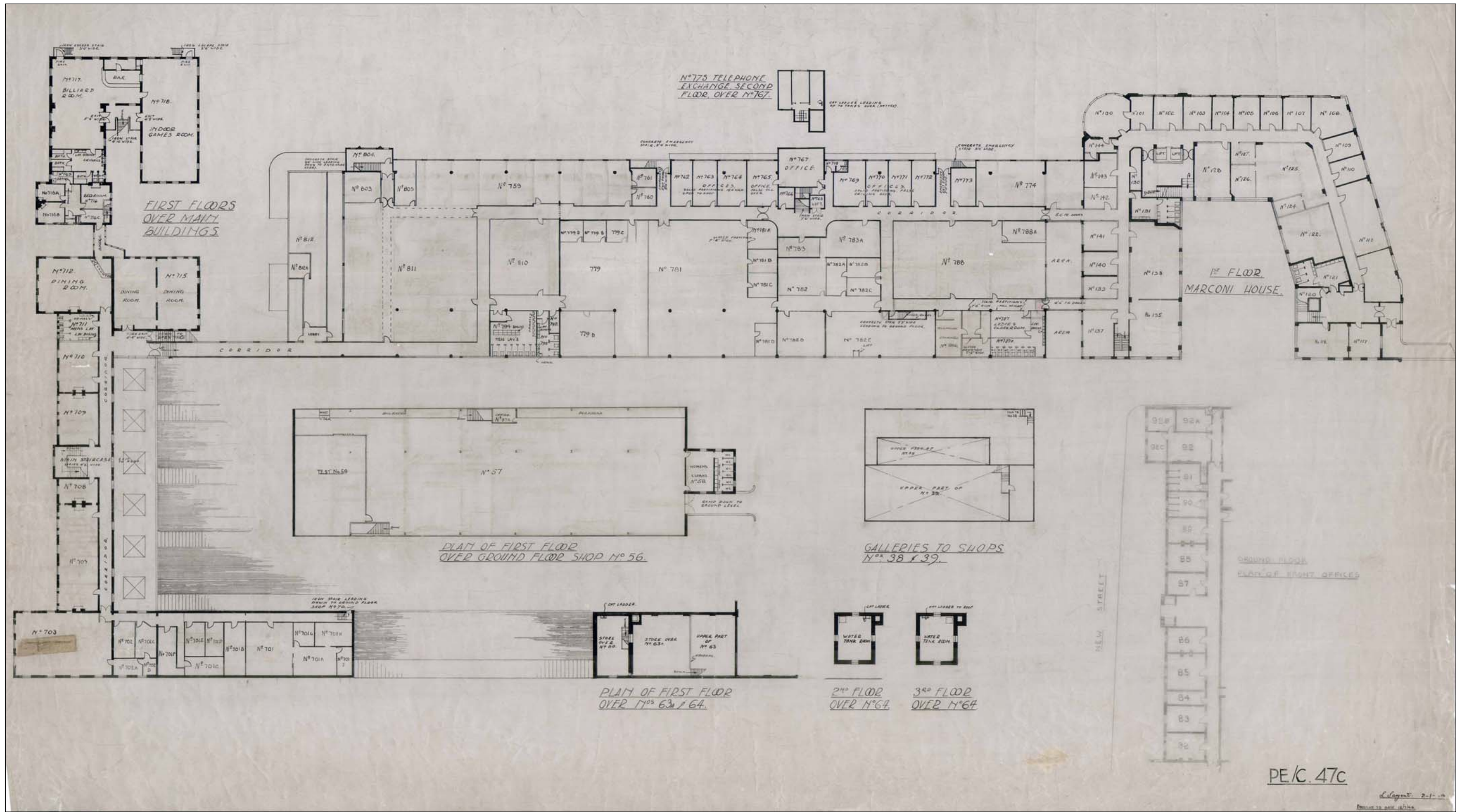


Fig.5. 1948 site plan – first floor

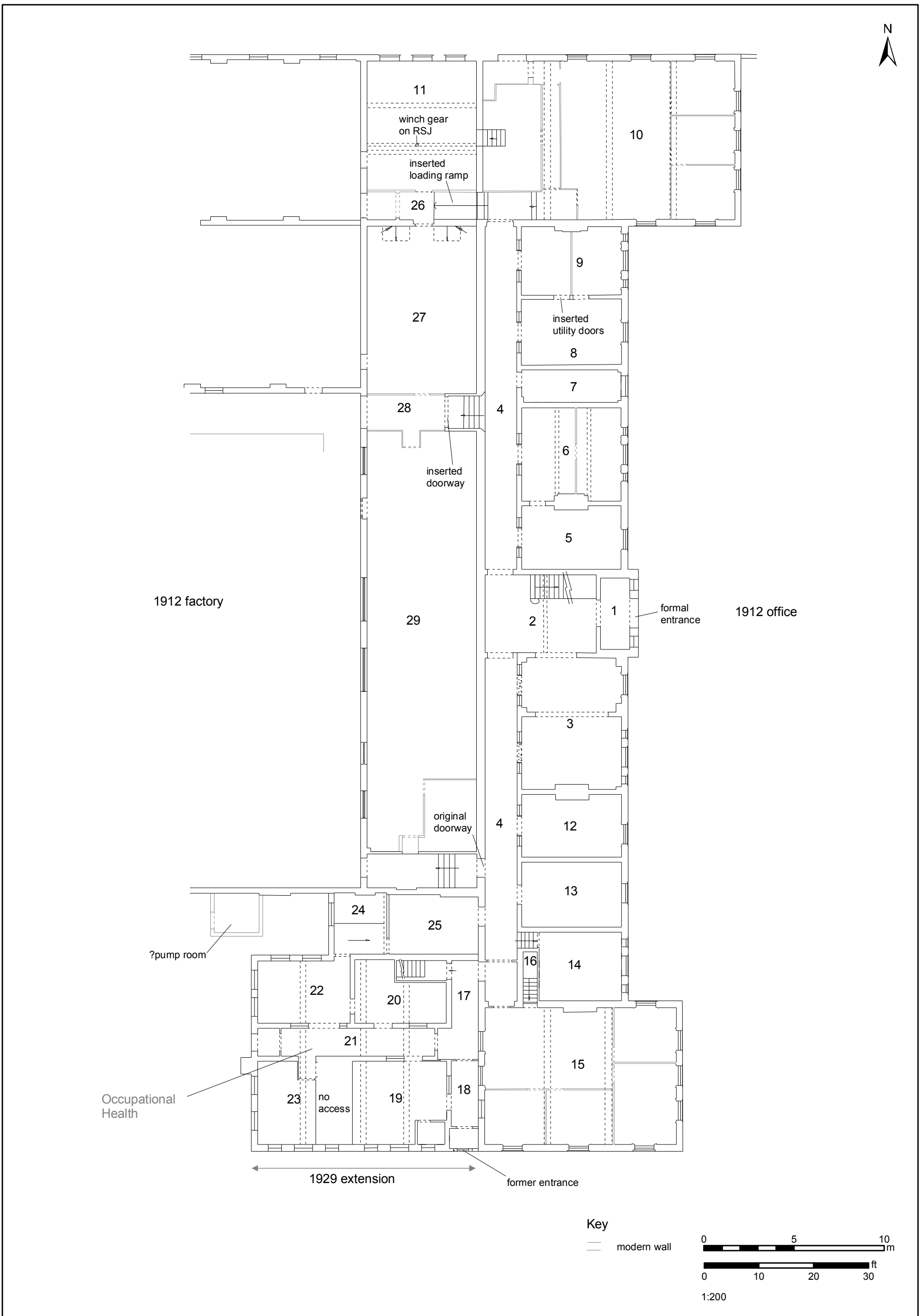


Fig.6a. 1912 offices and 1920s extension - ground floor plan

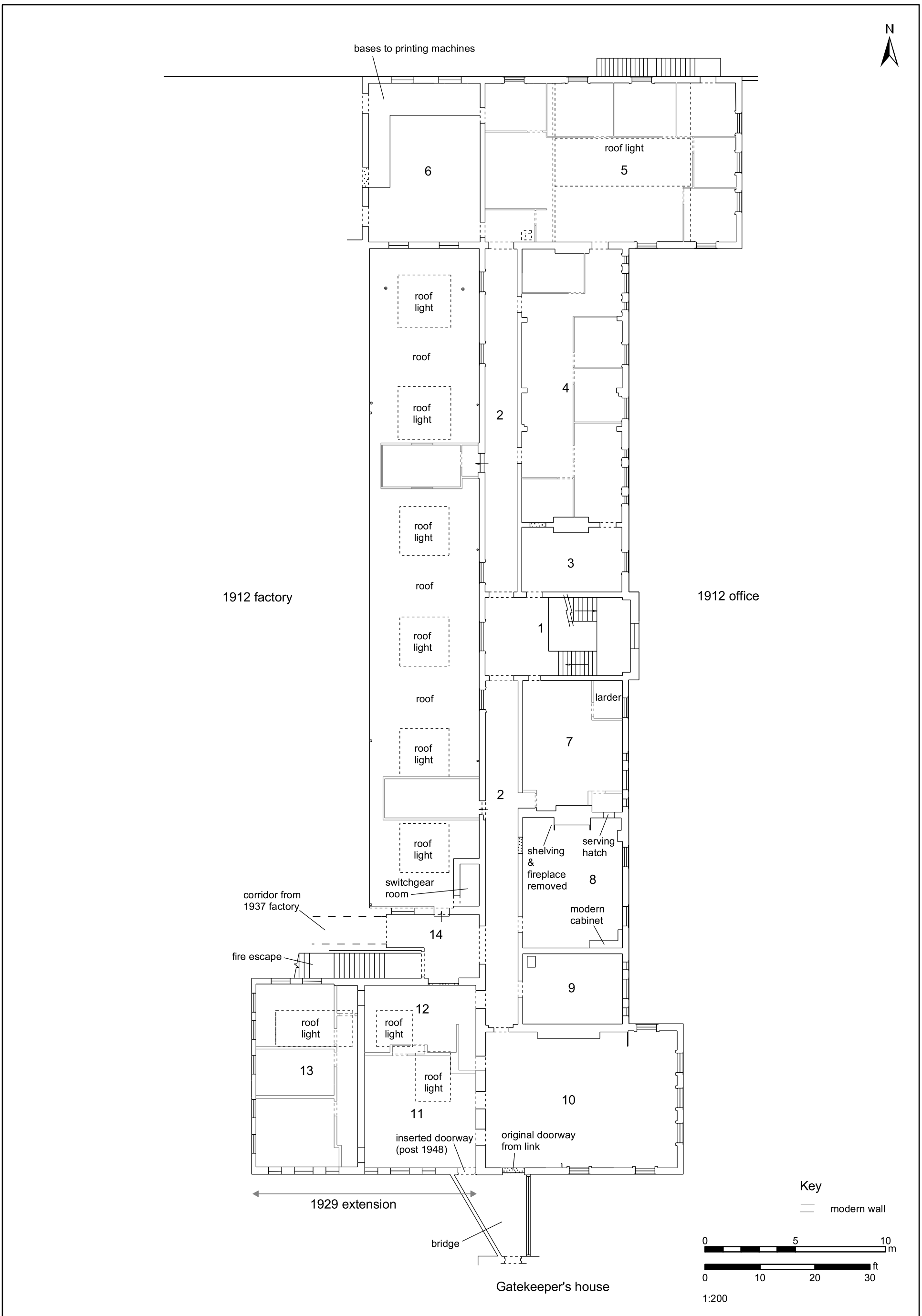


Fig.6b. 1912 offices and 1920s extension - first floor plan

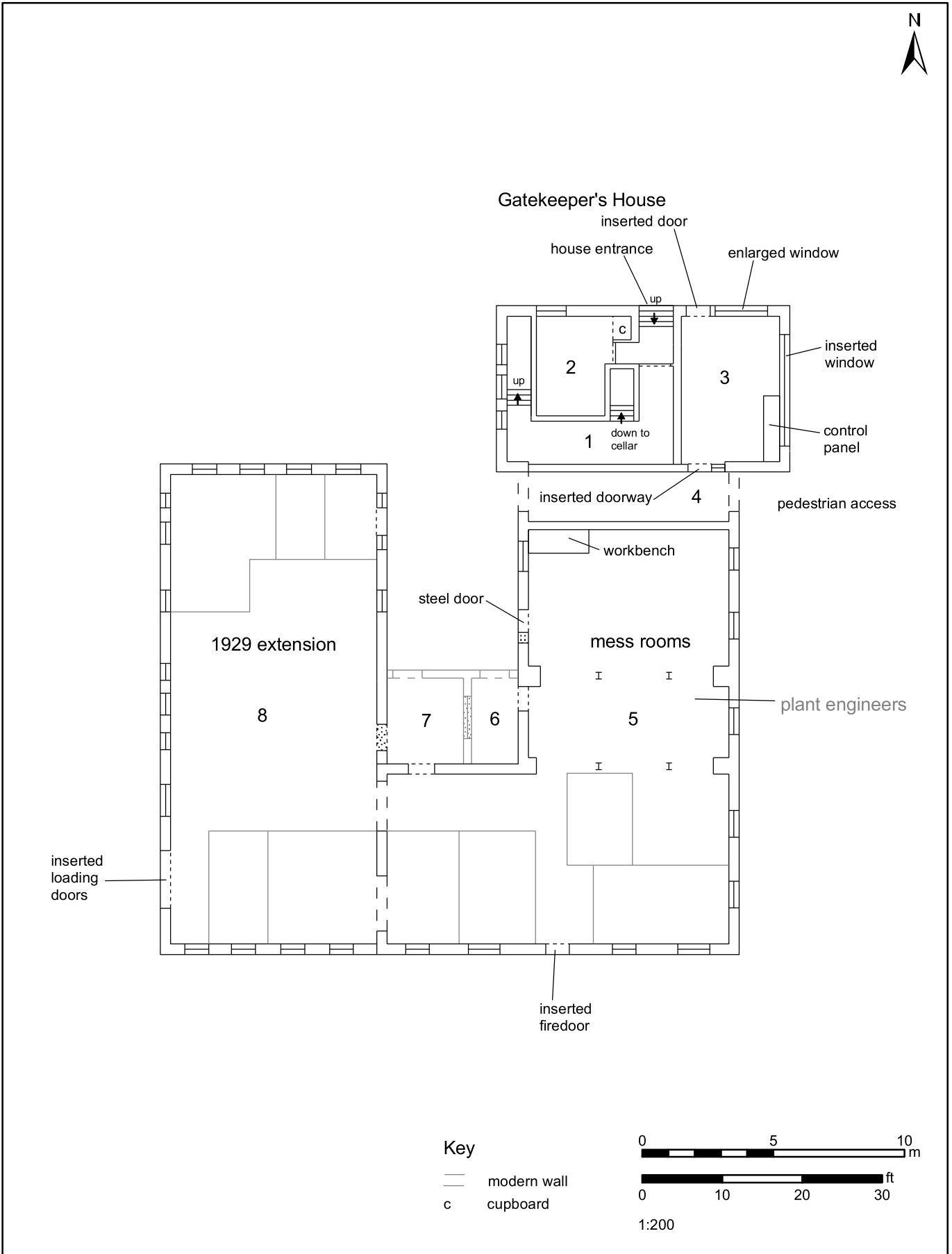


Fig.7a. Gatekeeper's house, mess rooms and 1920's extension - ground floor plan

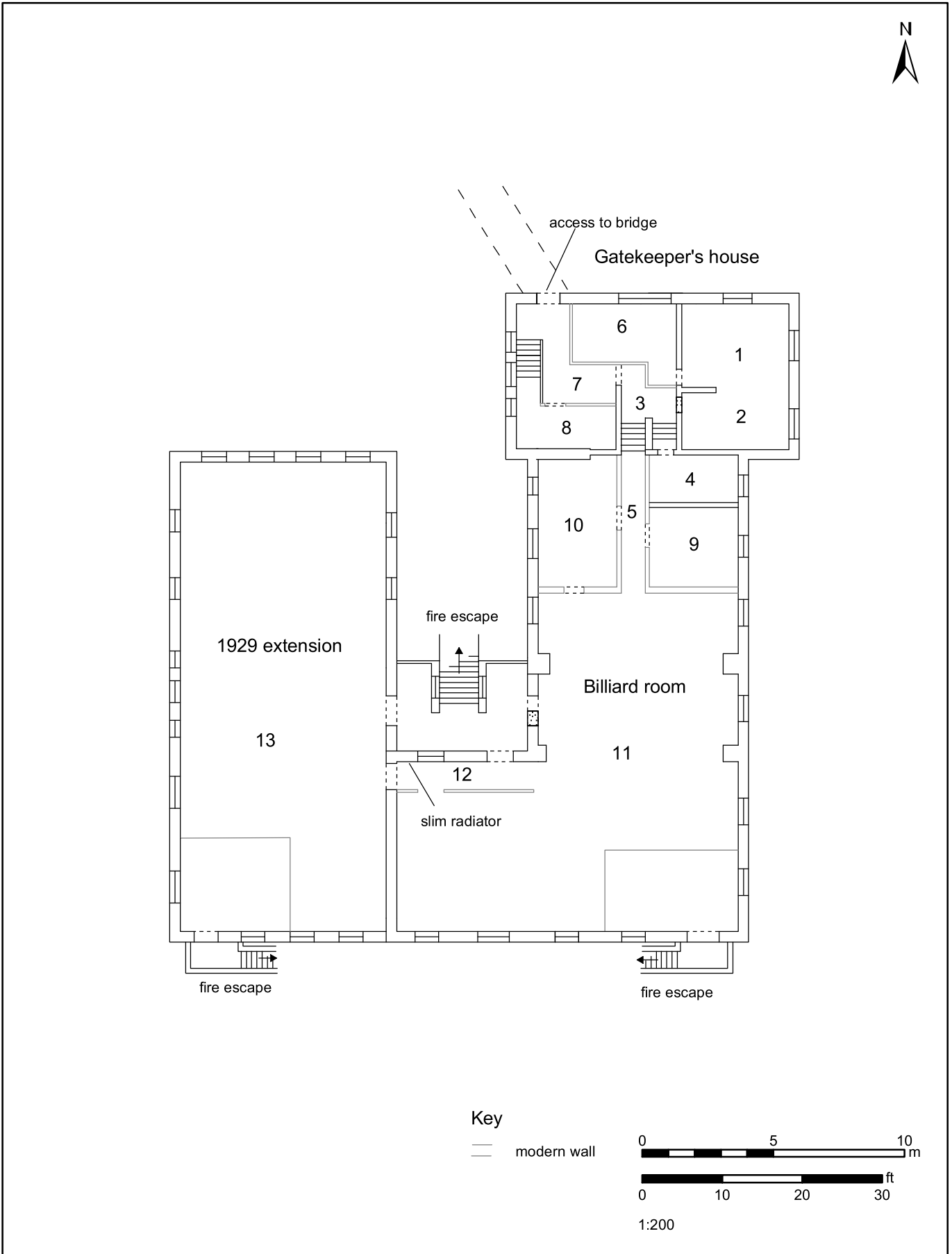


Fig.7b. Gatekeeper's house, mess rooms and 1920's extension - first floor plan

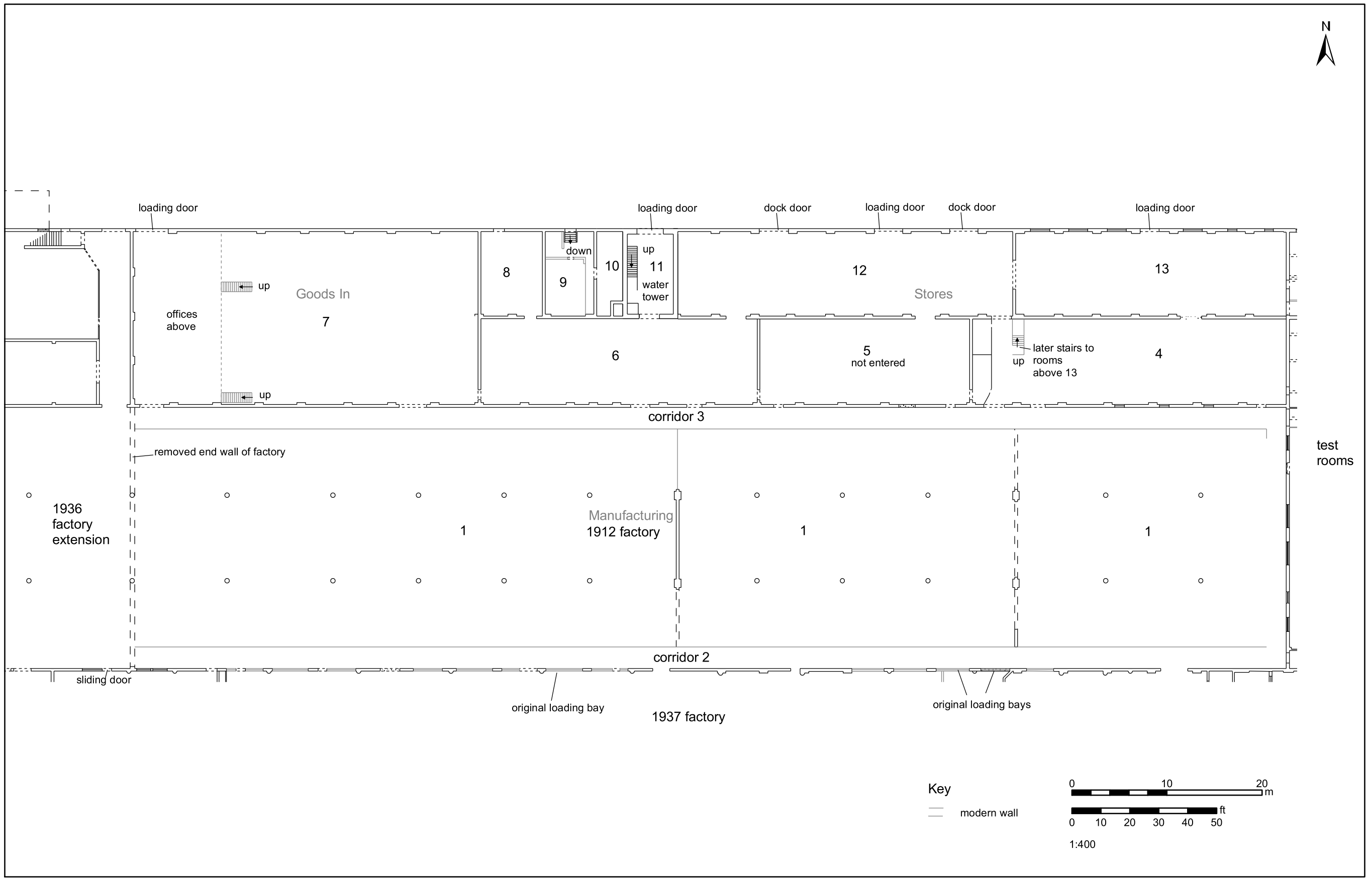


Fig.8. Plan of 1912 factory

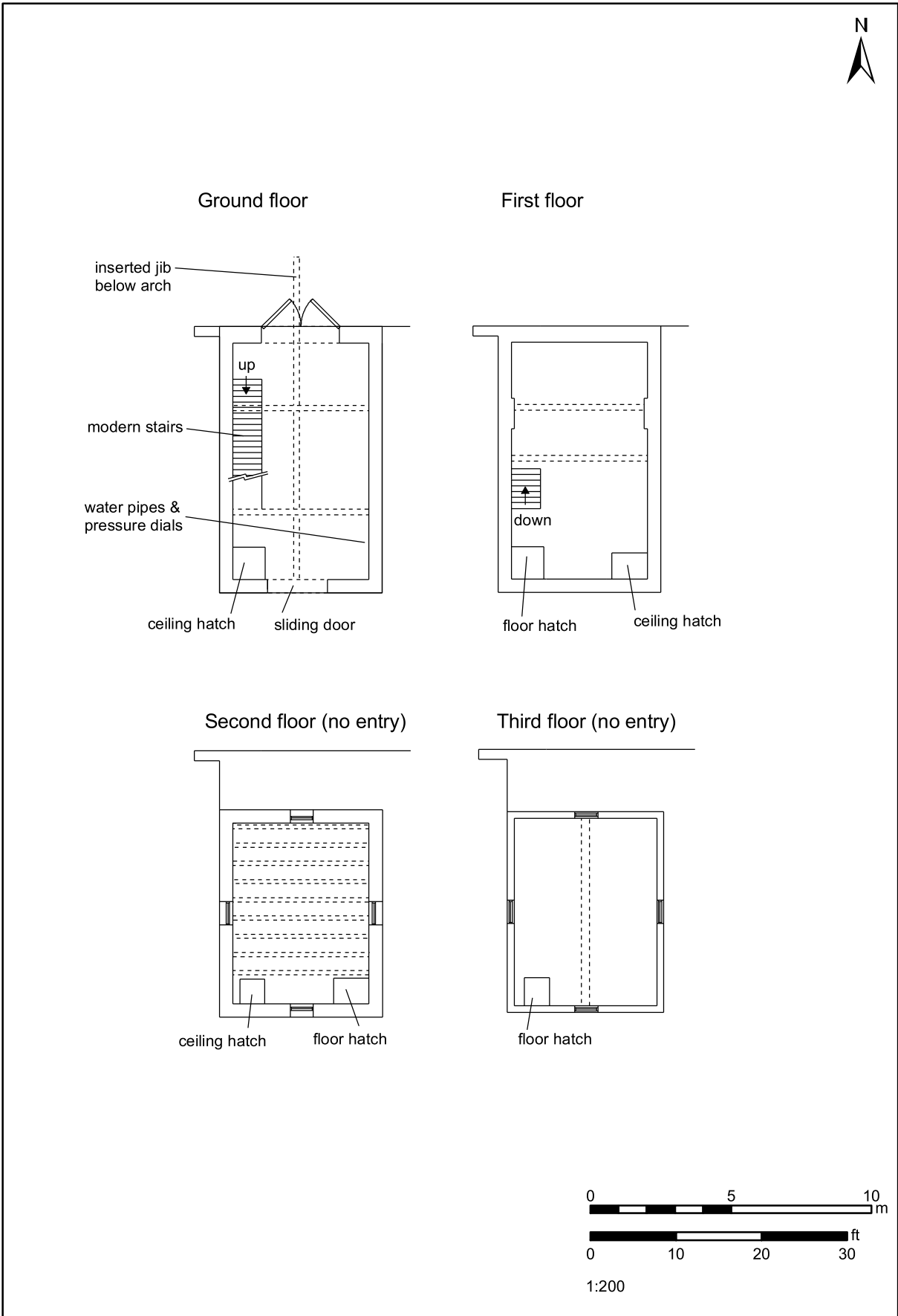


Fig.9. Water tower plans

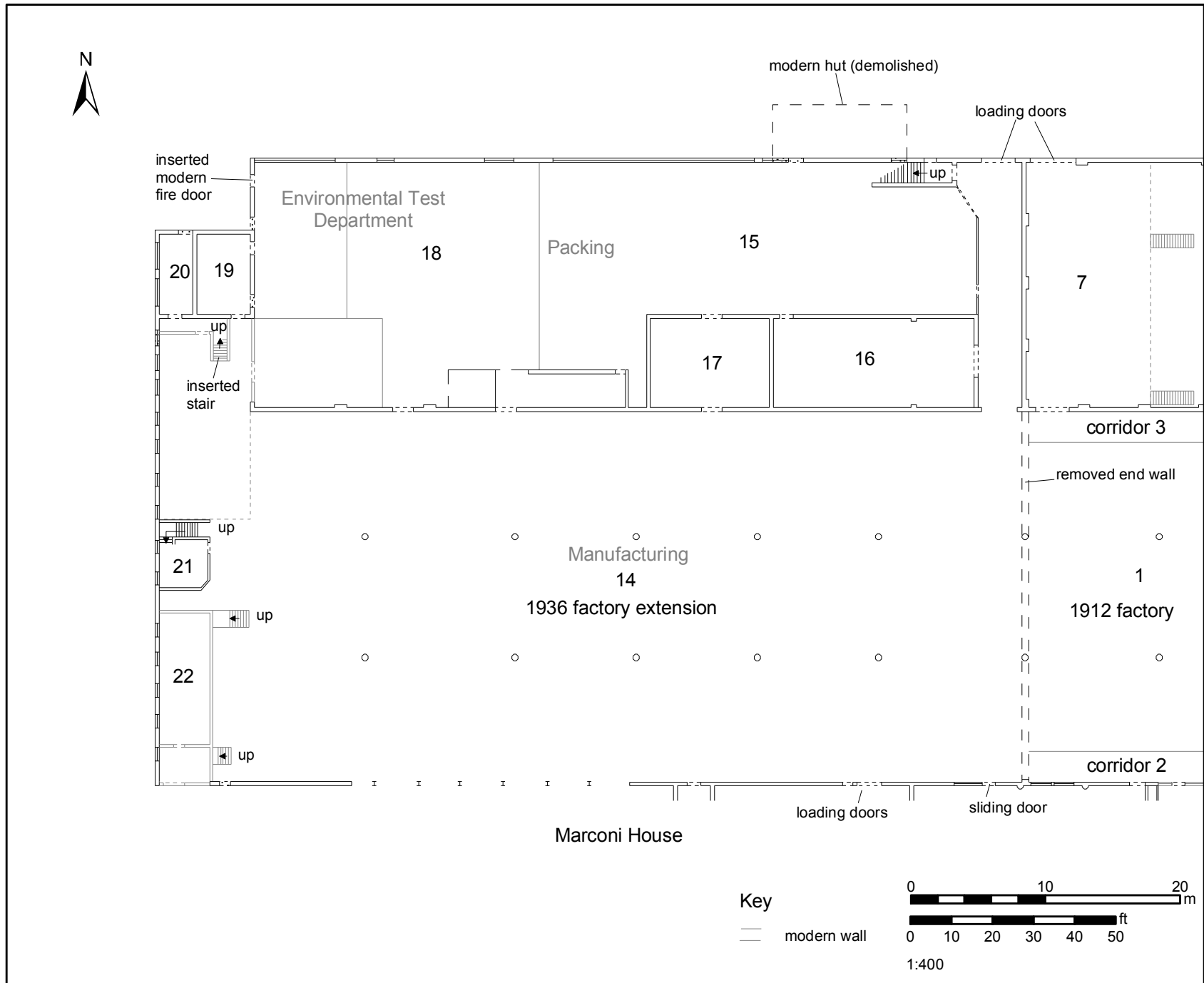


Fig.10. Plan of 1936 factory extension

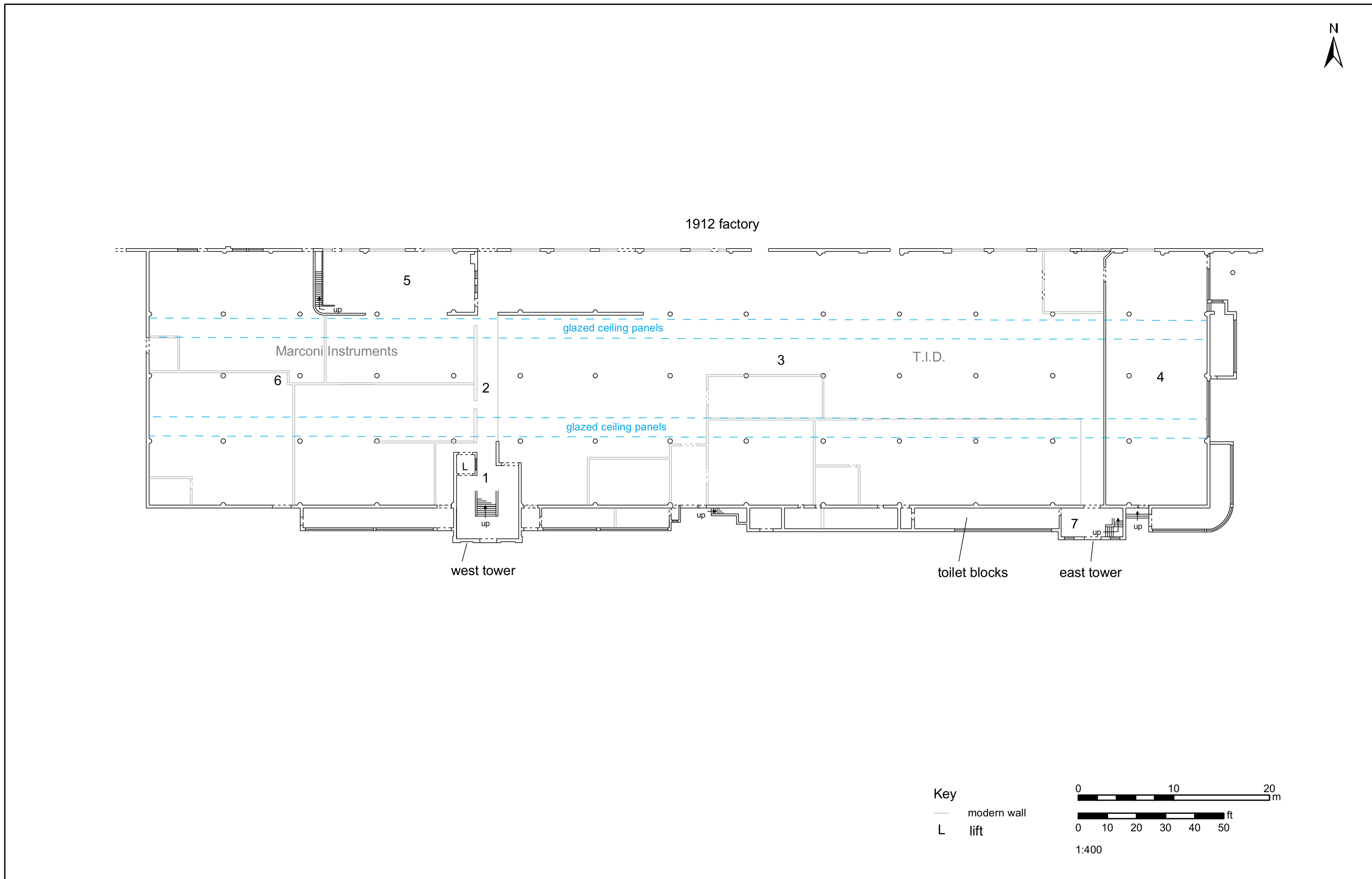


Fig.11a. Plan of 1937 factory - ground floor

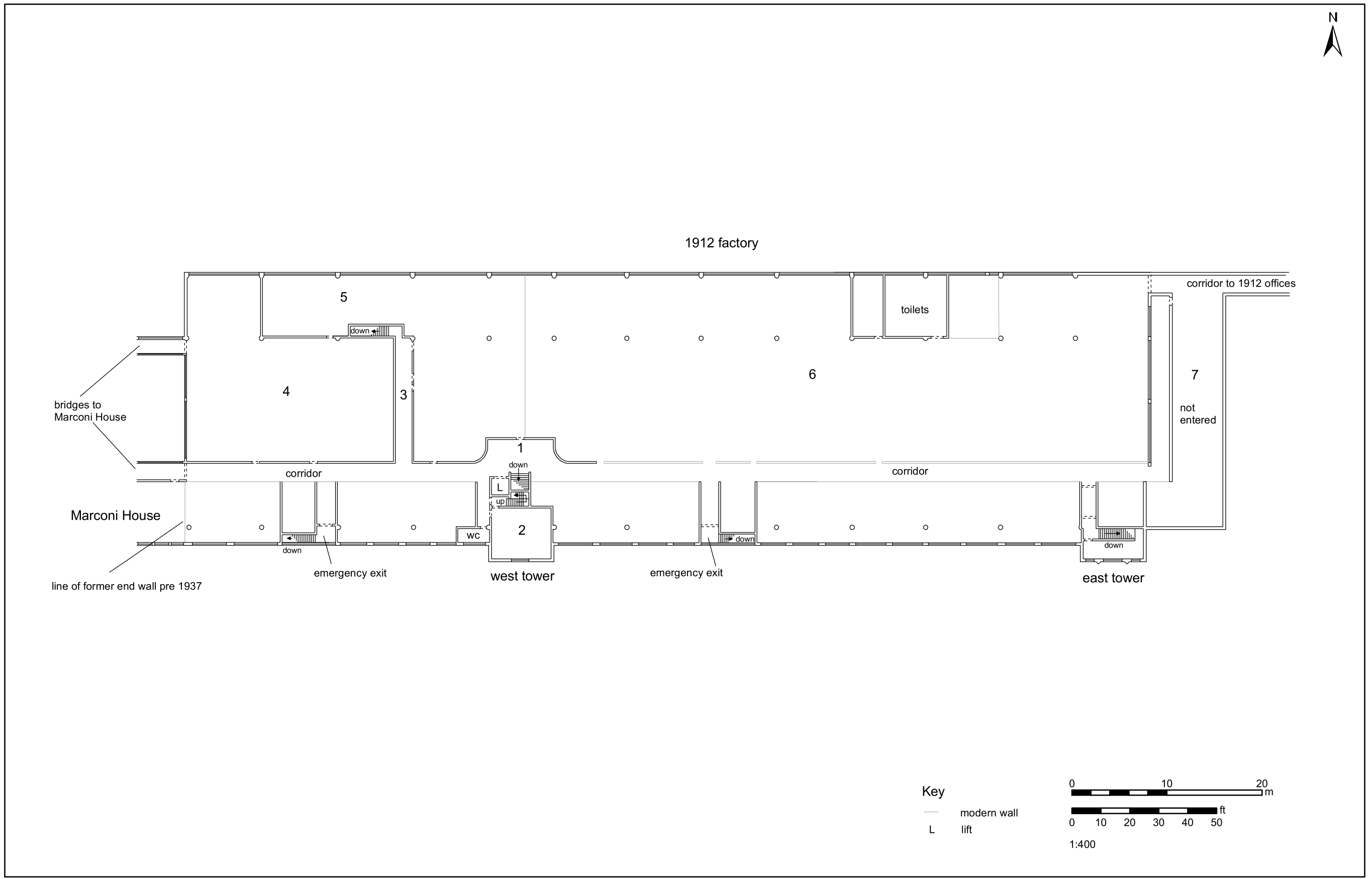


Fig.11b. Plan of 1937 factory - first floor

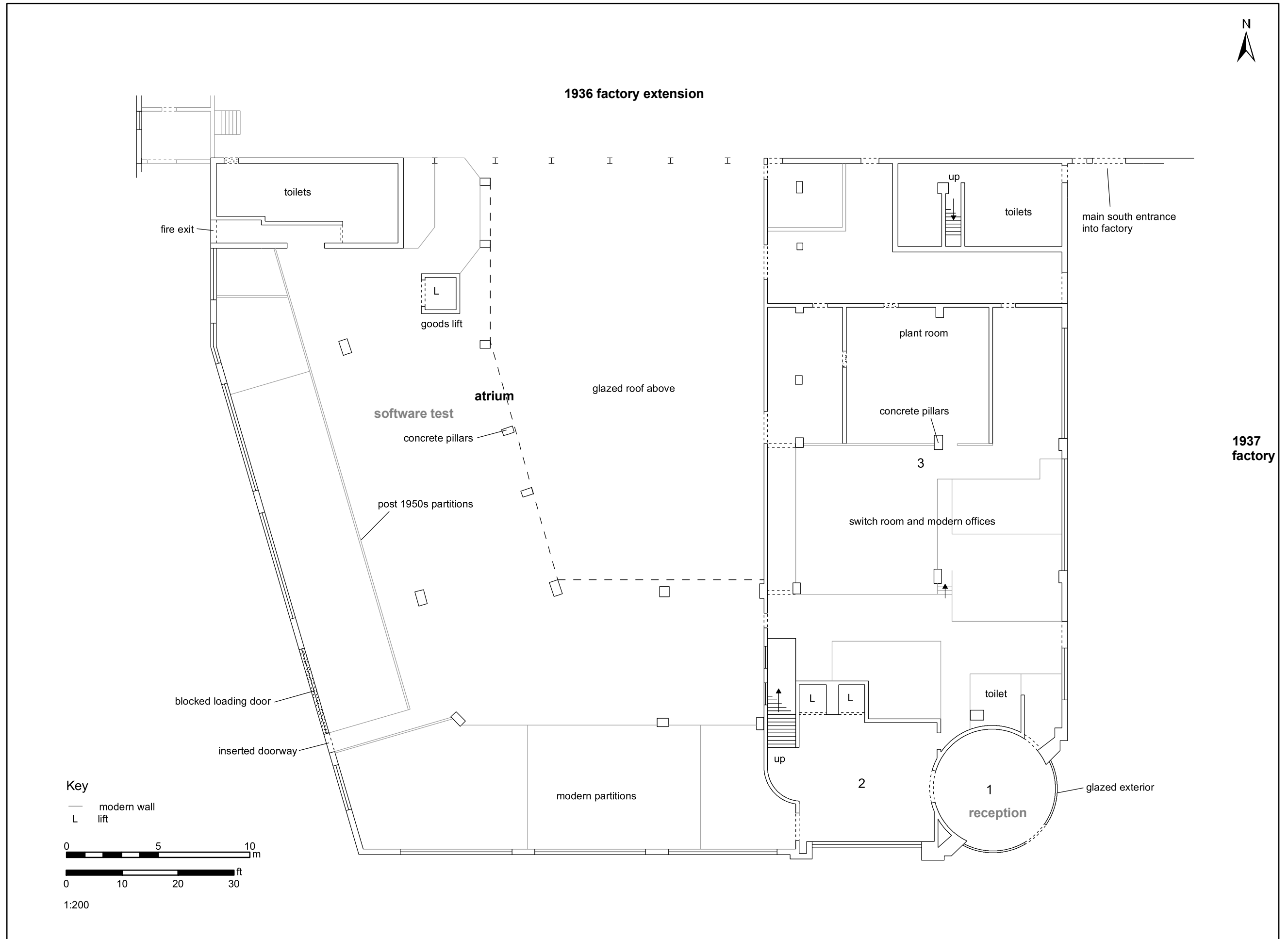


Fig.12a. Marconi House - ground floor plan

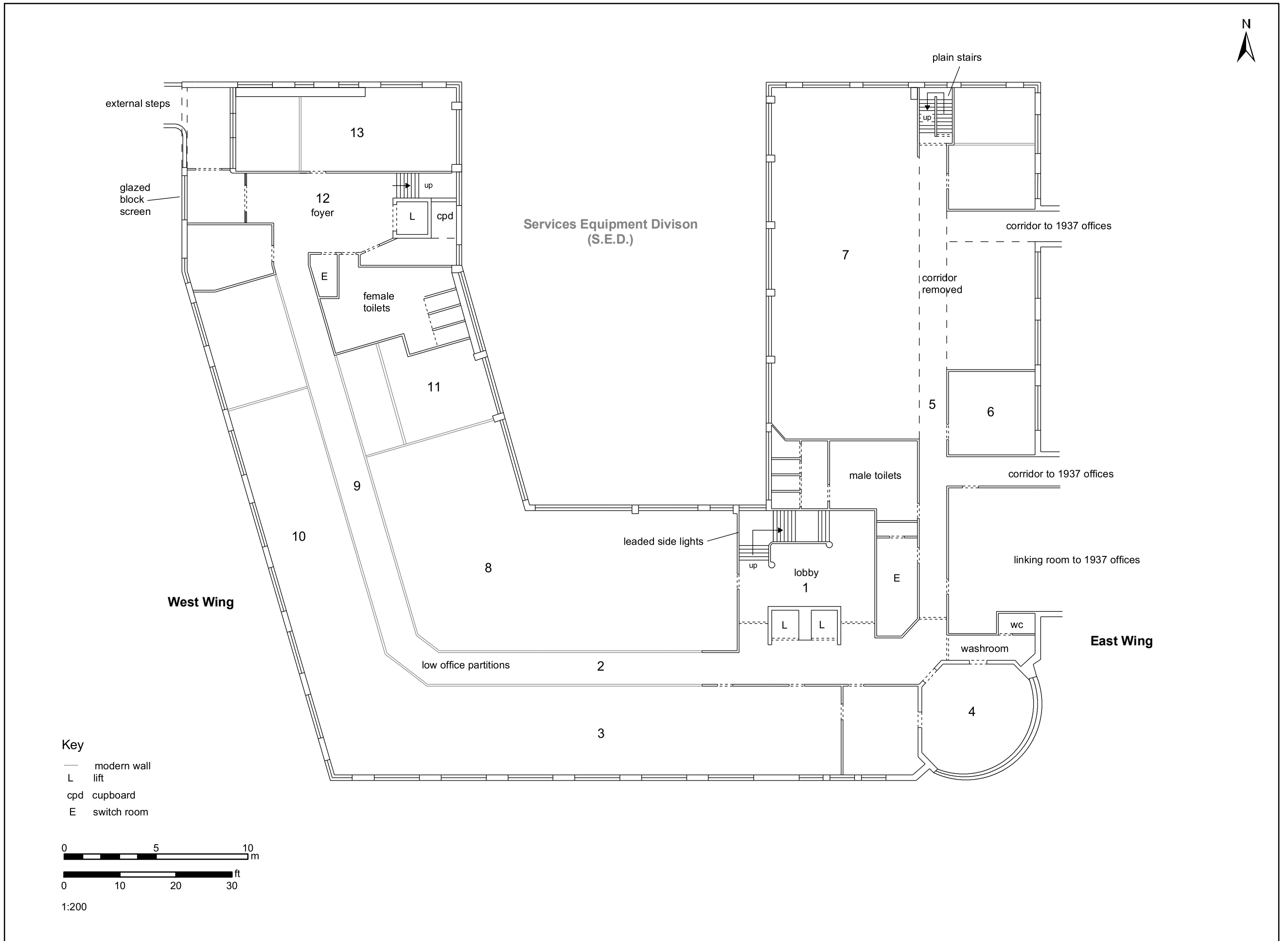


Fig.12b. Marconi House - first floor plan

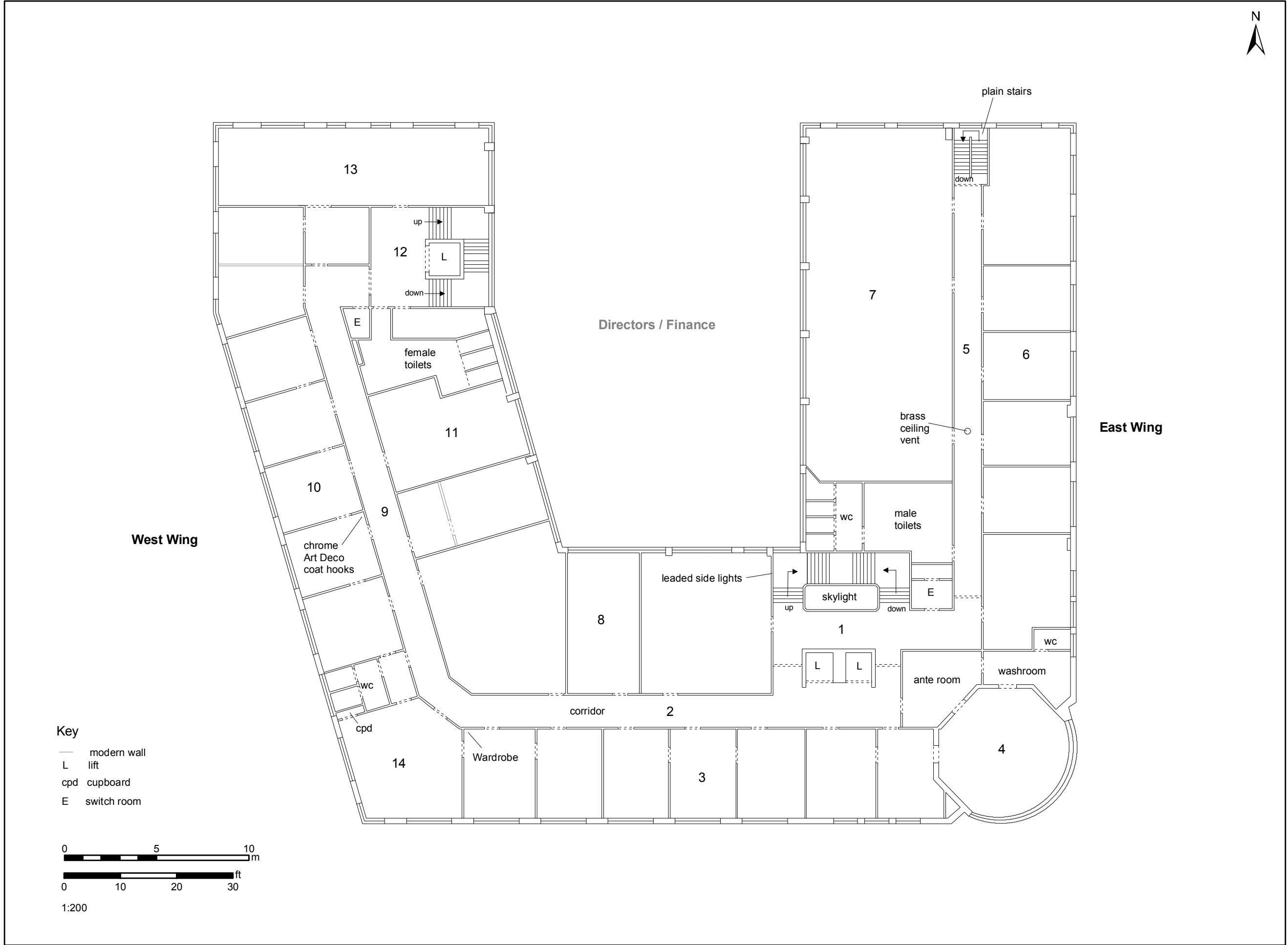


Fig.12c. Marconi House - fourth floor plan

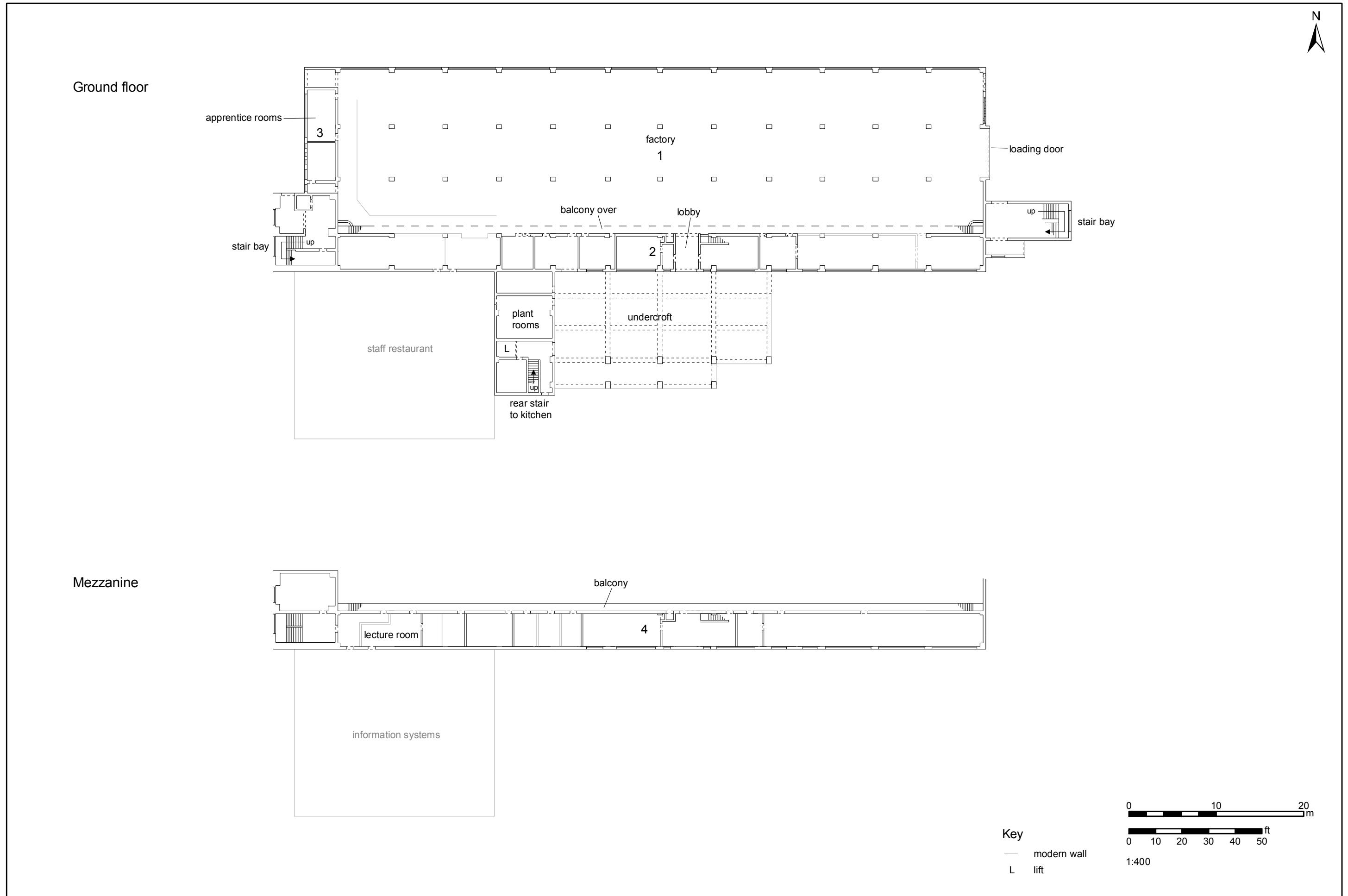


Fig.13a. Building 720 - ground & mezzanine floor plan

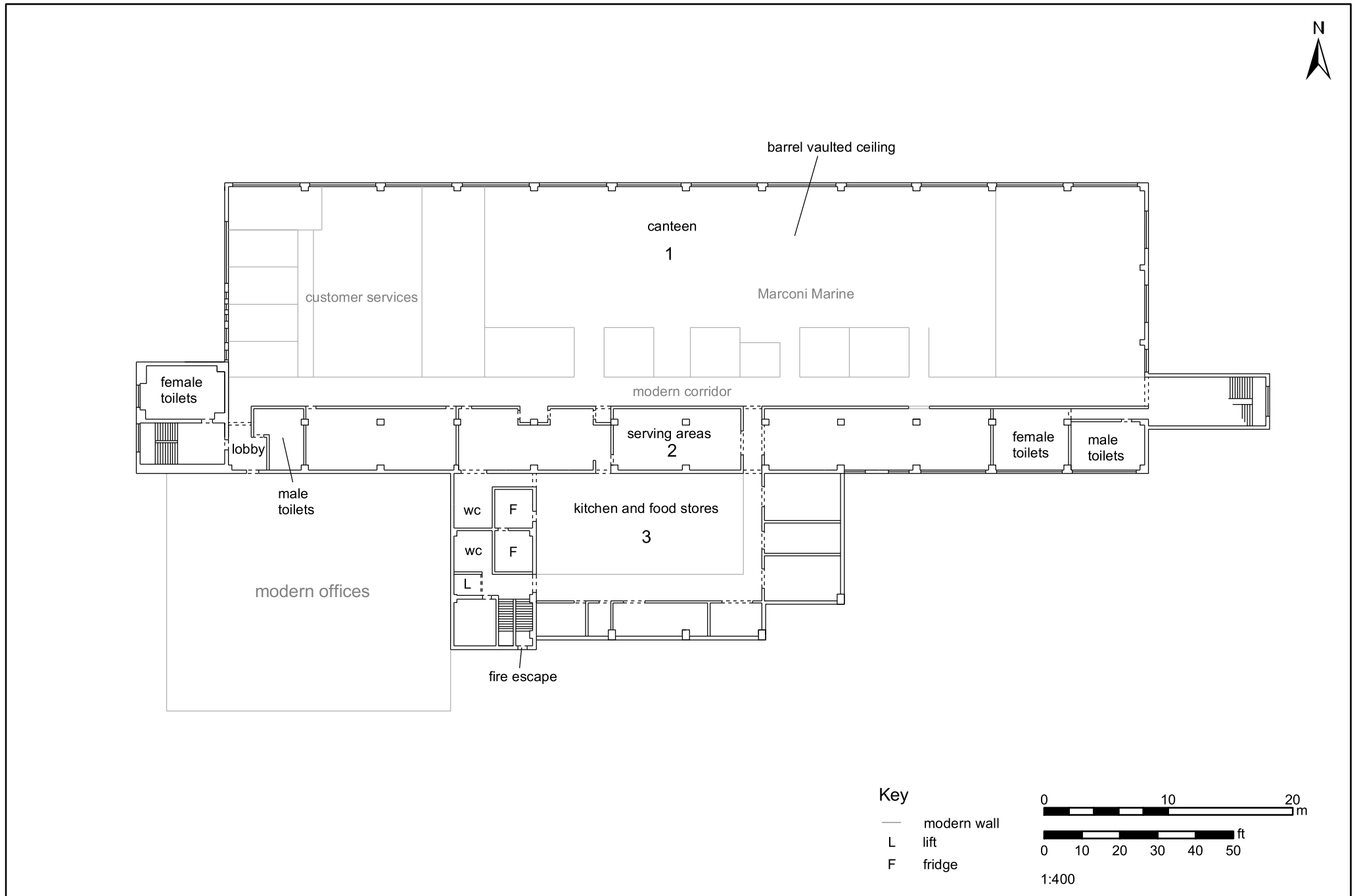


Fig.13b. Building 720 - first floor plan

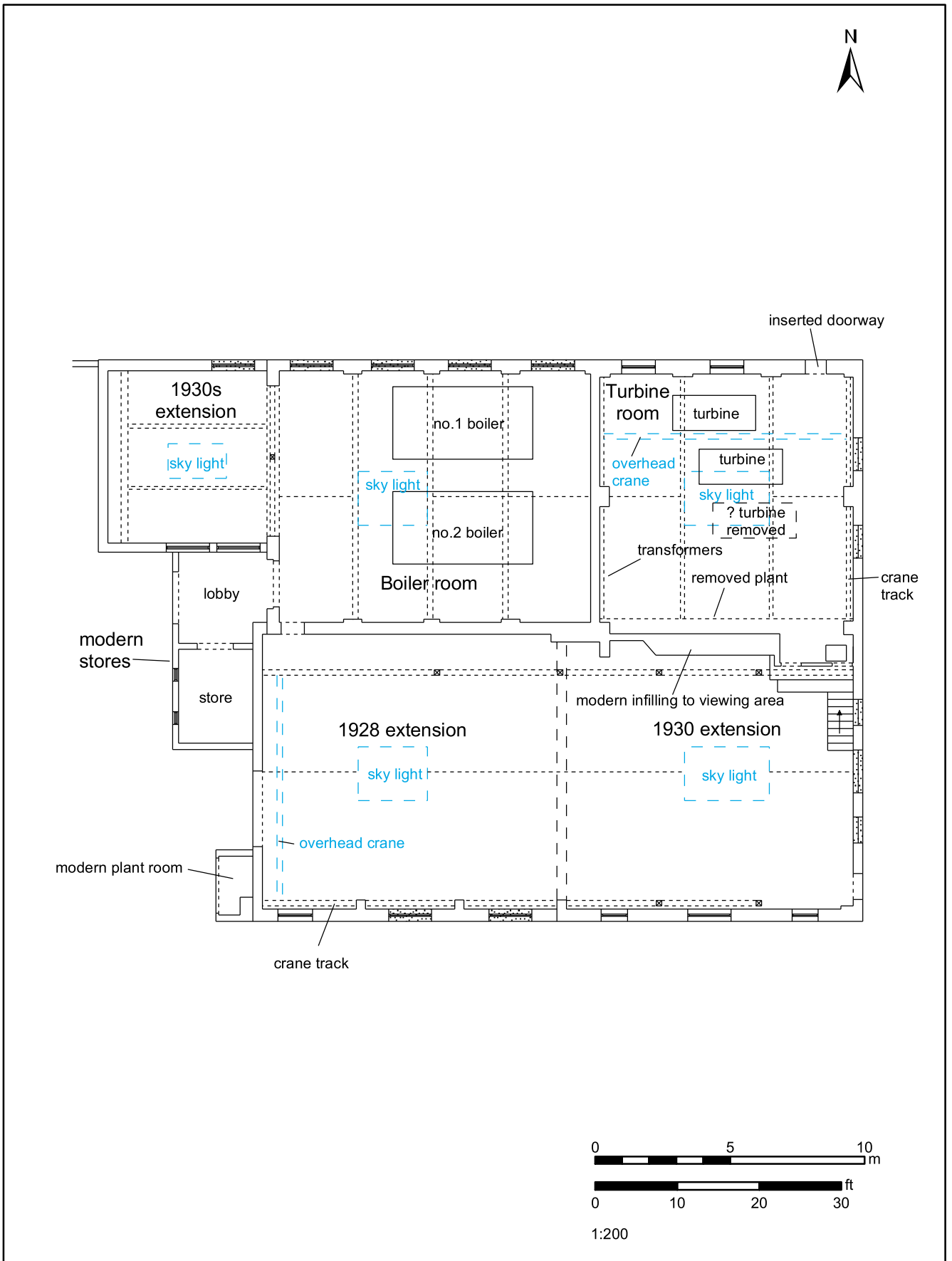


Fig.14. Power house plan

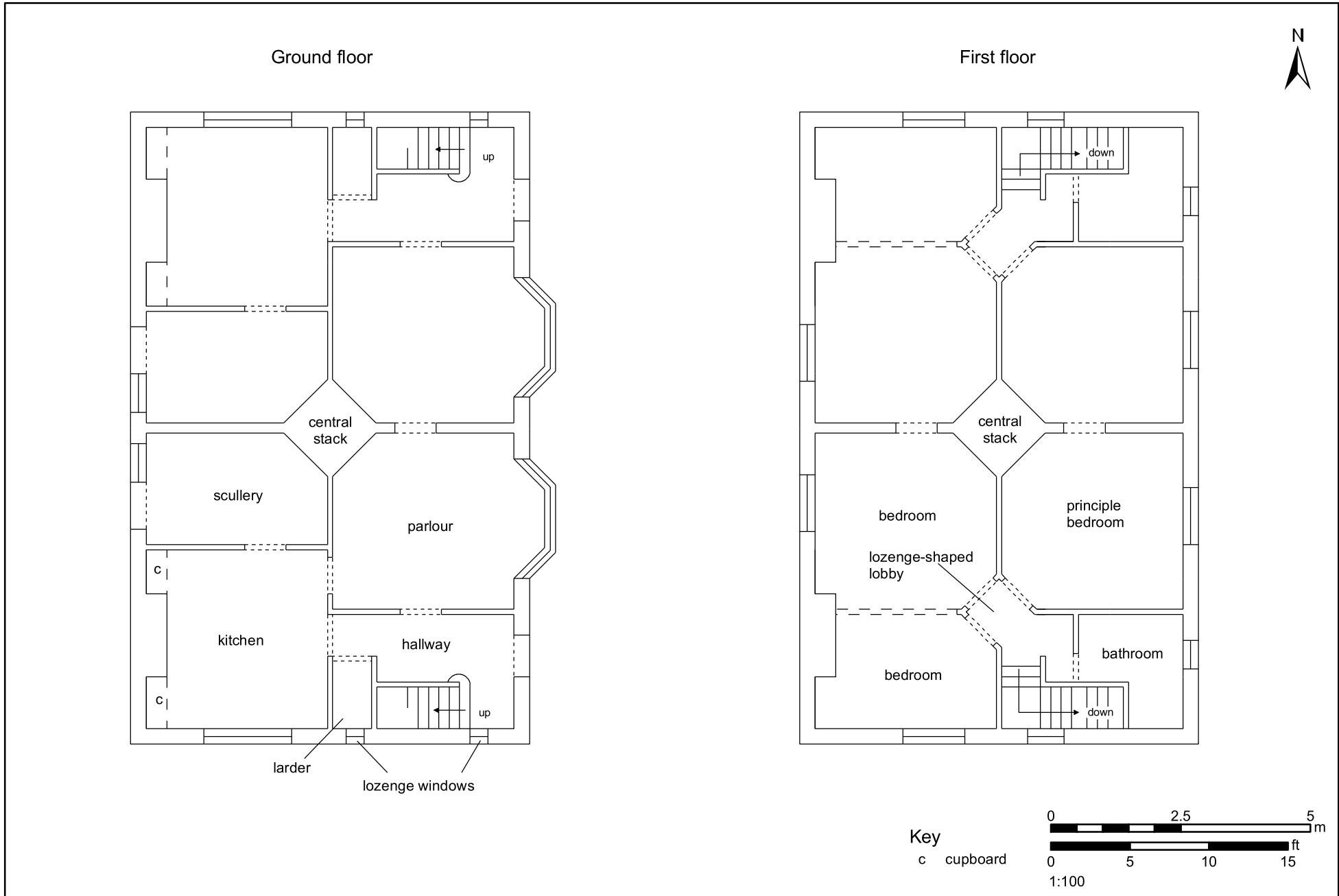


Fig.15. Plan of cottages



Plate 1 1912 Offices viewed to north-west



Plate 2 1912 Offices viewed to south-west

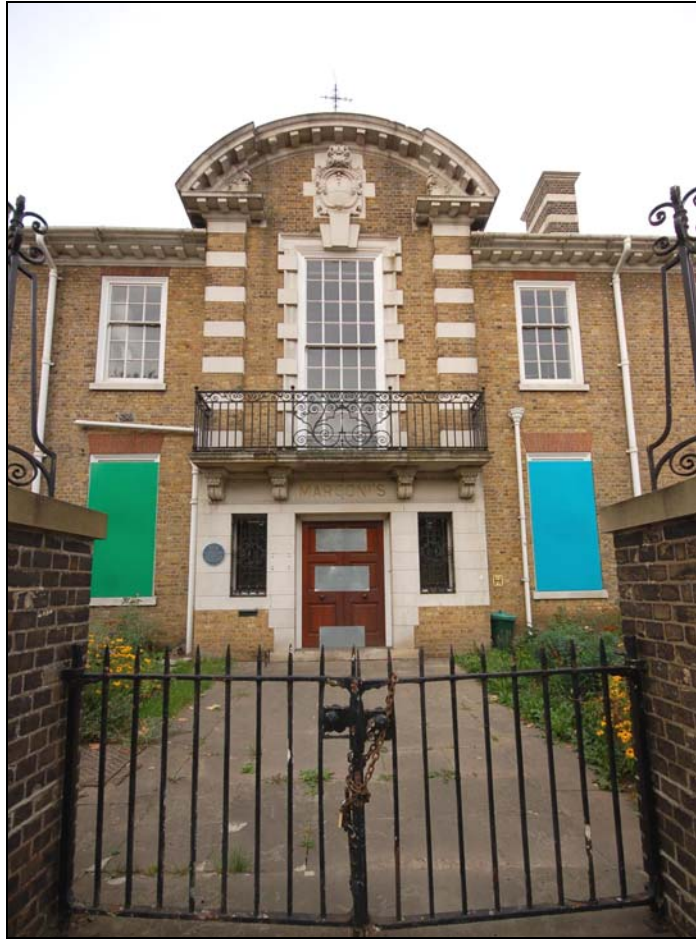


Plate 3 Main entrance to 1912 offices



Plate 4 North elevation of 1912 offices



Plate 5 1929 extension to 1912 offices viewed to north-east, with bridge over gateway



Plate 6 Entrance lobby 1



Plate 7 Stair hall 2, viewed to north-east



Plate 8 Stair hall 2 and entrance to room 3



Plate 9 Typical office doorway



Plate 10 Corridor 4 in office range



Plate 11 Room 5



Plate 12 Former showroom (10)



Plate 13 Room 12



Plate 14 Accounts office (15)



Plate 15 Test room 27



Plate 16 Inserted corridor between offices and 1912 factory



Plate 17 Room 18, Occupational Health reception



Plate 18 Treatment room 19



Plate 19 Stairs viewed to first floor landing



Plate 20 First floor landing viewed to east



Plate 21 Ventilation grill observed in room 3 on first floor of 1912 offices



Plate 22 Room 4 after stripping-out, viewed to south



Plate 23 Drawing office 5 after stripping-out



Plate 24 Dining room 8



Plate 25 Dining room 10 viewed to north-west



Plate 26 Dining room 10 after stripping-out



Plate 27 Interior of covered bridge between offices and gatekeeper's house

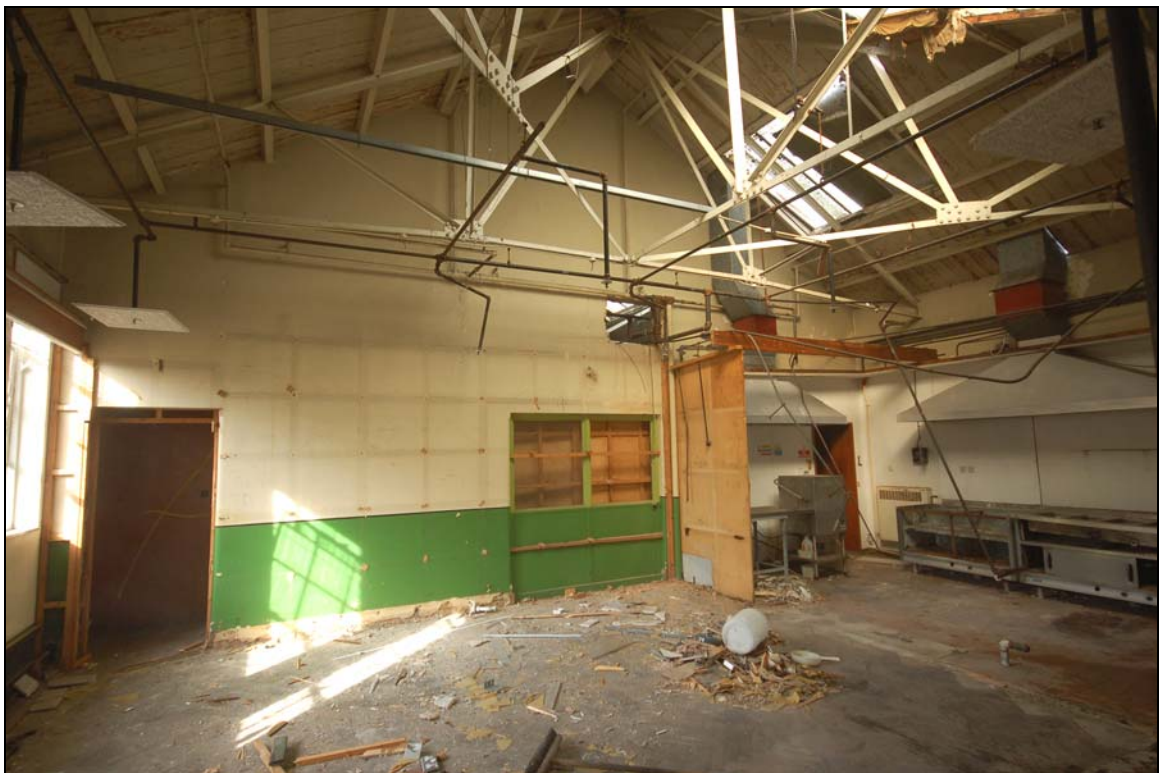


Plate 28 Room 11 (former 1929 drawing office)



Plate 29 Gatekeeper's house and mess rooms viewed to west



Plate 30 New Street gates looking towards the 1937 factory



Plate 31 External stair to mess rooms



Plate 32 Gatekeeper's house and mess rooms viewed to south-east



Plate 33 Mess rooms viewed to north-east



Plate 34 Entrance into 1929 extension beside modern turnstile



Plate 35 Monitors in control room 3



Plate 36 Interior of room 5, former mess room



Plate 37 Billiard room interior viewed to south



Plate 38 First floor corridor into 1929 extension



Plate 39 Room 13 in 1929 extension



Plate 40 North elevation of 1912 factory (east end)



Plate 41 North elevation of 1912 factory (middle part)



Plate 42 North elevation of 1912 factory (west end)



Plate 43 Exposed arch on south elevation of 1912 factory

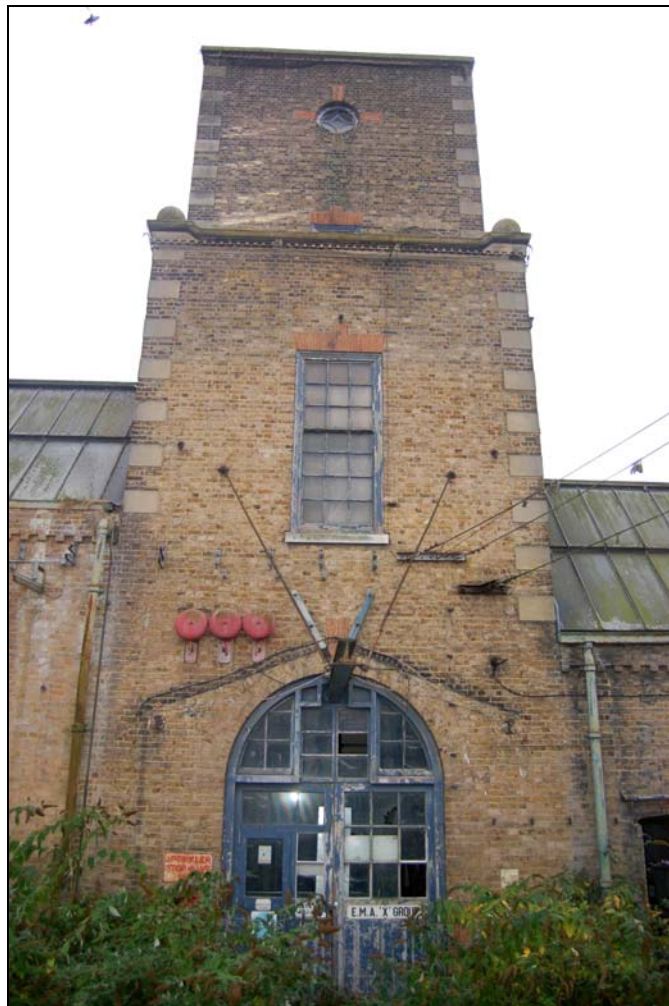


Plate 44 North elevation of water tower



Plate 45 Water tower viewed to north-east over factory rooftops



Plate 46 Interior of 1912 factory viewed to east



Plate 47 1930s partitioning on south wall of 1912 factory



Plate 48 Electric light switch board



Plate 49 Typical factory sliding door



Plate 50 Room 4 (former 1912 finished stores) viewed to west



Plate 51 Former packing room 12



Plate 52 Typical factory loading door from railway siding



Plate 53 Interior of water tower (ground floor) looking into factory



Plate 54 North elevation of 1936 factory extension



Plate 55 West elevation of 1936 factory extension



Plate 56 Interior of 1936 factory extension, viewed to west



Plate 57 Selex Environmental Test department (room 18)



Plate 58 1930s doorway in room 18



Plate 59 Office area 21 at west end of 1936 factory



Plate 60 First floor office 21, with view over factory floor



Plate 61 West end of 1937 factory, with Marconi House to left



Plate 62 West tower



Plate 63 East end of 1937 factory



Plate 64 Fire escape stair



Plate 65 1937 factory viewed to north-west



Plate 66 West elevation of 1937 factory, with bridge to Marconi House on right



Plate 67 Art Deco stair in west tower



Plate 68 Factory interior viewed to north-east (outer wall of 1912 factory)



Plate 69 hard-boarded partition to room 4



Plate 70 West tower stair



Plate 71 Corridor between 1912 offices and 1937 factory



Plate 72 View along corridor 1 on first floor (from west)



Plate 73 Typical corridor doorway



Plate 74 Typical fire escape doorway



Plate 75 Lavatory beside first floor stair landing



Plate 76 Stairs to second floor above manager's office 2



Plate 77 First floor area 6 viewed to west



Plate 78 First floor area 4 viewed to north-west



Plate 79 Marconi House viewed to west, with the 1937 factory



Plate 80 Marconi House rotunda



Plate 81 Rotunda base, with boarded entrance lobby



Plate 82 Marconi House viewed to north-east



Plate 83 West entrance into Marconi House



Plate 84 West elevation above atrium



Plate 85 Entrance lobby 1 viewed to north-east



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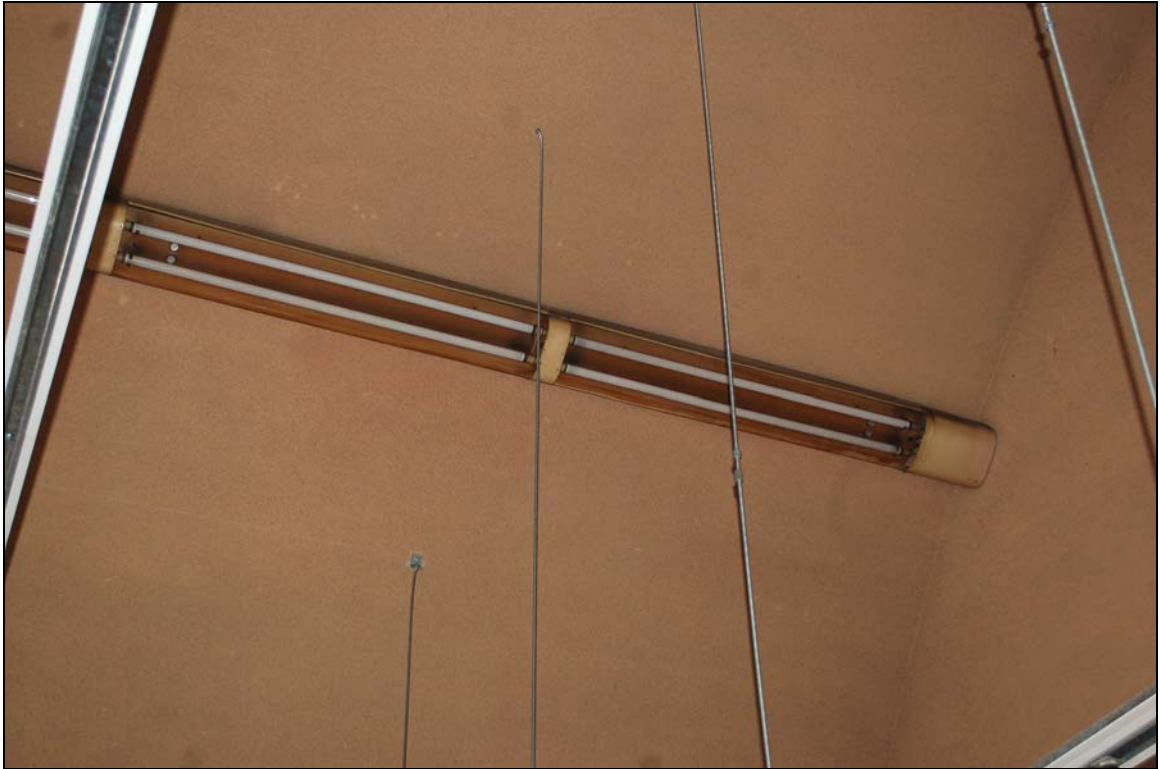


Plate 121 Original fluorescent lighting

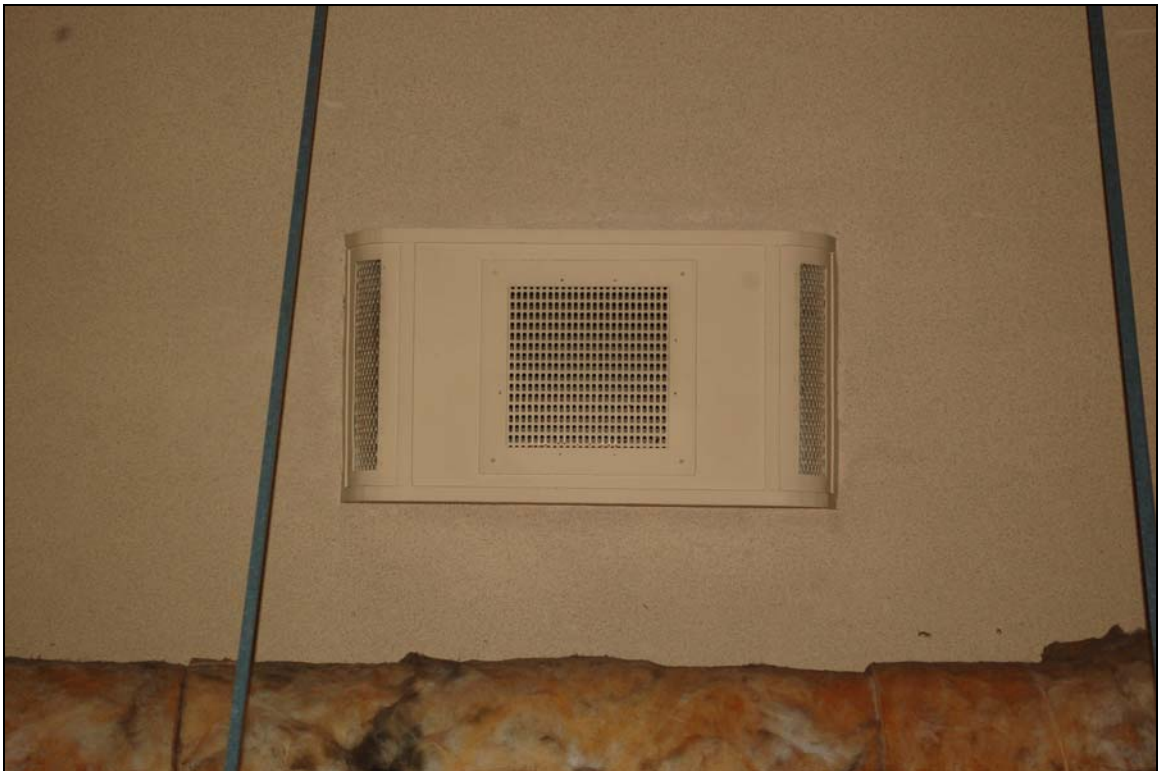


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THE MARCONI SITE, NEW STREET

CHELMSFORD

ESSEX

LEVEL 3 HISTORIC BUILDING RECORD



Essex County Council
Field Archaeology Unit

March 2013

THE MARCONI SITE, NEW STREET

CHELMSFORD

ESSEX

LEVEL 3 HISTORIC BUILDING RECORD

Prepared by: Andrew Letch Position: Project Officer	Signature: Date: 27th March 2013
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THE MARCONI WORKS, NEW STREET
CHELMSFORD
ESSEX
LEVEL 3 HISTORIC BUILDING RECORD

Client: Bellway Homes Limited (Essex)

FAU Project No: 2580

NGR: TL 7080 0735

OASIS No: 146638

Date of Fieldwork: November 2012 – February 2013

1.0 INTRODUCTION

A programme of historic building recording was undertaken by the Essex County Council Field Archaeology Unit (ECC FAU) at the former Marconi Works, New Street, Chelmsford, prior to the demolition of the factory, factory extension, weigh house, cottages, Marconi House and Building 720, and the refurbishment/ conversion of the Grade II Listed 1912 Building, the Power House and the Water Tower. The work was commissioned by Bellway Homes Limited and carried out in accordance with a Design Brief prepared by the Essex County Council Place Services (Historic Environment) team and a responding written scheme of investigation produced by ECC FAU.

Guglielmo Marconi is regarded as the father of radio and the earliest factories of his Wireless and Signal Co. Ltd were located in Chelmsford. The first, established in 1899, was situated at Hall Street, housed in a converted silk mill. In 1912 the New Street works were constructed and were the first purpose built wireless factory in the world, as well as the site of the first official public radio broadcast in 1920. In the late 1930s the works were expanded and a new office building was added. Additional buildings were constructed through the subsequent decades, particularly in the 1950s and 1960s. Following various mergers the site came under the ownership of Selex Communications in 2001, who vacated the site in 2008. Since closure the factory buildings have been redundant, although they have been maintained for security and safety purposes. Major structures survive on the site from all periods of Marconi's ownership, representative of architectural styles ranging from the Edwardian Baroque of the 1912 Building via the 1930's Modern Movement design of Marconi House and the 1937 Factory through to the futuristic design of the 1950's 720 Building.

Copies of the report will be supplied to the client and ECC Place Services (Historic Environment) for inclusion in the Essex Historic Environment Record (EHER). The archive will be deposited with Chelmsford Museum. An OASIS online record has been created at [Thttp://ads.ahds.ac.uk/oasis/index.cfm](http://ads.ahds.ac.uk/oasis/index.cfm) and is accessible via the ADS website.

2.0 BACKGROUND

2.1 Site location and description

The Marconi site is located in the modern centre of Chelmsford (fig. 1). The site comprises an irregular shaped plot, located adjacent to the railway line which forms the southern boundary. The northern boundary is defined by Marconi Road and the east by New Street. To the west of the site lies a large office block, Eastwood House. The Marconi Works includes offices, laboratories, factory accommodation, ancillary buildings and some housing, ranging in date from 1912 to the 1960s (CAU 2006). Much of the area is built over and the remainder comprises car-parking, roadways, yard areas, landscaping and verges. The site is situated on land which rises gently from east to west but there are noticeable drops in level between Marconi Road and Eastwood House, and the site (CAU 2006), suggestive of levelling in the past.

2.2 Planning background

The site has a long planning history, only the more-recent aspects of which are discussed below. Two applications (12/01463/DEM & 12/01462/LBC) for *the demolition of all buildings to the west and south of the water tower: to include; the factory, factory extension, weigh house, cottages, Marconi House and 720 building (to exclude the listed 1912 building, the Power House and the water tower)* were submitted to Chelmsford City Council in September 2012). These works are a precursor to comprehensive redevelopment plans for the site, a planning application (12/01789/FUL) for which was submitted in December 2013; namely, *redevelopment of the whole site to provide a mixed use scheme comprising 437 new residential units (Class C3) contained within buildings extending to between 2 & 7 storeys in height, conversion of existing buildings & construction of new commercial floor space to provide office (Class B1), retail & other non-residential uses (Class A1, A2, A3, A4, D1 & D2); Provision of new entrances into the site & pedestrian/cycle routes & linkages to the wider area; New public spaces, hard & soft landscaping & associated parking provision & infrastructure (including works to protected trees).*

Given the importance of the site in relation to the development of the radio industry, ECC Place Services (Historic Environment), in their capacity as archaeological advisors to Chelmsford City Council, recommended that an English Heritage Level 3 standard historic building record should be completed prior to the demolition and refurbishment works. This recommendation was made in line with guidance contained in the National Planning Policy Framework (DCLG 2012) and also followed recommendations made for previous applications relating to the site.

The application for Listed Building Consent was approved subject to conditions on the 3rd January 2013. Condition 2 states:

No demolition/ conversion or preliminary groundworks of any kind shall take place until the applicant has secured the implementation of a programme of building recording and archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the local planning authority. All recording work should be conducted by a professional recognised archaeological contractor.

Reason:

To ensure that adequate archaeological records can be made in respect of the site in accordance with Policy DC21 of the Adopted Core Strategy and Development Control Policies Development Plan Document.

The above development proposals follow on from a series of previous applications for the redevelopment of the site submitted in 2006 and 2008 (e.g. 08/00450/OUT), which have generated a wide range of supporting information including an Historic Buildings Impact Assessment (Burgess 2006), an archaeological desk based assessment (CAU 2006) and an archaeological test pitting exercise (CAU 2007).

2.3 Aims and objectives

The purpose of the historic building survey was to record the buildings to English Heritage Level 3 standard (2006) prior to demolition. Primarily this meant addressing the following aspects of the buildings on site, using a descriptive and analytical narrative supported by drawings and a full photographic record: plan form; materials and method of construction; phasing; internal spatial layout, room function and status; original décor; finishings, fixtures and fittings.

As specified by the Design Brief (ECC Place Services 2012), the aim of the survey was to use the 2006 Impact Assessment (Burgess 2006) as a basis for the recording and development of the site and bring it up to a Level 3 record standard.

2.4 Description of work

Recording works were undertaken throughout the various stages of soft-strip and demolition works, beginning with an initial programme of recording across all available parts of the site prior to any demolition works commencing. Further visits were made as asbestos removal progressed through the buildings, often accompanied by the removal of suspended ceilings and other modern partitions and coverings, revealing previously obscured architectural and construction details. As a result of the presence of asbestos initial visits concentrated on the 1912 Building, while the Power House was the last to be recorded. Some small areas, notably on the first floor of the 1912 Factory, were unsafe and could not be recorded in detail though photographs have been included in the report where possible.

As part of the survey external and internal architectural descriptions were made and plans of all but the modern buildings were created. Since the only up-to-date floor plans were of the buildings to be retained most of the plans used in the survey that form the basis of this report are largely based on earlier, historic plans and a 1998 survey reproduced in the Impact Assessment (Burgess 2006). Due to their size, annotated building plans are reproduced in this report at a scale of 1:200 and in some cases 1:400, while paper copies at 1:100 are provided in the archive.

A series of digital photographs were taken externally and internally, as well as 35mm black and white photographs of main external and representative internal views. Specific shots were taken of any original fixtures and fittings or architectural detail. A representative selection of photographs is reproduced at the back of the report as plates 1-146 and the remainder can be found in the archive. Comprehensive external and internal photographs depicting the Marconi buildings still in use before the majority of the works closed may be found in the 2006 Impact Assessment and offer more detail of the later offices and working areas than the 2012 survey.

Buildings have been assigned a unique ID number for ease of reference and numbered and phased block plans are provided to illustrate the development and layout of the factory complex and show significant modern additions (fig.1), which are referenced throughout the text. . A phase plan is included as figure 2, though some of the dates are approximate and largely refer to dates on plans reproduced in the Impact Assessment.

3.0 HISTORICAL BACKGROUND AND DEVELOPMENT

A wealth of information on the history and development of the radio industry in Chelmsford and the New Street Works can already be found in the public domain, particularly W.J. Baker's *A History of the Marconi Company* (1970) and a Level I-II survey and report by the Royal Commission on the Historical Monuments of England (RCHME) on the *Buildings of the Radio Electronics Industry, Chelmsford Essex* (Cocroft & Menuge 1999). The following section therefore presents a brief overview of the available material.

Guglielmo Marconi is regarded as the father of radio and the earliest factories of his Wireless and Signal Co. Ltd were located in Chelmsford (Cocroft & Menuge 1999). Marconi arrived in England in 1896 in search of commercial backers for his inventions, having been unable to raise support in his native Italy. In London, in March of that year, he lodged the first wireless telegraphy patent, a 'holding patent' for a wireless telegraphy system, and then on the 2nd June 1896 a full specification for the world's first practical wireless telegraphy system. The following year a group of financiers, led by his cousin Henry Jameson-Davies, approached him with an offer to form a company promoting his inventions and in July 1897 Marconi was granted British patent No. 12039 and the Wireless Telegraph and Signal Company was founded with the intention of acquiring Marconi patents on an international scale. Early experiments were conducted on the Isle of Wight and across Poole Bay in Dorset, followed by a cross-Channel broadcast in 1899 from Wimereux, near Bologne, France, to the South Foreland Lighthouse, St Margaret's Bay, Dover. Marconi's association with Chelmsford began in 1899 when the Wireless and Signal Co. Ltd established its first factory for the manufacture of wireless telegraphy equipment at Hall Street, housed in a converted silk mill (Cocroft & Menuge 1999, ECC FAU 2012).

By the late -19th century Chelmsford was already closely associated with a number of new industries, including Crompton's Arc works in Anchor Street (ECC FAU 2008a, 2008b) and the Christy Brothers Broomfield Road Ironworks, both early pioneers in the production of electrical components, and the American-owned Hoffman Manufacturing Company, who established a precision steel bearing factory in New Street in 1899. It has been conjectured that the presence of these businesses associated with the early electrical industry may have been one of the factors that attracted Marconi to the town (Cocroft & Menuge 1999).

The field of maritime communications proved to be an initial area of success. In 1899 wireless telegraphy was adopted by the British Royal and Merchant Navies. On 12th December 1901, a wireless signal was successfully transmitted over a distance of 1800

miles across the Atlantic from Poldhu, Cornwall to Signal Hill, St John's, Newfoundland, Canada. By the end of 1902, Marconi had established permanent and reliable wireless stations at Glace Bay in Nova Scotia, Canada and Cape Cod, America. By 1903, the Company had built a number of stations on shore and many merchant ships had been fitted with its wireless sets, which had to be rented from the company and were operated by Marconi personnel. In January 1909 wireless telegraphy saved over 4,000 lives when it was used to call for rescue when the SS Republic collided with the SS Florida off the coast of Nantucket.

In March 1910, the Marconi Company put forward a plan to link the many parts of the British Empire by a world-wide chain of 18 high power wireless stations including shore-based and ship-based stations, charging half the cost of cable telegraph rates. It was suggested that this 'Imperial Wireless Scheme' would be of great strategic advantage, providing ships of the Royal Navy with a global means of communication unhampered by vulnerable landlines and submarine cables.

Chelmsford Borough Council building control plans from this time show that Marconi's were constantly improving and expanding the Hall Street site, by the end of June 1909 it was busy with orders in hand worth £87,000 (modern day equivalent in excess of £4m), and its cramped nature no doubt dictated their decision to move to new premises at New Street in 1912. However, the research and development facilities were retained at Hall Street after production was moved to New Street until at least 1919, before they too were re-established on the New Street site (ECC FAU 2007).

Thirteen years after opening the Hall Street factory the Marconi company had become the world's leading supplier of radio equipment and was able to establish an integrated head office and factory on New Street, which remained the company's headquarters throughout. The factory and offices, designed by Dunn and Watson, were constructed over a seventeen week period between February and May 1912 and were ready for inspection in June by the suitably impressed delegates of the International Radiotelegraphic Conference on 22nd June 1912 (CAU 2007, www.marconicalling.com). The changeover of operations between Hall Street and New Street took place in a single weekend. The new works initially comprised the offices fronting onto New Street, behind which were the east-west orientated factory building, railway sidings and sheds, cut into the slope immediately to the south of Marconi Road. To the west of this, as depicted on the 1919 Ordnance Survey map, in the area extending up to Glebe Road, were two large radio masts (CAU 2007), possibly associated with the development of the Chelmsford 5XX high-power long-wave station, which was inaugurated in

June 1924 and facilitated better and much wider signal coverage to a large part of the country (www.marconicalling.com).

Marconi sets were in regular use with the Royal Navy by the outbreak of the Great War (1914–18), which saw important developments in wireless technology. The most important of these were the replacement of spark gap transmitters with Poulsen arc transmitters in naval sets and in turn the development of equipment using valves, which permitted a microphone to be attached to the transmitter and headphones to the receiver, allowing voice telephony (Cocroft & Menuge 1999).

In the aftermath of the war radio research and development concentrated on public broadcasting and the Marconi company was closely associated with new developments. On the 15th June 1920 the first official public radio broadcast was made from the New Street Works by the opera singer Dame Nellie Melba. However, broadcast ranges were limited and in an effort to boost transmission a powerful central long wave transmitter was proposed, with an experimental version erected at the New Street works in 1924. The decade between 1924 and 1934 saw a massive increase in public interest in radio, with radio licence holders multiplying over that period from 600,000 to 6,600,000 (Cocroft & Menuge 1999).

Consequently, the 1912 Office building and staff canteen and mess rooms were extended in 1929, while the factory was extended in 1936, and a new factory unit constructed in 1937, reflecting the growing role of the company as a leading supplier of radios, telephones, telegraph and wireless equipment to the armed forces, government departments overseas, civilian aerodromes and the general public. In the 1930's a new five storey office and laboratory block, Marconi House, was erected, no doubt connected with increasing public demand as a result of the expanding domestic radio industry and military requirements stimulated by the mid-1930's rearmament programme, as a second war in Europe seemed increasingly likely. A site plan from 1937 (fig. 4) provides a good representation of the internal layout of the time and labels many of the functional areas.

During the Second World War (1939 – 1945) major advances in wireless technology included the development of radio direction-finding equipment or radar, an area in which Marconi had been undertaking pioneering work from the mid-1930's. Radar played a fundamental role in the Battle of Britain and was subsequently developed in a variety of forms including airborne variants allowing night fighters/ fighter/ bombers to engage enemy aircraft, ships and U-boats at night, ranging equipment to guide anti-aircraft guns on to their targets, and radar-guided bombing devices (Cocroft & Menuge 1999). Marconi, as one of the leading electrical

manufacturers, was approached by the Air Ministry to design and produce new radar sets and to meet this new demand a research centre was established at Great Baddow. The Chelmsford factories manufactured a variety of equipment during this time but concentrated in particular on the production of naval sets. Aerial photos of the New Street site from 1945 show both the factory sheds and Marconi House with camouflaged painted roofs. However, both the Marconi Works and the nearby Hoffman Ball Bearing Works were damaged by enemy action during the course of the war, with the factory hit by a bomb in 1941 that killed 17 people (CAU 2006). As a result of the risk of air-raids, shelters were constructed for staff immediately to the north of the railway embankment forming the southern boundary to the site, although these had been demolished or filled in by the mid-1950's to make way for Building 720 (CAU 2006)

In the late 1940's, as the Cold War set in, the existing wartime radar system was substantially upgraded to meet the threat from faster moving jet aircraft. Figure 5 shows the first floor layout of the site in 1948. During the following decade the Marconi company was not only a supplier of equipment but also undertook research and development work in conjunction with the Telecommunications Research Establishment. Consequently, the late-40's and 1950's were a period of significant growth for Marconi, reflected in the expansion of a number of the companies existing factories and the acquisition of new sites (Cocroft & Menuge 1999). At New Street expansion took the form of a new factory space and canteen, Building 720 - designed by Taylor and Collister in 1950, the latter element replacing the existing 1912/1929 mess rooms, which were converted to working areas.

Defence contracts continued to form a major component of the company's work in the 1960's but as one of the pioneers of military radar technology Marconi was well placed to further develop the technology for commercial uses including civil Air Traffic Control radar systems and mercantile marine radar (Cocroft & Menuge 1999)

Later developments in the history of the site include the addition in 1965 of a new canteen to Building 720 and the construction of an office block, Eastwood House, in the 1980's. GEC Marconi was badly affected by the end of the Cold War in 1989 and its inevitable impact on the defence industry, which led to redundancies and closures throughout the company. British Aerospace (now BAE) acquired the defensive arm in 1999, transferring many of the New Street operations to Eastwood House. Part of the company was sold to Selex Communications, who acquired the site in 2001 for a short period of time. In 2008 Selex relocated to new premises in Basildon and the factory was closed. However, the Marconi

name lives on as Alenia Marconi Radar Systems, which is part of BAE, which occupies Eastwood House.

4.0 SITE OVERVIEW

The Marconi works is a large four-hectare site containing a wide range of buildings representing the development of the company over the past one hundred years, from 1912 to its closure by later owners of the site, Selex in 2008. The main manufacturing and office areas form a conjoining mass of interconnecting buildings of different phases and architectural styles with other structures to the north and south and a large expanse of open ground to the west (fig. 1 and cover plate). There are two vehicle entry points on New Street; at the north (goods entrance) and south ends of the frontage, past the control room, and a pedestrian entrance leading between through the former gatekeeper's house and mess rooms through turnstile gates. (fig. 1).

The main staff entrances to the car parks on the west side of the site were on Glebe Road, before Eastwood House came under the ownership of BAE Systems, and Townsford Street, where the cycle entrance was also located (fig. 1). A disused flat-roofed brick gatehouse still stands on the boundary with Eastwood House that monitored traffic in and out of the premises (fig. 1). From the car park, staff would enter the premises through another set of turnstile gates.

The buildings are concentrated on the east side of the site, with the earliest occupying the New Street frontage. London architects Dunn and Watson were commissioned to design all parts of the 1912 factory and offices. The principle structure is the two-storey Edwardian Baroque style office range (1) which is Grade 2-listed and contains the early offices, showrooms, design areas and luncheon rooms. Standing slightly to the south of the offices and separated by the New Street entrance is the former gatekeeper's house and mess rooms (2), whose architecture is more 'domestic' in style. Internal access between the offices and gatekeeper's house is via a covered bridge over the gated entrance. On the other side of the control room is the staff entrance off New Street. Extensions added to the rear of these buildings in the 1920s for extra offices and dining areas are in sympathetic form but plainer than the main elements and were designed by A. R. Wiseman of Chelmsford (Burgess 2006).

The 1912 factory (3) joins the west side of the office range and is a formidable structure sympathetic to but more functional in its architecture style, with blind arcading and north-lit factory roofing, also designed by Dunn and Watson. Later first floor offices have been inserted over the years. Loading bays face the main north entrance that originally linked to a railway siding on the north side of the factory. In later years the track was removed when it became the main goods entrance. A rather ornate almost Baroque church-like water tower, built over four levels, also faces onto the former siding (fig. 1).

On the opposite side of the north entrance are the 1912 weigh house and well house, amongst a partly-derelict range of single-storey 1930s and later outbuildings (10), including works offices and stores. These have an historic rather than architectural interest. Behind and to the north is the 1912 pond/reservoir (fig. 1), supplying the factory's sprinkler system (Burgess 2006). Cottages (9), built in an Arts and Crafts style on the north-east corner facing onto New Street, are the only example of worker's housing by Marconi. Further to the west are the boiler house and turbine room (8). Other structures standing to the west of building 8 (fig. 4) no longer remain.

At the west end of the 1912 factory is the 1936 factory extension (4), which is built in a simpler early-20th century factory-style to the main factory, designed to increase the working area inside. Some later first floor offices were added along the outer walls. The Modern 1937 factory extension 5 is contemporary with factory 4 but their style is very different. Extension 5, which is built onto the south side of the original factory, is a large two-storey structure in International Modern Movement style designed by William Walter Wood of Chelmsford, whose main features are the long horizontal elevation and towers. The ground floor accommodates factory space and the first floor offices, linked to the 1912 offices and Marconi House.

Marconi House (6) is another significant 1930s Modern structure, designed in 1939 by the London firm of Chamberlain and Willows to be the worldwide headquarters of Marconi. This is a large five-storey U-shaped office block with a tall rotunda that dominates the view of the site from the south and east and contains some significant Art Deco interiors. The building joins the 1936 factory extension to the north and is linked to the 1937 Modern factory by covered first floor bridges that span the main factory entrance on this side.

Opposite the prominent Modern buildings are tarmac areas for vehicle access and parking spaces and Building 720 (7). Building 720 was designed by Taylor and Collister in 1950 to provide further factory space and a new canteen. It was built over two storeys with a

mezzanine floor and its modern factory aspect has a distinctive 'wavy-roof' profile. A new flat-roofed canteen building was constructed in 1965 adjoining the south-west corner, which has no architectural interest (fig. 1).

Site boundaries are marked by original railed fencing on the prominent New Street façade and otherwise by modern railed fencing and security gates of no historic interest. A short length of brick walling stands either side of the boiler house and turbine room around the fuel tanks. There are no green spaces. Bicycle sheds are located along the southern boundary against the railway embankment and a large car park and pedestrian access to the south-west. Eastwood House, occupied by BAE Systems that incorporates surviving elements of Marconi, stands to the west of the factory on land formerly occupied by Marconi, but outside the current development area.

5.0 BUILDING DESCRIPTIONS

5.1 General Description

There are several surviving historic buildings on the site and these have been numbered for ease of reference in figure 1 and are summarised below. As far as possible, their titles are the same as those used in the Impact Assessment (Burgess 2006). Dates ascribed to the buildings refer to architects plans reproduced in Burgess and not necessarily the actual construction date, though they are assumed to be the same or soon after. The historic buildings included in this survey are:

- 1912 Offices (1), extended in 1929
- Gatekeeper's house and mess rooms (2), 1912, extended in 1929
- 1912 Factory (3) including water tower
- 1936 Factory extension (4)
- 1937 Modern factory (5)
- Marconi House, 1939 (6)
- Building 720, 1951 (7) and modern canteen (1965)
- 1912 Power house (8)
- Roadside cottages (1912) (9)
- Weigh house and outbuildings along the northern boundary (10)

Building numbers have been assigned for ease of identification and are marked on figure 1. Individual room numbers or group numbers covering groups of rooms by type or function,

have also been assigned and are included on the plans at the back of the report. The main surviving historic structures are described fully and modern (post 1960) structures are summarised briefly to complete the record.

Where pertinent, original room function is indicated in the figures, as well as the text. Modern partitions are shown in grey and do not necessarily show doorways. Numbers are assigned to existing spatial layout but not necessarily to modern offices or corridors. Some areas have had differing functions during the years and this is alluded to where apparent and illustrated in figures 3-5, which show original layouts from 1912, the 1930s and 1940s. More specific modern roles, if different, are alluded to in the text, and taken from a modern GEC Marconi site plan found with a batch of old architects drawings supplied by the client.

The following descriptions are based on observations made during the survey, information in the earlier Impact Assessment report and, where relevant, List descriptions. In general, historic exteriors survive well and in some cases the original spatial layouts remain too, but much internal fabric has been altered and modernised over the decades. Therefore this report describes the current, not necessarily historic, layouts, though historic layouts are alluded to where possible.

5.2 1912 Office building (1)

The 1912 offices represented the public façade of the company and occupied a prominent position on the New Street frontage. Designed in contemporary Edwardian Baroque style, it has a decorated central entrance bay, wings each side and a clock tower above. Here the prominent personnel had their offices, presumably including Marconi himself, shared with supporting roles supplied by typists, accountants, etc. It also housed the showroom, drawing offices and senior staff luncheon rooms.

The offices were Listed Grade 2 in 1997 (List entry number 1031538) and reads as follows:

Offices and laboratory, now offices. 1912 by W Dunn and R Watson. Brown brick with limestone dressings and red clay tile window heads. Hipped slate roof with four brick ridge stacks with stone banding. Edwardian Baroque style.

Two storeys; 3:5:1:5:3 fenestration with slightly projecting central bay and projecting side wings. There is a central domed clock turret with weathervane. Central bay has open pediment set over pilasters with stone banding set on balcony with wrought iron balustrade and ground floor with panelled double doors. First floor has cartouche over 36-pane sash set in Gibbs surround.

Flat red brick arches over sashes with glazing bars; dentilled stone cornice; stone banding to quoins and wings. Similar 6 bay side elevations. Attached low brick wall with painted railings and opposite the entrance brick gate piers surmounted by iron lamp holders.

INTERIOR: Fine bolection-panelled entrance hall, with decorative wrought-iron balustrade to cantilevered staircase, modillioned cornice and Baroque-style plasterwork to ceiling. Half-glazed doors from hall to rear passages which give access via semi-circular arched screens to offices with plaster cornices.

HISTORY: The world's first purpose-built radio factory. This building also housed the laboratory where Marconi carried out his development work.

[W J Baker, "A History of the Marconi Company"1970.]

Please note, specific references to laboratories have not been found along the front offices but testing stations are recorded between the offices and 1912 factory.

The descriptions below also include the 1929 office/drawing office extension.

5.2.1 External description

The 1912 office adopts a symmetrical linear north to south plan form with a central entrance bay, uniform side wings and projecting bays at either end. Brickwork is in English-bonded 'brown' bricks and the exteriors are fenestrated with multi-pane sash windows.

East elevation

The main elevation (plates 1 & 2) employs 6/9 sash windows, with those on the ground floor being slightly longer. Those in the north wing, containing the ground floor showroom have longer 9/9 sashes for extra illumination. All have flat red tiled heads (rather than bricks) and codestone sills. Windows to bays 4, 7, 11 and 14 are flanked by single-light five-pane sashes in the manner of tripartite sashes (Burgess 2006).

The entrance doors in the central bay are mahogany and flanked by a pair of two geometric leaded casement windows behind wrought iron screens, that light the entrance lobby (plate 3). Above the doors the name Marconi's is etched in gold lettering, below the tall window that lights the formal staircase inside.

North elevation

The north elevation originally accommodated the ground floor showroom with drawing office above and linked to the factory on both levels. This side comprises six bays and was deeper

than the south side, which was only three bays deep before the extension was added. The central bay is occupied by an arched doorway giving access to the main axial corridor inside. Originally this entrance contained leaded semi-glazed wooden doors and fanlight (Burgess 2006), since replaced with a modern security door. Ground floor fenestration to the east of the doorway continues around the showroom but changes to shorter 6/6 sashes to the west to accommodate the ramp to the railway platform that follows the factory wall (Burgess 2006). These more closely-spread windows light the old Oil Test Room. Those windows on the first floor are uniform except for that on the east end which has been reconfigured to form a fan-lit semi-glazed fire door with access to a metal fire escape (plate 4). Fans have been inserted in the top panes of the windows on the two west bays that light the former print room. A large skylight occupies the middle roof space of the drawing office.

South elevation

Before the south elevation was extended it was a three-bayed symmetrical elevation with sash windows and a hipped roof (Burgess 2006). The stone quoining on the south-west corner is still in evidence against the 1920s extension and in particular the red brickwork of a blocked 1920s doorway, into which a toilet window was inserted when the offices were converted to the hospital block (plate 5). Above it is a modern timber-clad bridge linking to the former gatekeeper's house, which has been adapted in various forms and is more fully described under the Gatekeeper's House.

The rear extension (plate 5) was built in 1929 by A.R. Wiseman of Chelmsford for the provision of extra ground floor offices and a second first floor drawing office and print room (Burgess 2006). Its architecture is similar to the main building but plainer in form. Windows are of metal rather than wood and either two or three panes by four, with the middle panes tilting by cords inside. They are mounted on codestone sills and have the same tiled flat arched heads. The roof is slated and hipped where it joins the main building and gabled to the west. Skylights light the former drawing office but roof ventilators were added when the offices were converted to kitchens and dining areas. At the bottom of the walls are slate-clad ventilators for the basement.

West elevation

The rear elevation has always been largely hidden by the factory and the single storey test room roof that linked the factory and office areas, and was hidden further when the 1920s extension was constructed. In its original form the three southern bays mirrored those of the front and the outlines of the windows remain inside in the adjoining wall, particularly on the ground floor. Access from the back was originally through a pair of leaded semi-glazed doors

that have been replaced by a modern concrete stair leading to the first floor only (fig. 6a & 6b). Windows on the top floor are regularly-spaced 6/9 sashes that are hidden from view. In the centre is a large geometric-form leaded transom and mullion window that lights the main stair and is a feature of the first floor landing (seen internally as plate 19).

5.2.2 Internal description

The interior was recorded in its modern day state prior to stripping-out, but further visits were able to record more accurate spatial layouts of rooms as well as details of historic interiors and features.

Original plans show similar floor layouts on both levels, with offices at the front facing the road joined to a single corridor to their rear that also provided access to the test room to the west, which formed part of the factory. Both elements were separated by two entrances at either end, to limit access between the working areas and administration areas.

Currently most of the floors are carpeted for offices and these overlie the original wood block floors that are only visible in the corridors. Office partitions have also been added, as well as false ceilings fluorescent lights and a modern sprinkler system. Corridors have plastic trunking systems in the upper walls and, with the mains electricity off, were festooned with lamps powered by generator.

The 1929 extension is also described in the following text.

Ground floor: 1912 offices

From the front of the building, the central main doors lead into the entrance lobby and hall (1 & 2). The small lobby is lit by two leaded casement windows and has a marbled floor in geometric design that continues into the main area. Semi-glazed six-panel doors separate the lobby from the entrance hall and stair (plate 6), which provides the most decorative interior. Carpet now obscures most of the marble floor around the stairs, but some of it was exposed in the survey. The walls of the room are decorated in mustard and pale yellow divided by a moulded dado (plate 7). Above the dado are regular leaf-bordered gypsum plaster panels and a heavily-moulded cornice to the west of the stairwell. At the base of the walls are dark-stained moulded skirting boards that continue along the corridors and the rooms on the east side. The stair itself has a wrought iron balustrade with fairly elaborate scrollwork decoration, mahogany handrail and a dog-leg form with a half-pace landing lit from the large central window over the main entrance.

An arched opening leads southwards from the hall into modern reception area 3, created by removing the original doorway surround into the enquiry office and the partition wall between the enquiry office and Works Manager's Office (fig. 6a). Decoration in here is similar to that of the main hall with its dado rail and ceiling panels, acting as an annexe between the two areas (plate 8). Carved consoles have been inserted either end of the removed partition wall to provide extra decoration and the fireplace has been removed. The former doorways out onto corridor 4 (south) have been blocked (fig. 6a).

Corridor 4 leads through dark-stained semi-glazed fire doors from the entrance hall to the offices either side (plate 9). The corridor continues the main decorative themes of the principle areas and has not been affected by subsequent alterations. Its moulded dado rails, dentilled cornices and skirting boards remain intact along with the wood block floors (raised on a 6-inch concrete slab, Burgess 2006). Apart from the dentilled cornices, which are simply moulded, the same features continue inside the offices. More recent fire screens have been added, largely in keeping with the original ones.

The corridor passes rooms that are entered by heavy semi-glazed doors set within arched multi-pane glass surrounds (plate 10), which help to cast light into the corridors and survive best on the north side of the entrance hall. Original plans show the doorway removed on the south side of the stair hall into room 3 was of the same design (Burgess 2006, appendix 1/4). The basic layout of the rooms along this corridor survives quite well, apart from a few rooms that have been linked by inserted doorways and partitions, and they also retain their fireplaces (fig. 6). A good example is room 5, the former reception room (plate 11). Plate 11 provides good detail of the door with its inverted corners (believed to be after 1912, Burgess 2006) and vented fanlight above. The fireplace remains intact on the near-side of an inserted, though historic, door insertion (fig. 6a). Over it is a framed map of the world. Windows on the east walls have long architraves reaching to the floor with panelling below.

Some of the offices have been divided quite brutally by modern partitions such as room 6, another reception room (fig. 6), to the detriment of the fireplace. Not all partitions are modern, some are semi-glazed hardboard ones (e.g. room 9, fig. 6a), which in other parts tend to be 1930s or post-war additions.

The northern part of corridor 4 finishes at the former showroom, room 10, which was until recently the shipping department. This area has been divided up into offices and a delivery booth. The ceiling has suffered from damp, forcing the paint to peel (plate 12). Dentil decoration to the beams indicates a higher level of detail than the adjoining rooms. Steps

have been inserted at the west end into the former oil test room (11), which marks the beginning of the factory space. The only historical fixture of note is an old winch fitting attached to an RSJ in the centre of the room (fig. 6a). The southern part of the room was divided to become loading corridor 26 after the 1930s.

From the stair hall, the southern part of corridor 4 leads to the end of the 1912 building and the 1929 extension (fig. 6). Here the original room layout has not been affected by later partitioning in the same way as the opposite ends. Decorative fixtures and fittings generally continue the broad themes (doors, wall features, etc) except for the ancillary areas. Room 12 remains an office and contains a replaced mid-20th century glazed door and side screens and a small locker for the use of the former Works Manager's Assistant, who occupied the room (plate 13). Room 13, the former typing room, has been converted into a ladies toilet. The gent's toilet (14) next to it is raised over the basement, suggesting the basement is a later addition (Burgess 2006). The toilet has been refitted but retains its two-panel doored cubicles. At the far end is the former accounts office (15), which has been carpeted and fitted-out with modern office partitions and suspended ceiling (plate 14). These had been cleared out on a return visit to expose a high picture rail with green-painted frieze and plastered dentilled beams, the same as those in the showroom. The windows on the west side of the accounts office now overlook rooms 17 and 18 in the 1920s extension. Basement access is via a narrow four panel door next to the office entrance that opens onto a concrete stair. Some old shelving remains inside but otherwise the basement is empty. The ceiling is carried on 14-inch iron joists.

Rooms 27 and 29 were the original test room but were divided by corridor 28, probably in the 1930s (fig. 4). Room 27 survives better than 29 but the earlier doors have been replaced with two 1930s/40s style semi-glazed forms, the most interesting of which has two horizontal panes divided by a thin band of glazing in the centre (plate 15). This type was seen adjoining room 27 and is also present in all factory areas. The walls of corridor 28 are made of hardboard and the factory-end fire doors have similar horizontal glass panes and square margins on the outer edge (plate 16). Square roof lights remain in the flat roof of the former test room, three tilting multi-glazed windows on each side (just visible in plate 15).

Ground floor: 1929 extension

The ground floor of the 1929 extension was built to accommodate further offices, stores and a cellar (fig. 6) but by 1937, after the offices were relocated to building 4, the ground floor was converted into a small hospital and occupational therapy block (fig. 4). Original plans

from 1929 (Burgess 2006, appendix 1/9) show the same layout to the existing one, with only minor changes to the circulatory routes.

The former T-shaped corridor with entrances from the 1912 building to the east and externally from the west and south survives in L-shaped form since the southern entrance was blocked when clinical room 18 was established (fig. 6a). Upon conversion, the eastern corridor was sub-divided into corridor 17 and staff area 18, to provide clocking-on, kitchen and toilet facilities for the nurses and doctors. A glazed multi-pane screen was inserted between rooms 18 and 19 (probably relocated from its original position by room 25), with a sliding reception window and hinged desk unit (plate 17). Entry into the room was via a semi-glazed two-panel door of similar form but fitted with obscured glazing. The later corridor has vinyl flooring and the rooms are decorated to a lower level than the offices; all have tiled window sills, wood block floors and few fixtures and fittings. The offices along corridor 21 were fitted with semi-glazed doors (six paned with vented fanlights over) and glazed side-screens to spread light into the corridor. Only one of these remains in its original form, in treatment room 19 (plate 18). The globe lights in plate 18 are probably a later insertion and the toilet door is of 1930/40s design, with a large square panel at the top and long slender panels below. Office and enquiries/waiting room 20 occupies the former store and surgery 22 is located in the former office, with access into the waiting room (fig. 6a). A small ward or consulting room (room 24) has been created from a former office with direct access from the surgery but maintaining its original corridor access (fig. 6a). The ward was simply-furnished and only the bedside curtain rails and sink unit attest to its former function.

First floor

The original first floor layout relates strongly with the floor below, continuing the theme of the stairs, principle offices and reception rooms linking off a single corridor each side to specific 'team' offices and high-status rooms (fig. 6b). At the north end the layout was identical to the ground floor, with the Drawing Office at the far end, followed by the Chief Draughtsman's and Works Orders Offices, lavatories and two reception rooms. On the south side of the stair landing were two large offices, lavatories and luncheon room at the end. The 1929 extension added two additional drawing offices and a second print room (fig. 6b). This layout changed in 1948 when the canteen was relocated from the gatekeeper's house (dining rooms and kitchens were added for the office staff). There was no access originally between this floor and the factory.

The stair landing (1) is decorated in the same manner as the entrance lobby below, with large plaster panels. The walls are painted mustard yellow painted above the dado and

umber below. A geometric-style leaded window lights the back of the landing (plate 19). The stair hall decorative themes are continued in the ceiling, which comprises three leaf-bordered plaster panels; the largest of which is in the centre, framing an oval fruit and berry panel (plate 20) and brass chandelier. Metal nozzles in the plasterwork allude to the later sprinkler system. The edge of the ceiling is defined by a dentilled cornice with egg and dart mouldings.

The same dark-stained semi-glazed fire doors as seen downstairs lead to corridor 2 either side of the landing and single doorways enter into rooms 3 and 7 either side (fig. 6b). Corridor décor is the same as the corridor below. The only difference on this level is that the skirting boards are painted black rather than stained and the doorways, where they remain, contain heavy eight-pane doors within wide architraves, though many are either later three-panelled or semi-glazed doors.

Room 3, a former reception room, is fitted with brass wall vents and cast iron geometric floral ceiling vents (plate 21). The three rooms to the north (reception, lavatories and office) were combined to form a dining room (4) in 1948 and were more recently sub-divided into offices (fig. 6b). Following their stripping-out, moulded and dentilled cornices and beams were revealed (plate 22). Stripping-out works in the former drawing office (room 5) exposed a bolted queen post strut timber roof frame and, since light was important, cord-operated multi-pane rooflights behind the modern ceiling (plate 23). Original plans (Burgess 2006) show the queen post roof is a common form throughout the 1912 building. The print room (6) at the back is linked to the inserted 1930s first floor offices by two inserted doorways replacing a single central one (fig. 6b). Along the north and west walls are screed concrete surfaces for printing machines (fig. 6b), showing up against the floorboards. The first floor offices were unsafe to enter during the survey due to damp and no plans are available.

The room layout south of the stairs has not been altered but some room functions were changed when dining facilities were improved and expanded in this area. Offices 7 and 8 were converted to kitchens for senior staff dining after the main canteen facilities were transferred from the mess rooms to Building 720 in 1951. Kitchen 7 contains all modern fittings except perhaps for the serving area which probably dates to the conversion. Otherwise its tiled floor and walls, larder, serving area and modern cookers and fan systems all relate to its recent usage. Dining room 9 (plate 24) was presumably designated for senior office, rather than factory staff, and again the fittings are modern. Against the adjoining kitchen wall was wooden panelling (plywood, removed) and shelving around the fireplace lit by down-lighting and a serving hatch. The area around the serving hatch is equipped with contemporary shelving, though much has been replaced. Large heated serving units were

situated in the centre and at the south end a modern display cabinet (intact) that would have held Marconi memorabilia (plate 24). Flooring is laid in 7-inch boards.

Gent's toilets 9 were well fitted-out and primarily for the executives of the luncheon room next-door, as can be deduced by its heavy six-panel door and dentilled cornice only found in the more prominent rooms. Herringbone floor tiles are another unusual though practical feature. At the east end of the room, the cubicles have remained as original with their hardwood doors, four-panel pine partitions with moulded entablature.

At the south end of the building, modern canteen 10 and dining room 11 are fitted out in similar form to dining room 8 with plywood panelling dated to 1964, a date pencilled onto the blocked-in fireplace on the north wall. Built-in drawers and cupboards along the north wall panelling provided storage for cutlery, condiments, etc, and along the external walls are matching radiator cabinets inconspicuously hiding low radiators and pipework in the form of thin rectangular heating elements and stainless steel hot-plates (plate 25) covered by metal grills, since removed. Like many such areas, the room has a wood block floor. The stripping of the panelling revealed the original character of the luncheon room, containing similar architectural treatment to the stair area, in the form of leaf-plastered panelling and a dentilled and egg and dart-moulded cornice in contrasting shades of gold-coloured paint to create depth (plate 26). The deep, square-panelled Jacobean ribbed ceiling is particularly fine in context of the building and clearly marks an area of high status. The east wall of the bridge across to the gatekeeper's house is semi-glazed with obscured glass (plate 27) but the west side was rebuilt when the openings at this end were changed.

The 1912 plans (Burgess 2006, appendix 1/2) show a first floor link between the gatekeeper's house, where the original kitchens were housed, and the luncheon room. In 1948 dining facilities were expanded and the drawing offices within the 1929 extension were converted to dining areas (fig. 5). It is interesting to note how the three doorways between rooms 10 and 11 and 12 correspond to original window positions (fig. 6b). In the final phase of use, dining room 11 retained its function but room 12 became a series of three small offices (or private dining/meeting areas ?) separated from room 11 by a narrow corridor (fig. 6b). Again, these areas were furnished with wooden panelling, wood block floors in the style of the luncheon room, and suspended ceilings. After the panels and ceilings were removed, a two-tone cream and green painted wall was revealed as well as the original angle-iron drawing office roof and skylights (plate 28). Room 14 occupies the former print room but is now a lobby area to the concrete staired fire escape at the back of the building, a functional change shown in the 1948 site plan (fig. 5). The room contains a moulded wooden dado

more reminiscent of the 1912 office interiors, and safety doors with two-part glazing that enter the corridor to the 1937 factory. A blocked doorway on the south side probably once held similar doors acting as a fire exit from the dining rooms of the 1929 extension (fig. 6b).

Two flat-roofed wooden huts, a locker room and kitchen store (fig. 6b) have been added in the modern period over the test room roof and are accessed from corridor 2.

5.3 Gatekeeper's house and mess rooms (2)

This is a two-storey structure that occupies the New Street frontage on the south side of the 1912 offices and main entrance (fig. 1), which is to be demolished in the current proposals. Originally it comprised a three-bayed gatekeeper's house with gable facing the road and L-plan six-bay recreation/dining rooms attached to the south and slightly set back from the frontage, both built in brown brick and slated 40° pitched roofs along the street frontage and to the rear. An extension, built of the same materials, was added onto the west wall of the club room in 1929, to expand on existing facilities. In the post-war period a control room was installed in the gatekeeper's house and a covered pedestrian entrance (4) created from New Street into the site. The dining rooms and kitchens were converted into offices and laboratories/manufacturing areas on the ground floor and into offices on the first, presumably after canteen facilities were transferred to the newly-built Building 720 in 1951. At the time of the survey all but control room 3 had been cleared-out, leaving only post war and modern partitions and more permanent fixtures and fittings like carpets and doors, which are mainly original and commonly four-panelled within the house part or semi-glazed.

The gatekeeper's house was linked to the luncheon room in the office range by a covered walkway or 'bridge' originally designed in 1912. The present version was demolished during the survey but its position is indicated on figure 6b, joining the present day offices and dining rooms. A small gatekeeper's hut (labelled 100 in fig. 4) formerly monitored movements through the gate but was probably demolished when control room 3 was established in the post-war era.

The 1929 extension is similar to the mess rooms in form and style to the main building though slightly plainer. Windows are generally uniform in character and are of the metal Crittalls multi-pane industrial style, similar to those inserted along the north elevation of the 1912 factory. They comprise twelve-paned centrally-opening hopper windows on both levels, with concrete sills and tiled heads. The gables are broader but the roof pitch is the same, though lacking finishing touches such as bargeboards. Three ridge ventilators have been inserted along the roof.

The extension was constructed to create a new men's mess room and club room, resulting in an enlargement of the women's mess room to encompass the whole of the 1912 range, and the kitchen relocated between the two (Burgess 2006 appendix 1/15). The floor above the women's mess room became a billiards room and the one above the men's mess became the club room. This configuration broadly resembles the present layout.

In the following text, external descriptions are divided between the 1912 gatekeeper/dining and recreation building and the 1929 extension for ease of reference, but the interiors are described under the same heading, since in the last working phase they are commonly linked by function as offices and workshop spaces.

5.3.1 External description: 1912 Gatekeeper's house and mess room

The building is contemporary with the 1912 offices and shares the same prominent position, construction and form but with lesser architectural detail as befitting its more functionary role (plate 29). The 1929 extension shares similar characteristics. Brickwork is in English bonded brown brick with a slate roof and fenestration is in multi-pane sash windows with stone sills and flat tiled arched heads.

East elevation

The two-bay gable (plate 29) originally had 6/6 sashes on the ground floor to light the parlour and scullery, two 3/6 pane sashes on the first floor to light bedrooms and three-light sashes to light the basement (Burgess 2006). The ground floor windows have been replaced with a large modern casement window that lights the control room, established in the post-war period. A chimney, plain in form, which served the parlour and front bedrooms, was removed when the rooms inside were reconfigured (Burgess 2006, appendix 1/13).

The main five-bay range parallel to the road was originally lit on the ground floor by 6/9 sash windows (Burgess 2006 appendix 1/13), which were replaced by shorter 3/3 vent windows after the dining rooms were moved. Those on the first floor remain as 6/6 sashes. The central bay contains a shaped gable around bas-relief stonework incorporating a blank diamond/cross motif (plate 29). Chimneys rise either side which served the kitchen below, between the men's and women's dining rooms (Burgess 2006, appendix 1/14). At the north end next to the gatekeeper's house is a half bay containing the pedestrian entrance (obscured by hoarding) that occupies the former larder and a 2/4 first floor sash window that originally lit the bathroom.

North elevation

The north elevation of the gatekeeper's house stands opposite the 1912 office building, with the New Street factory iron gates in-between (plate 30), but because of lack of space was difficult to photograph in its entirety. Original elevations (Burgess, 2006 appendix 1/13), show a broadly symmetrical three-bay range, with steps and a semi-circular arched doorway leading into the house. The arch is decorated with a tiled keystone and red brick impostes either side (plate 30), like those in the 1912 factory. At the top of the steps remains an eight-pane fanlight formerly over a set of double doors that led into a small entrance lobby and stair hall through a semi-glazed door. The doorway into the control room is a post-war insertion. Either side of the gatekeeper's door are 6/6 sashes lighting the former kitchen and parlour. Above on the first floor is a central 2/4 sash window for the cleaner's cupboard and to the east is a 3/6 bedroom window. On the opposite side is a doorway from the former kitchen, serving the luncheon room exclusively, via the bridge.

On the north side of the yard area between the 1912 mess room and 1929 extension stands a rather decorative cast iron external stair leading to the first floor landing, added in 1929 to provide direct access into the billiard and club rooms. Although the stairs themselves are solid and functional by necessity, the rails and balustrades are slender and in the latter case have 'turned' ornamentation (plate 31). Beneath the landing is a small two-room extension, blocking the former entrance into the kitchens and mess rooms (Burgess 2006 1/14). Entry into this part, now workshops, is by two four-panelled semi-glazed doors. The landing door leading off the first floor is in the same style as those below, but with a rectangular three-pane fanlight over.

West elevation

The exposed gable of the gatekeeper's house (plate 32) retains its original form apart from some disturbance by modern signage, trunking and more recent items, while the gable in front of the men's dining room is now hidden by the 1929 addition. Windows on the ground floor take the form of a central 6/6 sash with narrower 4/4 sashes either side. The same pattern is repeated on the first floor with shorter versions: a 3/6 central window and 2/4 windows.

Along the main range there has been a good deal of alterations to its four bays. The pedestrian entrance (4) is positioned on the north bay, which necessitated the widening of an earlier doorway (Burgess 2006, appendix 1/13). Turnstiles hide part of the doorway here. Another door, modern and made of steel, has been inserted on the third bay under an open modern porch and the former kitchen doorway, which led from the kitchen into the separate

dining rooms, has been enclosed by building around the open porch here beneath the stair landing. One 6/9 original sash window remains, on the second bay to the right of the turnstiles in plate 32. The windows on this side are taller than the house windows.

The first floor retains three 6/6 sashes. An earlier double-doored opening from the billiard room onto the fire escape has been reduced in size and is hidden behind an enclosed timber-boarded and flat-roofed porch added after 1929 to both sides of the landing (fig. 7b & plate 31) and supported on slender cast iron columns. Two post-1929 dormer windows have been added on the roof.

South elevation

Doorways have been inserted into former windows on both floors. That on the ground floor is modern in date, providing access to the modified workshops/laboratory area, while the second was inserted on the first floor when the fire escape was added in 1929, to serve the billiards room (fig. 7b & plate 33). Both are now boarded-up. Otherwise there are no changes.

5.3.2 External description: 1929 extension

The main entry point into the men's mess room was at the east end of the east elevation where there is a wide multi-paned semi-glazed doorway with matching glazed panels either side, set within a slightly projecting concrete surround (plate 34) and covered in a flat-roofed concrete canopy supported on functional concrete brackets. Fenestration remains as original. The north elevation (plate 32) maintains its window symmetry and remains unaltered. On the longer west elevation (plate 33) the central windows are flanked by slightly narrower side windows. Modern double doors have been inserted into a single doorway that provided secondary access into the mess room (fig. 7b) and was probably once similar in form to the east entrance. The rear south gable retains its fire escape stair that was accessed from the west end of the club room. The doorway has been sealed and only the fanlight is visible (plate 33).

5.3.3 Internal description

Almost all fixtures and fittings have been removed except for floor coverings, partitions, suspended ceilings, internal and external doors and some large cast iron radiators.

5.3.2.1 Ground floor

Gatekeeper's house

Originally the only entrance into the gatekeeper's house was from the arched lobby area on the north side that led to a stair hall with parlour and scullery to the left and kitchen to the right. A small lift in the kitchen meant that food could be cooked, and taken up to the pantry above and delivered to the south side of the 1912 offices via the gallery, suggesting that cooking was another role of the gatekeeper (Burgess 2006, 1/14), or more likely his wife and perhaps other staff. Two wine cellars were located below (no plans available).

Above the steps is the entrance lobby, the doors of which are removed. Beyond it is a wide doorway fitted with a modern semi-glazed door under a large safety-glazed fanlight. C-shaped corridor 1 has a blue and grey lino floor and no interesting fittings. It goes around room 2 passing the doorway to the cellar steps (plain, four-panelled). The cellar is in two parts and contains shelving, odd office furniture and multi-chrome white and red-painted brick walls. There were no features of interest. The stairs at the west end were inserted after the gatehouse ceased to be a residential and kitchen unit in the post-war period and are plain in form with rounded wooden handrails. Room 2, which is reached by the former entrance lobby, was last used as a small office and contains no evidence of former kitchen use apart from a contemporary cupboard (fig. 6a).

The doorway into control room 3 is inserted and the window next to it has been enlarged for greater viewing range. Similarly, the two street-facing windows were replaced with a single larger one. All have modern 6-inch cream tile sills. The most interesting feature of the room is the control panel with its veneered surround, desk and monitoring sets that probably dates to the 1970s or 80s and is perhaps the only piece of Marconi technical equipment to remain on site (fig. 6a & plate 35). On the south wall, the doorway is a later insertion to monitor the pedestrian entry point 4. The style of the door is certainly post-war date and the two glazed panels suggest a 'Modern' design influence, though the fixtures are later replacements. The door contains a small sliding communications screen. The gateway is substantial and clearly more modern. At the opposite end of the passage is a turnstile to control footfall in this area. Another is positioned on the car park gates on the west side of the site.

Mess rooms

The main range is taken up with room 5 which encompasses the 1920s women's mess and kitchens but now forming a largely open plan L-shaped space comprising workshops, offices and perhaps laboratory facilities used by the 'plant engineers' (fig. 7a). The workshops are separated by steel partitions, presumably dating to 1951 when the canteen was moved to

Building 720 (Burgess 2006). Nothing remains of its original function and almost all industrial fittings (machinery, working surfaces, etc) representing its more recent use have been removed and damp has penetrated the ceilings. Specific room function is difficult to identify other than in general terms.

The main room, 5, is split into two: the north part is open-plan and the south part has steel-panelled semi-glazed partitions forming offices and/or laboratories or testing areas. The open part has grey/yellow lino tile flooring and white-painted bare brick walls, partly tiled on the east wall. The windows on the east wall have been reduced in size from the larger sash windows to smaller double-vent windows (plate 36). Lateral steel joists (6 by 4.5-inch) carry the ceiling, supported in the centre by two rows of upright joists. Conduits and electricity points feed around the walls and at the north end is a workbench and scales (fig. 7a). Workshop 6 contains a small metal workbench and vice, and modern ?generator.

The modern room configuration defines a corridor which leads from the working area to a modern fire door on the south side and westwards past two later offices and into either room 7 or the 1929 extension. Room 7, a later addition along with room 6, is sparsely decorated and has an industrial nature with a large modern extractor fan located in the centre. Against the 1929 extension is a blocked doorway with a nice semi-glazed sliding door over it and leading out into the yard are a plain set of semi-glazed doors. A blocked window between rooms 6 and 7 (fig. 7a) suggests one was built before the other, but this is unlikely.

1929 Extension

Room 8 has been modernised with modern office partitions, carpets and suspended ceilings and steel partitions of a more industrial nature on the south side that continue into room 5. There is no decoration apart from painted brick walls. Loading doors in the south-west corner probably date to the 1950s and are clearly associated with the more industrial activities going on in both parts of the building.

5.3.2.2 First floor

Gatekeeper's house

First floor room configuration changed after the gatekeeper's house ceased its residential function to allow through access between the former billiard room to the bridge (and thereby the 1912 offices), and to create office space from the former bedrooms. Bedrooms 1 and 2 were combined as offices and the former central stair landing was sealed in when the west stair was built. In its place are two short flights of steps leading through into (small) office 4 (former house bathroom) and a new corridor (5) through into the main range (fig. 7b).

Corridor 3, which is defined mainly by modern semi-glazed partitions, offers access into room 6, an office space created from parts of the old pantry, landing and cleaner's room, and through a doorway into corridor 7 that leads straight onto the west stair (and ground floor) and bridge. The new corridor formed part of bedroom 8, serving further office space. Such substantial changes resulted in the removal of the bedroom fireplaces and chimneys.

Billiard room

Alterations carried out in 1929 created a billiard room on the first floor over the mess, with toilets and bathrooms on the north side against the gatekeeper's house and a bar area to the west (fig. 5). After WW2 offices were created in the main part and in the 1929 extension (Burgess 2006), and corridor 5 was formed with male and female toilets (9 & 10) created each side from semi-glazed hardboard partitions (fig. 7b). A second corridor (12) was inserted opposite the bar leading into the extension (fig. 7b).

The interior of the main room (11) has painted bare-brick walls and brown post-war semi-glazed doors. Original multi-pane glazed doors stand on the south side for the fire exit and stair, which was built to provide external access into the billiard room. There is no indication of decorative features such as panelling or ceilings. The main part was occupied with desks and filing cabinets (Burgess 2006) and modern office partitions at the south end. Roof frame detail (plate 37) is the same form as in the 1912 office.

1929 Extension

The extension, or former club room, was latterly used by the Purchasing Department and has been less-affected by later changes. It retains much of its original character but like a lot of the buildings has suffered from damp.

Internal entry into the extension is from inserted corridor 12, one of the few areas to contain an original slim-panelled radiator (plate 38). This entry door is original too, though relocated here slightly from its original position (Burgess 2006, appendix 1/15). External entry was provided by the fire exit door on the east side, which are original, containing multi-pane glass and a top-hinged fanlight (plate 39). The interior is the same as the 1912 areas apart from its bolted angle-iron roof frame which is partly obscured by a hardboard ceiling.

5.4 1912 Factory & water tower (3) and 1936 factory extension (4)

The 1912 factory, water tower and 1936 extension are described under the same section because of their spatial, architectural and functional relationships. The factory buildings are to be demolished as part of the proposals for the site and the water tower is to be converted.

Figures 3 and 4 show the historic layouts and functional areas of the factory spaces from 1912 and 1937.

The factory is attached to the rear (west) of the 1912 office range by the flat-roofed test room. It is a large linear structure with extensions to the west and south (built around 1936 and 1937 respectively) and a railway line and sidings to the north along much of the original factory frontage. On the other side are the power house, a range of auxiliary buildings and stores and the reservoir.

The original 1912 structure measured 142m east to west and 48m north to south and was built from brown stock brick laid in English bond, the same as the Office range. The space inside was divided into three main factory areas, three bays deep, and two northern bays containing test rooms, workshops and stores. A toilet block projected centrally from the southern side, which was removed when the Modern-designed 1937 factory was constructed. Each bay was 9.1m-wide. A first floor gallery was added on the first seven bays of the north side by the early 1940s (Burgess 2006). In the roof, a bolted angled iron frame supports five parallel north-lights, a typical factory form, with cast-iron downpipes taking water off the valleys (Burgess 2006).

Historic photographs of the main working areas show a different factory to that seen today, equipped with heavy belt-driven lathes and other machinery powered by a complicated system of bands and line-shafts powered by electricity from the turbine room. Over the subsequent decades the machinery and its power drives have been removed and the only surviving early features are fairly minor, i.e. doors, light switches, etc. Up in the roofspace, where the shafts originally travelled, are a collection of post-war and modern ventilation ducts, power conduits, tannoys and fans.

A rather ornate water tower was included in the original factory construction, situated at the centre of the north elevation. This is described separately in this section and the ground floor is included in the 1912 factory plan (fig. 8) and again in figure 10 with the other three levels.

The 1936 extension to the west was constructed in similar form to the original factory, built in English-bonded yellow stock bricks five bays deep by seven bays long. A contemporary site plan (fig. 4) indicates an expansion of the machine shop capacity and additional workshops, predominantly to the north side. First floor offices/galleries (presumably for senior workers) were added along the north bay and at the west end some time after. The structure is

virtually intact, apart from the toilet block at the west end that was demolished some time ago.

At the time of the survey, the factory had been disused for some time and the interiors were in a poor state as a result of water penetration. Because of this, some of the small upstairs areas were unsafe to enter and were not recorded to the same level, although plans of the more historic ones (pre-1960s) are included in figure 5. Machinery had been removed from the working areas, but photographs in Burgess (2006, 36) give an indication of how the working area appeared in 2006, while the Marconi works was still occupied.

5.4.1 1912 Factory: external description

Because the 1912 factory has been augmented by extensions to the west and south, only the north elevation is exposed and described below. References are made to surviving plans and elevations found in Burgess, (2006 1/16-19).

North elevation

The long, 142m, north elevation (plates 40-43) runs from the 1912 Office to the 1930s extension for a total of 28 bays beside the railway sidings/platform. Loading bay openings and docks are positioned at intervals into storage and dispatch areas and smaller doorways lead into more discrete functional areas. Fenestration is minimal apart from the eastern end and external decoration is plain apart from a brick dentil eaves course below the north lights. The tall four-storey water tower stands out from the mainly single-storey factory in a Baroque church tower style and was perhaps the inspiration for the camouflaged markings on this side of lancet windows intended to confuse enemy bombers during WW2.

The first seven bays attached to the office range display inserted metal multi-pane factory windows either side of a loading door leading onto the platform from the former power test room (fig. 3 & plate 40). The opening has a large brick-arched doorway with tiled key and imposts; the same dressings also seen on the four other loading areas but here obscured by a later sliding door, one of several on the loading bays. These inserted factory windows have a central tilting operation and concrete sills and heads and probably date to the 1930s when the extension and first floor area are believed to have been added. On the first and second bays they replaced original sash windows to the battery room and power test record room (fig. 3) whose tiled heads are still visible and identical to those of the office.

A dock door stands on the ninth bay. Dock doors were built to ground level between the sidings to allow vehicles into the bays, and this one supplied the packing room along with

another on the fourteenth bay and a loading door between on the eleventh (fig. 8 & plate 41). The docks are fitted with roller shutter doors.

To the west of the tower are two low pedestrian doors followed by two higher ones all decorated with plain arched heads. These have secondary wooden sliding doors except the one to the west (fig. 8) that retains a partly glazed door and fanlight (plate 42). A modern goods reception door has been inserted into the adjoining bay from the later erection shop with roller blind door and metal canopy. The rest of the elevation is plain apart from the sliding loading door on the end bay into the original carpenter's shop (plate 42, behind skip)

South elevation

Much of the south elevation is now obscured by the 1937 factory, but original elevations (Burgess 2006) show a series of mainly blind arches with tiled imposts and keystones and loading bays situated on bays 7, 8 and 16. Semi-glazed arches in similar multi-glazed form to the fanlights along the ground floors office corridor are located in a row between bays 12 and 15 (Burgess 2006), none of which survive in their original form. The only externally-exposed arch lies on the fourth bay towards the east end, below the 1937 factory corridor (fig. 8 and plate 43).

The original western wall survives for two bays at the junction with the 1930s factory but has been removed across the factory floor and the roof above supported on a large RSJ. It probably resembled the form of the 1930s extension; a row of five north-light gables. Any blocked former windows or doors were not apparent during the survey.

Water tower

The water tower is an architecturally interesting building set within the centre of the north elevation and rising to a height of 17.7m. It is built of brick with stone quoins over four-storeys, with a truncated chimney shaft on the south-west corner and a flat roof. The chimney housed a flue for a large boiler inside the factory (Burgess 2006), logically housed in room 10 next-door to the tower. The water tank stands on the top (third) floor and has a 1352 cubic foot capacity (Burgess 2006).

The main north elevation (plate 44) is built flush with the factory range and the upper two levels set back slightly above a short balcony decorated with a dentilled course and ball finials. The same decoration was also used to decorate the pediment before it was removed along with the top part of the chimney (Burgess 2006).

The large double semi-glazed doors that open onto the railway siding are similar to those in the office range with their arched fanlight, while the arched brick head has the same tiled arch and keystone as the factory doorways. An emergency fire escape has been cut into the door (Burgess 2006) and a jib in the form of a steel joist inserted into the top of the fanlight to move materials or goods from the siding. A dark area above the jib indicates the position of a former canopy (plate 44). A large multi-pane sash window lights the first floor and is repeated on the other elevations (plate 45). A narrower one lights the second floor on all sides. All windows are dressed with flat tiled heads and keystones. The third floor is lit by small lozenge-shaped windows set within a tiled cross-shape on all sides (plate 45).

5.4.2 1912 Factory: internal description

Figure 3 is taken from the Impact Assessment and provides the layout of the 1912 factory and the functions of each area. Although it is difficult to comment on changing room function and more recent changes when viewing a stripped-out building, it appears the existing layout has changed very little, which is what may be expected from a utilitarian structure in single use and ownership for such a long time. Other sources are available for study that explain the more recent history of the company and its buildings.

Rooms 5 and 6 had unsafe ceilings due to water penetration and were not entered during the survey, though some photos are included in the archive. The first floor rooms above (rooms prefixed 701 in fig. 5) were therefore not entered either. Room 7, the carpenter's shop, was particularly affected by asbestos and all later partitions (post-1937) apart from the first floor offices were removed before access was possible.

Factory interior 1 (plate 46) was the main manufacturing area and comprises the former mounting shop, condensing and winding shop and machine shop. It is divided as thirteen longitudinal east-west bays by three north-south axial bays, formerly separated by brick walls of which only the supportive piers and steel lintels remain (fig. 8). Bays are approximately 9.3m wide and formed by boxed 6 by 10-inch steel stanchions carrying large c.12 by 20-inch steel joists. Bolted angled steel roof trusses occur at 3m intervals and carry the distinctive north-light roof. Later side corridors exist on the north and south sides (2 & 3) with entry points onto the working floor close to the traditional working area divisions. The floor is screed and covered in grey vinyl floor tiles and there are large areas of green mould and damp. Above, attached to the roof trusses are modern factory fixtures: metal ducting, fluorescent lights, electricity conduits, blowers and tannoys. No line shafts or other remains of original power drives remain. On the east wall, modern windows have been inserted to the

former test room area, which has now been subdivided to form the later corridor through from the office range. The gables looking over its flat roof have multi-pane factory glazing.

Similar horizontal pane glazing is observed to the semi-glazed panels filling the (often) knocked-through blind arches of the south wall of corridor 3, on bays 8-10 and 16-25 adjoining the 1937 factory (fig. 8) and it is assumed they date to this phase. Some are fitted with the same inter-war geometric-style doors (plate 47) like those seen in the corridor/test room area. Presumably the screens helped distribute daylight effectively between the 1912 and 1937 factories in what was a relatively dark area.

Corridor 3 retains interesting fixtures and fittings along the north factory wall in the form of metal light switch boards and contemporary fuse boxes from the inter- or post-war era (plate 48).

Large steel-plated wooden factory sliding doors cover the entry points from the corridor and mark the major circulation routes between the rooms. The doors are manufactured by 'Mather and Platt' and bear a date of 1936. Such heavy doors are opened using a boxed counterweight system (plate 49). It is clear there was a long association with this company as the inserted steel windows in room 4 (former finished stores) are made by the same firm and dated 1983 (fig. 8).

Rooms on the north side of corridor 3 were primarily used for finishing works such as testing, packing and storing and are suitably large for these purposes. All are simply-decorated with painted brick walls and blind arcading on the long walls. The roofs have the same angle-iron frames as the main factory area (1). All rooms had been stripped-out prior to demolition and removed of asbestos, leaving only major features such as doors, windows, partitions and stairs. All areas were also damp. A typical example is room 4, the former finished stores, which illustrates these basic characteristics well (plate 50). Office areas, added in the 1930s/40s, remain in rooms 4 (plate 50) 7 and 13 (fig. 8), fitted out with contemporary features like shelving and heaters. A significant feature is the overhead travelling crane in room 12, the former packing room (fig. 8 & plate 51). According to the machine plate, the crane was manufactured by 'Herbert Morris and Bastert Ltd' of Loughborough and was designed to carry a maximum weight of 5 tons. In the same room are some modern weighing scales along the south wall and an overhead water cylinder along the west wall, also manufactured by Mather and Platt (1967). The sliding doors on bay 11 are timber-built and ledged, braced and battened and typical of surviving loading doors on this side (plate 52).

The two dock doors either side have been replaced with roller metal shutters and the docking areas built up to floor level.

Rooms 8-11 stand along the railway sidings. The main one of these is the water tower 11, which is to be retained within the development. Room 9 was the heating boiler room, which is entered by a short flight of metal stairs (fig. 8). The interior retains obsolete pipework that once linked to the boiler and the red/green and white painted walls signifies service usage, the same as the cellar under the gatekeeper's house and room 10 next-door, which contains a modern an 'Atlas Copco' generator and associated switchboards.

The **water tower** (11) was accessed for survey on the ground and first floors only, since the upper two floors were infested by pigeons and unsafe. Floor plans of all levels are included in the report as figure 10.

The ground floor contains pipework and gauges within a railed enclosure along the east wall and an inserted staircase to the west (plate 53), that replaced an earlier steel ladder up to the ceiling hatch (fig. 9). A sliding door leads through into the factory raw stores (fig. 3) to enable raw materials to be brought in from the railway siding by a hoist attached to a steel (RSJ) jib. Ladders lead through ceiling hatches between the floors (fig. 10). The first floor working area is defined by pine-boarded panelling and has a concrete ceiling. No other historic features remain apart from the metal ladder to the second floor

5.4.3 1936 factory extension: external description

The extension is broadly the same in appearance as the original factory building and built in the same English bonded yellow stock bricks. The only exception is the northern bay, which has been raised to two storeys and has had pre-cast corrugated fibre cladding added to the upper walls along the north and west sides, probably in the 1960s or later. At the same time the roof was reconfigured and clad in the same material as the sides. Original fenestration and north-light roofs remain on the other four bays.

Since the east side joins onto the 1912 former elevation and the south elevation is obscured by Marconi House, only the north and west elevations are described below.

North elevation

On the north elevation (plate 55), the ground floor contains a pair of loading doors leading straight into the factory space on the first bay, a single entry point into the spray painting shop (fig. 4) and stairs up onto the first floor. The second bay was formerly occupied by a

concrete-roofed hut or shelter of some kind that is no longer standing. The doorway into it from the factory is now blocked (fig. 10). From this point onwards, the ground floor is fully glazed with horizontal factory window panes that light the former welding and metal department (fig. 4). According to site plans produced after 1951 and used during the survey, these windows replaced a number of single windows, presumably metal-framed, when the first floor was created. More recently a plethora of modern pipework emanates from the west end, associated with modern laboratory/testing areas that replaced the welding department. A raised modern boiler room or other such service building has been added at the west end, where toilets formerly stood, and has no architectural merit.

West elevation

The north bay is flat-roofed and contains horizontal windows on three levels, representing two levels inside and was presumably altered for this purpose (plate 55). The upper two windows are margin-glazed, like those on the north elevation of this bay. Beside these, modern loading doors lead out from the end of the 1960s elevation onto a (removed) concrete ramp over the site of the former toilet block. The angular north-light roofed factory elevations have narrow tilting windows in groups of four per bay except for the second bay that has shorter windows to light ground and first floor levels (fig. 10 & plate 55). All windows have concrete sills and heads and survive relatively intact.

5.4.4 1936 factory extension: internal description

The main factory interior (14) was constructed as a continuation of the machine shop to the 1912 factory and it adopts the same form and layout (plate 56). The original layout also included smaller workshops in the two northern bays, mainly for welding and spray-painting (fig. 4), now changed to become office 16, electricity substation 17 and laboratories 18. The first floor offices above the would appear integral to the original build, since the stairs between rooms 15 and 18 (fig. 10) are shown on figure 4, but those in the north-east corner of room 15 are not. Such changes to the layout date from the post-war period. The main areas of these to retain features of interest, rather than be cleared of fixtures and fittings, are room 16, part of the spray-painting shop with its high windows, substation B (17) and room 18 that houses modern laboratories, testing areas and machinery for the 'Environment Test' department (fig. 10 & plates 57 & 58). Original inter-war style doors, either split semi-glazed or the more 'domestic' single-panelled on the upper third and multi-panelled below (plate 58) lead into established areas such as rooms 19 and 20.

At the west end are the remains of semi-glazed hardboard offices 21 and 22 on two levels overlooking the factory floor (fig. 10), built in the post-war period. The interiors are carpeted

and only contain more fixed fittings such as radiators and shelving, but provide an example of such later additions that in many cases were not recorded due to safety factors (rotted floors and asbestos) (plates 59 & 60). Office/test area 22 is the latest internal addition.

5.5 1937 Modern factory (5)

The so-called 1930s factory was built onto the southern side of the main 1912 factory in c.1937, just after the factory extension was constructed and before Marconi House, which was constructed in 1939 and is noticeably absent from the 1937 site plan (fig. 4). The latter part of the 1930s was a time of great expansion for Marconi's and the factory was built in the more contemporary and ambitious International Modern Movement style.

The plan form is long and rectangular, built over two levels with four by fourteen bays and occupying a 30m by 113m area. The walls are built in reinforced concrete and rendered; the main bays are defined by rows of 13-inch reinforced concrete pillars that run the length and width of the building, though there are fewer rows on the first floor due to its lower weight-bearing needs. The Modern façade is long and low, with a cantilevered office first floor, imposing stair towers either end and projecting toilet blocks along the ground floor. From the front, the pediment of the flat roof obscures the more traditional north-light roofs of the other three bays.

At the time of the survey the building had been left for some time and graffiti had been painted onto the exteriors. The internal layout comprised mainly modern elements and the first floor was in the process of being stripped-out ready for demolition. Internal partitions are created from semi-glazed partitions and hollow bricks, some of which had been replaced by modern partitions. Suspended ceilings have been fitted to office area on both floors apart from the open-planned first floor areas that are open to the roof.

5.5.1 External description

The exteriors survive largely unaffected by modern developments apart from replaced uPVC windows. A separate gabled extension at the east end of the first floor was unsafe to enter.

South elevation

On the south elevation (plates 61-63), long metal factory window ranges, six deep and seven panes wide, occupy the ground floor, behind the low, flat-roofed toilet blocks. The central panes are margin-glazed and tilting, the vertical tilting panes alternating with fixed ones within continuous concrete sills and heads.

The cantilevered first floor thrusts forward, supported on concrete arms that also define the bays externally. Each bay contains two sets of narrow three-pane windows arranged in groups of three, all of which are replacements for original metal four-paned versions (Burgess 2006). Loading doors are located on bays 2 and 8 (from the west) accessing the factory and a store. The doors are partly obscured by metal fire escapes, the railings of which follow geometric Modern forms (plate 64).

The horizontal lines of the elevation are broken up by two large stair towers on the fifth and penultimate thirteenth bay (counting from west to east). The main west tower (plate 62) projects outwards from the main range, standing four storeys high with a roof terrace at the top. The first floor housed the Works Managers Office. The ground floor contains a pair of four-panel doors below a large glass-block fanlight that lights the main staircase inside, set within a geometric-style moulded surround that spreads outwards towards the base and then rises up as two quite subtle piers either side of the tower (plate 62). The first and second floors are lit by replacement four-pane windows. Above, the top floor is slightly narrower and decorated in art deco ziggurat style (Burgess 2006). The projecting front section holds a flag post in similar plain Modern form and metal balustrades around the pediment. The east tower (plate 63) is slightly lower, standing to only two levels. A short flight of steps leads to semi-glazed doors (Burgess 2006) at the front. Slightly recessed vertical windows rise from either side and above the doorway, separated by concrete fins to the top. A row of three windows at first floor level have been painted white.

A series of concrete steps recessed back from the tower on the east side originally provided entry into the test rooms, but the doorway is now blocked (fig. 11a).

East elevation

The south elevation curves around to meet the eastern side of the building in a graceful ocean-liner Modernist curve, produced by the continuation of the toilet block from the south side of the building (plate 65). A second lavatory block stands further to the north. Full factory fenestration on the ground floor is the same as the south side and above for most of the elevation is a later pitched roof addition which is at odds with the main structure. This extension (plate 64) is lit by metal casement windows and has a corrugated asbestos roof and is of no architectural interest. A modern fire escape is fitted towards the northern end of the elevation.

West elevation

Fenestration on the ground floor of the west elevation is the same as the other sides. The first floor has a row of narrower windows, in-between the two covered corridors bridging the gap between this building and Marconi House. There are two entrance points by the factory entrance, one of which is original, containing a five-panel door and the other is a later insertion containing a roller door (plate 66).

5.5.2 Internal description

As with other parts of the complex, through several decades of change and improvement of the Marconi works, only parts of the original ground and first floor layouts remain. Generally, few fixtures or fittings of interest remain from the stripping-out of the works after closure and the whole place has suffered from damp.

Older partitions, either of hollow brick or semi-glazed hardboard screens are mixed in with other more lightweight modern so-called 'office partitions' inserted to form new activity areas or replace old ones, as identified by comparing former site plans of the works with the current layout. Original flooring has been replaced with modern vinyl tiles in the ground floor factory or carpeting in the first floor offices, on raised floors in the main areas. Fluorescent lighting was added some time ago and, away from the main working areas, suspended ceilings have been fitted. As one may expect, factory areas have only minimal decoration whilst office areas can be expected to have more detail. Unfortunately the configuration of the offices on the first floor has been substantially changed and modernised.

Ground floor

Historic site plans show partitioned factory areas on the ground floor with testing rooms and stores along the east side and several rooms, including the works office, to the north (fig. 4). In the modern factory, many of these partitions have been removed. Much of the factory space (4 & 6) is now taken up with former Selex-period laboratories, stores, workshops and staff rooms and only part of the factory/office partitions around the works office survive (5). However, the partition between the testing rooms and factory remains (4) and also the main corridor (2) from the west tower entrance, albeit replaced in the modern period. Decoration is plain. Doors between rooms are semi-glazed, often with narrow central panes and doors onto corridors are four-panelled with glazing in the top panel in plain architraves.

The main entrance at the west tower leads into stair lobby 1 within the west tower. Set prominently in front of the doors is the main stair up to the Managers Office and first floor corridor (fig. 11a). The stair is constructed in concrete with a solid balustrade, finished in

green and yellow terrazzo in art deco style (plate 67). The wooden handrails mentioned in Burgess (2006) had been removed at the time of the survey. Around the stair is a cream-tiled floor. Such stair and flooring finishes are also found in Marconi House and the 720 Building. To the west of the stair is the lift, the entry to which is blocked on this side (fig. 11a). To the east is the (reduced) doorway into the factory. The area beneath the stair leads onto corridor 2, between factory areas 3 and 6, through the work's office (5) and into the main factory area. The corridor is part of the original layout but its walls, once either solid walls or more likely semi-glazed hardboard screens, have been replaced with light modern partitions. Factory space 3 has modern Selex-period laboratories, stores, workshops and staff rooms along the south side but is otherwise open-plan. There are good views from here towards the 1912 factory (plate 68). More Selex stores occupy factory area 6.

An interesting feature of the workspace is the two glazed ceiling panels running longitudinally within the two central bays (fig.11a & plate 68 & 69). Plate 69 provides clearer detail and original partitioning to the testing rooms (4). Works office 5 is the only other definable room on this level. Typical 1930s glazed doors and screens are also visible around the cast iron factory stairs in office 5.

The stair lobby of the east tower (7) is more functional in design than the west tower and offers access to the east end of the factory, toilets and upper floor. Decoration is minimal and the plain concrete dog-leg stairs (plate 70) are clearly for 'blue collar' use. The blocked doorway between the east tower and lavatory block originally provided exclusive access to the test areas (4) (fig. 11a).

Most of the lavatory blocks survive, though some have been converted to stores. Unlike the 1912 office toilets, the cubicles here have plain four-panelled doors. Most other fixtures have been updated but it is interesting to note the urinals appear to have been specially commissioned; bearing the name 'Radio' and manufactured by Adamsez Ltd of Scotswood-on-Tyne (see archive plate).

First floor

The first floor is arranged with south-facing offices at the front, primarily the Works Manager's in the projecting west tower, with offices and working areas of various sizes behind, linked by a long corridor which runs from the rear of the 1912 offices through to Marconi House (fig. 5 & plate 71).

The 1948 site plan provides an early representation of the first floor layout based on a 1939 site plan and it is interesting to note where former lines from the earlier plan were erased in its creation. This shows up particularly well at the two ends of the south office frontage where offices were removed to enlarge the areas here (fig. 5). The layout clearly shows the office range at the front separated by a major corridor from rooms of differing sizes that logically provided administration and service roles, since the upper floor was primarily a 'white collar' area. Modern changes have meant that most of these have disappeared to become open-planned work areas (4 & 6, fig. 11b), and modern offices, meaning that the manager's office 2 is the only one to survive in its original form.

Curved Modern-style walls mark the start of the corridor 1 either side of the west tower stair landing (fig. 11b). From here, the corridor continues westwards into Marconi House (over the covered raised bridge) and eastwards around room 6 and area 7 to meet the first floor corridor from the 1912 Offices (fig. 11b). Corridor 1 has been replaced with modern office partitioning except for the western part of the north wall (fig. 11b & plate 72), which is constructed from hollow bricks, painted yellow to match the stairs and detailed with stained 4-inch bevelled skirting boards.

Corridor doorways are set within thick plain moulded architraves and contain four-panel doors that include a glazed upper panel, also seen downstairs (plate 73). Doors to the emergency exits are similar and fully-glazed (plate 74). The manager's room (2) has been modernised and retains no interesting details, but the adjoining toilet (wc in fig. 11b) which is accessed from the landing, shares the same décor as the stair lobby below, plus a good quality glazed door (plate 75), suggesting the office was decorated to a high standard originally. Above the manager's room is the tower attic room, which has a parquet floor but no other detail worth noting. The wooden staircase up to it is narrow but quite grand in comparison to those in the factory (plate 76).

Corridor 3 is constructed of hollow brick and half-boarding and lit by north-lights. It is plainer in decoration than corridor 1 and leads to metal stairs that connect to those in the workshop offices below. Like other stairs intended for factory-worker use, it is lit by semi-glazed partitions.

The view inside room 4 is virtually unchanged apart from the raised carpeted floor (also in the other open area, 6) and shows the semi-glazed partition and entrance into the former telephone exchange 5 (plate 77). There is nothing of interest inside.

Room 6 (plate 78) was originally open-planned apart from the toilets on the north side, that remain, and rooms on the western side, that have not. The walls, floors and doors are modern.

Area 7, underneath the modern pitched roof extension at the east end of the factory, was unsafe and could not be entered during the survey.

5.6 Marconi House (6)

Marconi House was designed in 1938/39 to accommodate the existing sales and office staff from the 1912 office range and relocate staff from its London offices at Elettra House (Burgess 2006), to become the company's worldwide headquarters. The main reception area was on the ground floor and the upper floors contained offices, with other rooms serving clerical and auxiliary functions.

The structure stands on the south side of the 1936 factory extension and is separated by the 1937 Modern factory by the southern factory entrance, but is linked to it at first floor level by two covered walkways and an office at the front (plate 79). Later Building 720 stands opposite (fig. 1).

Like the 1937 factory, the office block is built in the International Modern Movement style. In summary, it is a large five-storey, broadly U-shaped structure, occupying an area of 38m by 47m, with a glazed roof atrium in-filling the ground floor space linking to the factory (fig. 12a). The structural core is arranged on concrete pillars with the outer walls built with 6-inch thick concrete walls separated by a 2-inch cavity. Non-load-bearing internal walls are constructed from 3-inch hollow tiles (Burgess 2006).

Externally the appearance of the structure has not changed particularly apart from its replaced windows. Internally there are good surviving interiors on the ground and fourth floors, the latter of which retains much of its original room layout. Whilst some interesting Art Deco features have been retained, offices on all levels have been modernised with the addition of carpeted floors, new radiators and suspended ceilings. Original room divisions have been removed and open-plan offices created on the first floor in particular. The roof is flat and covered in bitumen felt.

5.6.1 External description

The exteriors survive largely unaffected by modern developments apart from the windows that were replaced with aluminium frames in 1978/9, but were probably Crittalls-type metal

casements originally (Burgess 2006). The elevations either side of the entrance bay are uniform apart from a few differences on ground and first floor levels, which are highlighted in the text.

The main feature of the building is the rotunda on the south-east corner, which marks the formal entrance bay and also contained prominent rooms on the higher levels (plate 80). It is the tallest and most focal part, followed by the bays each side and the side wings. The ground floor is taller than the upper floors and its entrance lobby is fully-glazed and decorated with geometric banding dividing the lower from the upper half, repeated on the central doorway (boarded from the outside -plate 81- but seen internally in plate 87). On consecutive floors the windows wrap around the bay in regular horizontal bands with continuous concrete heads and sills. At the top of the circular bay is a fluted band that continues in narrower form on all sides and above it is a round pediment decorated by flag masts and tubular steel handrails.

East elevation

The east elevation (partly seen in plate 79) connects on first floor level with the 1937 factory by corridors on bays three and seven and by the adjoining office on the second bay. The ground floor has wide metal factory window ranges, the same on each of the outer elevations, and pedestrian entry points at either end (fig. 8a).

Across the elevation, the (casement) windows are arranged in regular horizontal bands with continuous concrete heads and sills. Those in bay two are narrower, two panes wide, while the remainder have four panes, generally one per office and topped by projecting concrete canopies, and this pattern is repeated on the south elevation also. Original drawings show that the window transoms continued through the concrete piers either sides (Burgess 2006 1/36 & 37), though successive layers of paint have made them less apparent, and that some of the windows were sound-proofed (Burgess 2006).

South elevation

The ground floor southern bay next to the rotunda has a glazed block screen on a granite plinth (Burgess 2006) that lights the foyer (plate 81). Apart from this detailing, the south elevation has the same form as the eastern side. One point of interest is the positioning of the windows around the corners of the building, which is a Modern design trait (plate 82).

West elevation

The west elevation is canted slightly to the east apart from the northern external stair bay to the rear entrance (indicated in fig. 12b). Generally, the same features are evident on this elevation as the south and east, apart from a blocked loading door on the southern bay (fig. 12a). The stair has two concrete flights and solid balustrades, with a certain Modern ziggurat-style to it (plate 82, far left). Entry into the building is via a recessed open-fronted entrance lobby with fluted sides and a short round-ended concrete canopy. The foyer inside is lit by a glazed block screen (fig. 12b & plate 83).

North elevation

The north elevation forms a U-shape around the ground floor glass-roofed atrium and has a similar arrangement of aluminium windows on the shorter end walls (fig. 12). Inside elevations around the atrium repeat the main themes, though it is interesting to note the staggered windows that light the east-side stairs, and the service structures on the roof (plate 84).

5.6.2 Internal description

Because the role of Marconi House has not greatly change over the decades, original layouts and fixtures and fittings generally survive better here than in the factory areas and in better condition, without the ingress of damp that has affected the more vulnerable north-light roofs. It appears to have stayed in use for longer as well, and was still occupied when the Impact Assessment survey was conducted in 2006, and was probably one of the last areas to close. The only real exception to this is the ground floor where certain areas have been re-configured as new office space in the modern period.

Ground floor room layout is specific to its roles as a reception area at the front, works offices and factory/testing areas in the atrium while the function of the upper floors was as offices and administration areas for the different departments they served. Therefore the original room layouts between the first to fourth floors were broadly the same. However, as may be expected over time, some degree of alteration and modernisation has occurred within these areas, primarily the first floor where a largely open-plan office has been created, and to a lesser extent on the second floor. The upper floors, in particular the fourth floor that housed the most senior offices, have remained virtually intact, and the overall effects of modern intrusion have been relatively minor. With this in mind, the following text has been arranged in three separate sections, the ground floor (which is different because of its reception and factory functions (testing areas/laboratories) and the first to fourth floors that have many common facets. To illustrate this floor plans are included to provide examples of modern

room layouts (fig. 12b, first floor) and more complete historic layouts (fig. 12c, fourth floor). Plans of the second and third floors are not included because their form is so similar to the existing fourth floor, though original plans of these levels may be found in Burgess (2006).

Based on the first and fourth floors, the latter part of this section describes layout, décor, fixtures and fittings common to all upper floors, identifying both examples of survival of original features and examples of more recent change in order to highlight the general character. This includes summary descriptions of each floor to highlight any variations in room layouts from original plans included in Burgess (2006 1/30-35) and subsequent changes in room layout.

All furniture and office equipment had been removed prior to the survey and contractors had been required to identify and remove asbestos from the building, prior to stripping-out and demolition. Because of the lack of features, specific room function or occupancy other than in fairly broad terms was difficult to identify. Common modern additions such as carpet flooring, suspended ceilings and fluorescent lighting have been fitted as part of the ongoing use but interesting Art Deco-style fixtures and fittings remain and are highlighted in the text. Original semi-glazed room partitions, made from hard board and hollow tile sub-divide spaces alongside modern office partitions.

Ground floor

Historically the ground floor was the hub of the Marconi company and its formal face. This level was essentially mixed use, combining the reception areas around of the entrance bay and foyer, with its high levels of décor, with office and auxiliary rooms to the north-east, open factory areas to the west and east and toilet facilities facing onto the main working areas (fig. 12a). These roles remain virtually unchanged but for the insertion of works offices along the eastern side.

The principal entrance leads into circular entrance lobby 1, defined on the ground by a red painted band that continues around the sides of the room (plate 85). The rest of the floor has been screed over for carpet. Walls have an Art Deco cream terrazzo finish to them, combined with yellow banding at the base and incised thin horizontal black lines at regular intervals in geometric form (plate 85). Either side of the margin-glazed swing doors into the foyer are metal ventilation panels and thin metal radiators, perhaps designed exclusively for Marconi's (plate 86). A single two panel door with upper margin light glazing leads to a visitors' toilet. In the ceiling is a disc-like light with subtle broadly-stepped geometric mouldings radiating from it (plate 85). A similar form is used on the north-west stair lobbies

on the upper floors. Foyer 2 is a larger area with similar decoration, accessed from lobby 1. Upon entry is the reception desk to the north-east (plate 87), lifts and stairs to the north-west and entry into the atrium to the west (fig. 12a). The main architectural feature here is the staircase that sweeps around in a graceful curve up to the floors above (plate 88). The combination of green and cream terrazzo is particularly effective; primarily the way the green panels rise up and around the mustard capped cylindrical newels. The stairs are built of concrete and have the same terrazzo finish as those in the west tower of the 1937 factory. On the sides of the room, a band of grey geometric tiles separates the terrazzo and plaster finishes, apart from the glazed south wall. Above the lift doors, and in the three corners of the room, there are fixed metal scallop-shaped up-lights. Plate 89 shows the light over the lift doors and detailing to the grey band; alternating groups of horizontal and vertical geometric bands arranged in threes, a common 1930s form of decoration.

Rooms immediately on the north side of the foyer (3) have been altered as offices, and the rest have auxiliary uses as plant and electricity switch rooms and have little historic interest (fig. 12a).

Entry into the largest part of the ground floor, the atrium (plate 90), was possible from the foyer and the 1936 factory. Original plans reproduced in Burgess (2006) show an open space extending across the whole western half of the building apart from a second group of toilets, which remain. Semi-glazed and modern partitions have been added along the west and south walls representing two different phases of sub-division, one row of which masks a former factory loading bay (fig. 12a). Away from the main manufacturing areas, these were software test rooms in the final stages of GEC Marconi (fig. 12a). The low-pitched angle-iron skylight roof over the atrium is in three sections of varying lengths, conforming to the irregular nature of this area and fitted with wire glass. Ventilation was supplied through skylights operated by a rod mechanism in the same way as similar lights in the factory test rooms and Building 720.

First to fourth floors

From the first floor upwards, the rooms were primarily used for office accommodation, filing and storage (Burgess 2006) for the various departments or groups, and adopt a similar room layout, with generally small offices along the outer walls (west, south and north) and larger offices and perhaps more 'technical' rooms on the opposite side of the U-shaped corridor, facing over the atrium roof. The only exception is the first floor, which has the linking corridors to the 1937 factory on the east side and external stairs on the west (fig. 12b). An ante-room precedes meeting room 4 on the fourth floor (fig. 12c). Descriptions of rooms and

floor layouts are based on the first and fourth floor plans with photographs to illustrate, drawn from all levels. Photographs of the first floor provide detail in certain areas and represent how the office was arranged in the modern period shortly before closure.

From the foyer on the ground floor, the main stairs lead up through the building in the south-east corner (fig. 12a). Stair landings or lobbies on each floor (1) are lit by a skylight above and share the same form of wall decoration as the stairs. They adopt a dog-leg form with tight Modern-style rounded corners on the inner balustrade (plates 91 & 92). Finishings to the original metal handrails have been removed either side as well as most of the geometric window railings (plate 93). It would seem the corners of the stairs were lit by lamps, four on each, since cut off. Narrow metal air vents are located on the west landing walls (plate 91). On the south side of the landing are the lifts, which are relatively modern but in their original position (Burgess 2006) and swing doors either side leading onto corridor 2 (fig. 12b & 12c). These hardwood doors have leaded-glazing with leaded fanlights above (plate 94).

All corridors (2, 6 and 9) were originally defined by semi-glazed room partitions (plate 95), apart from corridor 2 on the fourth floor, which contained offices for the more prominent personnel, and tends to have solid walls for greater privacy (plate 96). There is no extra decoration to the corridors. Room numbering is prefixed by the floor number, e.g. 403 on the top floor. Doors have leaded light panels in the top half and all those on corridor 2 retain their unpainted hardwood (?mahogany) appearance (plate 95) while others were simply painted (plate 102). Office doors on the top floor also have two-pane fanlights over to provide ventilation. Inside, the offices are plainly decorated and lacking in fixtures and fittings apart from a few examples on the fourth floor.

Some corridors retain brass ceiling ventilators or ?air conditioning that may have been specifically designed and produced at the Marconi works (plate 95).

One of the main rooms on all levels is the meeting room housed in the south-east rotunda (4). Apart from the fourth floor, which has a small ante room, the majority are entered from the corner of corridors 2 and 5. Each one of these has its own distinctive decorative style that becomes grander as the floors progress upwards. The first floor 'conference room', as it is known, is more contemporary styled than the others with a simply-moulded dado and architraves. A deep coved cornice runs around the ceiling and decorates the beam across the width of the room. The second floor 'lecture room' (former library according to Burgess 2006) is similar minus the dado, and with twin-panelled blue doors and 1960s style cabinets fitted to two of the walls (plate 97). On the north-east wall is a roll-down screen and white

board. The third floor room is Georgian-themed with low wooden panelling, six-panel doors, square fluted pilasters, deep moulded cornice, finished with egg and dart, and spindle and bead, mouldings (plate 98). The fourth floor is decorated more in the manner of the 1912 stair hall, with pink-coloured panelling to the walls, twin-panelled doors and a moulded cornice (plate 99).

Adjoining the north side of the rotunda on floors 1 to 4 is a washroom/toilet suite that echoes the Art Deco style of the stairs and foyer with its terrazzo floor and walls and geometric forms, particularly the slightly-stepped mustard-coloured picture rail and globe lightshade (plate 100). Here also are leaded light panels. Whilst most of the rooms are heated with cast iron radiators, the fourth floor washroom is heated by a stylish chrome radiator with hexagonal fittings (plate 101).

Corridor 5 separates the offices either side of the east wing and is defined by semi-glazed walls lit by margin lights to the offices and high-lights to the more private areas, such as toilets and stores (plate 95). The number of offices on the east side of the corridor varies slightly from floor to floor, particularly on the first floor which houses the corridors to the offices of the 1937 factory (fig. 12b). The two corridors leading to the 1937 factory again have similar partitions. A larger, more open, room configuration tends to be on the west side of the corridor (room 7, plate 102), which largely retain the same form. At the north end of corridor 5 are the plainer concrete service stairs leading down to the factory floor (fig. 12) with crude iron geometric-style balustrades.

Corridor 9 provides an access route through the west wing and shares the same semi-glazed partitions as corridors 2 and 6. On the first floor these have been replaced to create open-planned offices either side of the corridor route (plate 103).

Judging from its décor, room 14 on the corner between corridors 2 and 9 on the fourth floor was used for executives perhaps staying overnight since it has its own built-in clothes cupboard and bathroom suite (fig. 12c). The room is fitted with moulded dado and cornice and a wood block floor under the modern carpet. Two fine rosewood doors on the north wall give access to the cupboard and bathroom suite (fig. 12c & plate 104). Inside the bathroom are interesting fixtures and fittings including a 1930s sink (plate 105) and flat-panelled radiator. The floor has terrazzo tiling like the east wing washrooms. A modern shower has been fitted, possibly replacing an earlier bath. In the adjoining room to the east of room 14 is a 1930s wardrobe (fig. 12c & plate 106). Such features are a rare survival. The only other

fixtures recorded on this level were some well-designed Art-Deco coat hooks in room 10 (fig. 12c & plate 107).

The odd configuration of offices on the east side of corridor 9, around room 11, remains largely intact on most floors, though inevitably modernised. At the north end of the second to fourth floors, the corridor finishes with lift/stair lobby 12 and offices 13 (fig. 12c). On the south side of the lobby are the entrances to the ladies toilet and a porter's office to monitor movements down the goods lift. The first floor foyer 12 is larger and grander than the other floors because of its association with the external stair in the north-west corner, with a broad stepped cornice on the walls and leaded side panels to the swing doors that exit onto the external stair lobby (plate 108).

On all floors, the internal stair on the east side of the lobby is decorated in the same way as the principle stair but with little embellishment. It is interesting to note how the windows follow the line of the stair (plate 109) and old radiators survive here on the landings.

5.7 Building 720 (7)

Building 720 is the latest component of the historic group, believed to have built in 1951 as factory space and the works canteen, replacing the former mess rooms on the New Street frontage that were converted to working areas. It adopts a large rectangular plan form of six bays measuring 23m by 77m, with the main facade facing the Modern factory and Marconi House to the north. Either ends have projecting stair bays and at the back is the 1950s kitchen block, supported on concrete piloti (now infilled), and a narrow tangential block running south from the main block (Burgess 2006). In construction terms, its exterior is brick-built around a 6m grid of reinforced square concrete columns forming five by twelve bays. The roof has a distinctively 'wavy' form from its six concrete barrel vaults and is covered in bitumen felt, sealing its once distinctive circular light wells. The kitchen block to the east has a flat roof and lantern lights. In c.1965 a new canteen and office block was constructed on the west side. Due to its late date, this building was not included in the survey, but general photographs are included in the archive.

The buildings inside retains much of its earlier layout, although some rooms have been reconfigured by modern partitions. The interiors survive in better condition than in the main factory areas. After canteen facilities were moved to the 1965 building, new doorways were inserted between the two, and access routes off the stairs. The first floor appears to have been used as part of the social club at some stage, and badminton courts accommodated

(see archive plate), but latterly this level was carpeted and used for offices for Customer Services and Marconi Marine (fig. 13b).

5.7.1 External description

The exteriors are heavily glazed with metal windows between the piers around the factory and canteen areas, and continuous concrete sills and heads. The walls are rendered and painted white to match Marconi House and the 1937 factory, apart from the walls below the sills, which show painted brickwork. The main elevations are similar in nature and share the same functions apart from the south elevation which is more complicated. Its most distinctive feature, however, is its wavy roof.

North elevation

Fenestration on the ground floor factory level consists of sixteen-pane tilting horizontal lights. Canteen windows on the first floor have a different arrangement of central casements between horizontal panes (plate 110).

East elevation

The ground floor has a central roller metal loading door and to the north are a blocked side entrance and window. A new entrance has been inserted on the south side of the roller door loading bay (fig. 13a). Fenestration above is the same as the north side (plate 110). The second bay from the south elevation is occupied by the flat-roofed stair bay, which has more domestic-style casement windows on both levels, the largest of which light the stairs on the east side. Smaller casements are located above the concrete-canopied doorway onto the stairs (plate 110). Another doorway is located on the first bay (fig. 13a).

West elevation

The west elevation (plate 111) follows the main themes of the east side around the factory and canteen, but with some shorter windows on the ground floor to light the toilets. A shorter projecting stair bay connects to the south lit by metal casement windows on the west side and narrow tiling windows over the stair entrance. A large factory entrance stands at the north end of the elevation (fig. 13a).

Standing against the stair bay is the three-storey modern office building (plate 111) that was built for apprentice training and offices, but later converted to kitchens and canteens (fig. 13). It has a concrete frame clad with pre-cast concrete panels (Burgess 2006). Due to its recent date, no other survey works were undertaken of this addition.

South elevation

The south elevation was difficult to view in its entirety due to overgrown vegetation and its proximity to the site boundary (railway line). Only the three levels at the back of the main factory/canteen block (including the mezzanine) and the two-storey tangential kitchen block were studied (plate 112).

Ground floor and mezzanine fenestration at the rear of the main block comprises rows of metal framed casement windows, in four-light groups on the ground floor and longer nine-light rows on the mezzanine level, one per bay. Rows of narrow tilting windows light the first floor. Around to the east, the open undercroft underneath kitchen block was infilled as a service area using concrete block in the modern period and was not surveyed. Above, lighting the kitchen, the windows are the same as those on the canteen, but in shorter two-pane lengths (plate 112). There is also a fire escape and above the kitchen is a tall boiler flue.

5.7.2 Internal description

Ground floor

The ground floor (plate 113) is a large factory space (1) divided into 36 bays by 15-inch square concrete columns over a grey vinyl tile floor and fitted out with air-lines, fluorescent lighting and cast iron radiators along the window range. On the southern side are offices, stores, lavatories and electricity switch-rooms, with two sets of double doors leading outwards to the back and concrete steps leading up to the mezzanine level either side (fig. 13a & plate 114). Some of these rooms have been rearranged in the modern period, but many retain their original form. At the western end are two further rooms (3, toilets and staff room) for apprentices who had separate facilities from the male and female staff (Burgess 2006) and separated from the working area by a modern corridor (fig. 13a). Entry points are accessed from stairs in the projecting bays either side, that on the west side is entered via a small lobby, decorated in yellow terrazzo floor ties and terrazzo walling up to the middle point and separated by a pair of glazed double doors (plate 115). This décor is similar, though more basic, to those in the Modern buildings, and continues up the stairs on both ends of the building that are fitted with solid balustrades with a yellow terrazzo finish and wooden handrails (plate 116). Emergency exits are located on the north-east and north-west corners (fig. 13a). The exit on the east elevation has been blocked.

In the projecting wing to the south (rear) is a plain concrete and metal-railed service stair up to the kitchen, entered from the former undercroft (fig 13a). Other rooms in the wing include a boiler room and other plant rooms.

Mezzanine floor

The mezzanine floor occupies the south wall of the main part of the building, over rooms 2, and is reached by stairs either side (fig. 13a). It overlooks the factory floor from the balcony (plate 117). On this floor is a row of several rooms, with stores occupying the central part, and offices either side. A lecture room was located at the west end (fig. 13a & plate 117). Original room divisions are simple and defined by steel and hardboard semi-glazed partitions and plain semi-glazed doors (plate 118).

First floor

The first floor above the manufacturing area was originally occupied by a staff and 'hourly paid' canteen with a demountable screen between the two (Burgess 2006) and a large kitchen occupying the southern block with its own staircase and toilet facilities. More recently the floor was occupied by Marconi Marine and the Customer Services department (fig. 13a) and in canteen 1 a modern raised floor has been inserted, office partitions, a suspended ceiling (plate 119) and a corridor has been formed beside serving area 2 (fig. 13b). Stripping-out exposed earlier terrazzo floor tiles and the barrel-vaulted ceiling (plate 120), including the blocked circular skylights, original florescent lighting and ventilation units (plates 120-122). A 1930s Eastern Electric fusebox and switchboard occupies part of the south wall of the western bay (fig. 13c & plate 123).

Modern partitions largely hide the yellow tiled walls in serving area 2 and kitchen 3 (plate 124) but it is clear the terrazzo flooring continued into these areas. Toilets/cloakrooms are located at the east and west ends of the service area building (fig. 13c). Lining the outer walls of the kitchen are various cold rooms, fridges and food preparation areas (fig. 13b).

5.8 Power house (8)

The power house stands opposite the 1912 factory on the boundary with Marconi Road (fig. 1) and is to be retained and refurbished in the current proposals. When it was built in 1912, at the very start of the factory, it was a single structure with a boiler room to the west and a turbine room to the east, which were extended southwards in 1928 and 1930 (Burgess 2006) to form the generator room. A further extension in the inter-war period added another bay to the west of the boiler house, and brick shed-like structures were added on the same side in the post-war period. The chimney was replaced in 1985 with a steel flue (Burgess 2006). It is worth noting the presence of several other structures to the west of the power house that are shown on the 1937 site map (test areas, etc. in fig. 4) that have not survived.

Plan form is broadly oblong and orientated west to east with a double-pile slate roof, gables either end, and a chimney in the middle. All parts are built in yellow stock bricks. Entry points are located on the east and west sides, the west side having the wider loading doors into the generating room and into the boiler house via the later Fletton-brick shed. Access from Marconi road has been sealed off. To the west and east are platforms for oil tanks and coal stores. The former rail line has been replaced with concrete hardstanding to the south. Inside the original structure encompassed eight bays, with the slightly larger boiler house separated from the turbine room by a solid wall. The generating room to the south is built over six larger bays and in the same materials in matching form.

Inside, the current building retains two of its old Compton turbines and the boiler room has modern 'Robey' boilers. The generating room is open-planned and cleared of its machinery and was last used by the company for storing spare parts and carrying out repairs, but is now infested by pigeons.

5.8.1 External description

The original building matches the 1928 and 1930 extensions in form and character, but later extensions and alterations have harmed its appearance. Windows, where they survive, are of the metal Crittalls multi-pane industrial type, top-opening and centrally-tilting, with arched brick heads and concrete or codestone sills. Windows on the Marconi Road elevation are set high as a security measure, and brick walling continues either enclosing the fuel tanks and coal stores either side. Roof lights occupy the ridge spaces.

The join between the 1928 and 1939 extensions is difficult to see externally, since the builds match each other.

North elevation

The north elevation, along Marconi Road, has a plain functional form punctuated on the first three bays of the turbine room, working from east to west, by high multi-pane factory windows (plate 125). Two of these survive virtually complete but the third has been reduced to allow for modern ventilation grills. The windows have vented top panes and tiling middle ones. A doorway has been inserted below the window on the first bay, which is now sealed.

All the five windows that lit the boiler house and its 1930s extension have been blocked but their size suggests a similar form to the others, including those in the later extension (plate 125, right). In most cases the sills and heads have been retained, but there are two where only the heads are visible, arguing for two blocking phases.

East elevation

The east elevation is largely obscured by fuel tanks, but certain key details were recorded. All ground floor windows are blocked and sole entry on this side is from the southern bay through a single doorway from the fuel tank platform, whose door arch is dressed the same as the windows. Above on the turbine house gable is a metal-framed oculus window that bears the same brick detailing as those on the water tower (plate 125). The gable on the generator room retains its factory-style window below a concrete lintel but is mainly obscured by the tank.

South elevation

The south elevation (plate 126) faces inwards towards the factory across the former railway siding and dates to the inter-war period. The first four bays, working from east to west, are fenestrated with narrow 15-paned windows on the first and third bays, which have vented top panes and tilting middle ones. Former 20-pane windows on bays two and four have been affected by later activity; the first making way for a ventilation system, and the second being blocked (fig. 14 & plate 126). The window on the sixth bay has been blocked with metal shutters and above it is a blocked loading door, probably inserted at a later stage. The only one of the larger windows to survive is on the sixth bay.

West elevation

The west elevation (plate 127) faces onto a raised concrete platform that was formerly occupied by coal bunkers to fire the boilers and generators. The original boiler house elevation was removed when it was extended in the 1930s (pre-1937, see fig. 4) with a single-bay flat-roofed structure (plate 127, left). This building is much plainer, with continuous concrete sills and lintels to the only two upper windows on the south side.

Entry into the boiler room is through a pair of glazed doors leading into the modern (post-war) shed straddling the boiler house and the 1928 extension (plate 127), used as stores and electrics, but of no architectural interest. Above, though hard to discern, are the red brick dressings to an oculus window that is plainer in style than the one on the opposing gable.

A pair of original double ledged, braced and battened factory doors lead into the generator room. Two interesting points of detail here are the diamond-shaped observation panel in the worker's door and the bullnose brick jambs. On the south side is a small post-1937 plant room which, despite its later date, is built of yellow stock bricks like the earlier buildings.

Factory fenestration and dressings on the upper level, over the sheds, is intact, though the gable window above is probably inserted since it has a concrete sill.

5.8.2 Internal description

The boiler and turbine room interiors remain largely unaffected by modern developments, but, as practical buildings, have little in the way of interesting detailing or fixtures and fittings, apart from the two turbines previously mentioned. The generator room has been cleared of all its machinery apart from an overhead crane. Although it was built in two phases, the inside is one single space and is therefore described under one heading.

The internal floors are raised higher in the boiler and turbine rooms compared to the generator room to allow for under-floor services. All walls are bare painted brickwork or tiled and all floors are laid to concrete. Roofs are framed in bolted angle-iron, a typical industrial form, and have skylights along their ridges.

Boiler room

A small lobby inside the modern stores provides entry into boiler house which is occupied by two modern Robey boilers surrounded by pipework and steel gantries (fig. 14 & plate 128). A steel joist strides the division between the original boiler house and the extension, supported on a steel column. Various tanks fill this space, lit by a modern convex skylight.

Turbine room

The turbine room (plate 129) is set on a raised level with external access from Marconi Road and internal access from the generator room. The concrete floor and walls, up to the sills, are painted factory red and white thereafter. The room houses two Crompton Parkinson (manufactured in Chelmsford and Guiseley) turbines (plate 130) and perhaps formerly held a third, judging from a scar on the floor (fig. 14). Modern 'English Electric' transformers line the west wall and there is a 'Herbert Morris & Bastert' overhead crane running on tracks on the west and east walls, with a maximum load of three tons (plate 129). It is interesting to note the cast-iron radiators mounted high up on the west gable wall above the crane (plate 129). Modern plant has been removed at the southern end of the room, installed after the viewing area here was blocked in, this being quite a small room.

Generator room

The generator room (plates 131 & 132) is essentially a large empty shed, since the electrical power-generating plant was stripped-out some time ago. Its interior is largely uniform, with grey vinyl floor tiles, white-painted walls, bullnose window sills and steel tracks on the long

walls for a Morris overhead crane; maximum capacity five tons (fig. 14). A more interesting aspect is the white ceramic wall tiling mid-way up the walls of the boiler house extension beneath the peeling paint, particularly along the north wall (fig. 14), where it is topped by a thin moulded ceramic rail (plate 131). In the north-east corner is a steel staircase that provides entry into the turbine room, where the glazed screen of the viewing area remains behind later brickwork (plate 133).

5.9 Cottages (9)

3 and 4 New Street were part of the original Marconi complex, standing on the corner with Marconi Road (fig. 1), and separated from the works by a brick-arched wall partly enclosing a small front garden. The rear faced outbuildings to the west. It appears they were built to house key Marconi workers, though not managers, but maintenance workers such as electricians (fig. 4) who could be on hand to ensure the smooth running of the factory. Latterly they were used as offices.

The cottages form a mirror-image of each other and are built over two storeys in English-bonded yellow stock bricks, with a half-hipped slate roof of 35 degree pitch. Timber multi-paned casement windows are fitted throughout, with flat soldier-course heads and tiled sills.

5.9.1 External description

The exteriors survive without any sign of modifications although the building is suffering from damp through disuse. The main feature is the central Arts and Crafts-style central chimney and the unusual incorporation of the lozenge pattern in décor and internal layout.

East elevation

The front (east) elevation (plates 134 & 135) contains the two main entrance doors in the outer bays, each fitted with a five-panelled door and diamond-themed fanlight, beneath a bracketed canopy. Canted bay windows occupy the middle bays of each cottage. On the first floor, the bathroom is lit by a single casement window and the principal bedroom has a pair of casement windows. The chimney stack, which is designed to be disproportionately tall, has indented corners, an oversailing top and ceramic pots (plate 134).

Side (north and south) elevations

The side elevations are identical in form. On the ground floor is a three-light casement window lighting the kitchen. Beyond it are two small lozenge windows lighting the stair hall and larder (fig 15 & plate 136), which are unusual features. On the first floor, a tall window lights the stair and a pair of casements light the rear bedroom.

The north elevation (plate 134) was boarded up during the survey

West elevation

The rear elevation has two semi-glazed doors (one of which has been replaced with a steel security door) providing entry into the sculleries on the central bays, with integral windows between (plate 137). On the first floor are two paired casements lighting the second bedroom. In addition to the main stack are twin plain rectangular stacks serving the kitchens below.

5.9. Internal description

The internal layout survives well on the ground floor but on the first floor the walls have been removed between the back bedrooms to make larger office spaces. Many original or historic fixtures and fittings remain, primarily doors, windows and fireplaces which, because they have been replaced on the ground floor, provide an interesting sample of 1930s fireplace design.

Internal decor is plain, with plastered walls and picture rails to all rooms apart from the scullery and stair hall. Most of the doors are plain four-panelled in form, others were probably replaced in the 1930s refurbishment. Windows are original with curled fixings. All areas are carpeted and there are no signs of its later office function.

Ground floor

The front door opens onto the hallway with the stairs in front (plate 138) and cupboard beneath. Behind the stair hall is the larder, which contains a lozenge-shaped window (plate 139), fitted with well-designed catches. To the west is the kitchen, with cupboards either side of the fireplace (plate 140), that links to the scullery and back door (fig. 15). The parlour is the main front room, with its 1930s fireplace set against the angled stack (plate 141).

First floor

The first floor is reached by a quarter-turn timber staircase, with plain newel and balustrades. Entry into the bathroom at the front is off the landing, while a small lozenge-shaped lobby imitates the shape of the chimney and provides access into the three bedrooms. The bedrooms have no features of note though retain their original cast iron fireplaces (plate 142), while the bathrooms, which are rather cramped, were refurbished when the office conversion took place.

Weigh house and outbuilding range (10)

This group of buildings stands along the northern boundary of the works opposite the former railway siding and around the factory 'pond' or reservoir, that fed the factory's sprinkler system (fig. 1). The group comprises two structures built in 1912, the weigh house and well house, another surviving from the 1930s prior to the site plan of 1937 (fig. 4), and some others in the post-war period (fig. 2). All are single storey and provided storage and maintenance worker's offices functions, apart from the weigh and well houses.

During the survey, entry was prohibited to most of the outbuilding range due to unstable walls, and the area was fenced off awaiting demolition. This meant that, with the exception of the weigh house, only external records could be made, from the north side of the factory. Because internal access was not possible, no plans were created, but adequate plans are provided of the historic elements in figure 4 from 1937. In the following descriptions, the buildings are given letters prefixed by the number 10 and shown in figure 1. Where relevant these are also referenced to the 1937 plan by the numbers given in figure 4, e.g. weigh house 10/a (1).

Weigh house 10a (1)

The weigh house (plate 143) is a small single storey building close to the New Street goods entrance, built in 1912 (fig. 1). Originally there was also a roads goods weigh bridge on the western side and another bridge for rail goods on the east (Burgess 2006). The structure is built of yellow stock bricks in English bond with wooden multi-paned windows (with bullnose brick sills) and a shallow pitched slate roof and chimney on the western gable.

Externally, the structure is entered through a multi-pane semi-glazed door below a brick air vent. The south side, facing onto the weigh bridges, is plain apart from the two sliding windows onto the former weigh bridges (plate 143, left). The west elevation is obscured by the adjacent shed and features single casement windows either side of the central chimney stack. The north elevation is built onto by oil store 10b (2).

Internally, the space is occupied by a single room with bare brick walls containing its own 'home comforts' in the form of a cast iron fireplace at the west end and radiator by the door (plate 144). The roof is supported on a simple collar rafter frame.

Oil store 10b (2)

The oil store is built onto the north wall of the weigh house and is another small brick-built single storey structure similar in form to the weigh house but later in date (1930s). In

contrast, the building is built in cavity wall bond and the windows are all metal. The main entrance is on the east side, where the (modern) door stands below a concrete lintel and is flanked by single metal windows (plate 143). Side elevations have metal factory-style windows. A doorway exists on the west side into the adjacent shed.

The interior is divided into two rooms (fig. 4), but entry was not possible.

Behind the oil store, and fenced off to the west of the cottages (9), are two pre-fabricated wooden 'huts', apparently used as workers' offices (Burgess 2006), which were not viewed in the survey.

Post-war stores/offices 10c

Two adjoining pre-fabricated and corrugated iron-roofed sheds stand on the west side of the oil store (fig. 1). The eastern part (store?) is wooden-framed and had been partly-dismantled at the time of the survey, while western part, formerly used as works office, judging from the debris within, is metal-framed with corrugated iron sides and open-sided to the south (plate 145). Neither is shown in figure 4. A modern plastic 'Olympic' control booth and barrier stands to the south to control movements through the gates (plate 145, right).

Store 10d (6)

Adjoining pre-fab. sheds 10c to the west is an open-sided 'Dutch barn' style corrugated steel storage shed standing on a raised concrete floor (plate 145). The structure has an angled iron frame over four bays and a brick wall at the back. Although a building is shown on the 1937 map, it is likely that the present building is post-war in date.

Office/store 10e

This is another post-war pre-fabricated structure that adjoining shed 10d to the west, probably a works office. It has a light timber-frame and boarded exterior with gables to south and north.

Outbuilding range 10f (8-12)

The main group of buildings is a long linear row of brick buildings in poor condition, along the front of the reservoir, built in the 1930s for various uses such as electricians' workshops and foremen's offices (Burgess 2006), presumably associated with maintenance roles. The western part of the range is built in English bond in pier and panel but seemingly rebuilt from the fourth bay onwards. The southern side (plate 146) has high narrow metal-framed

windows and two main entry points, plus others on the end gables. Large areas of slates were missing from the roof and parts had also collapsed inwards.

Well house 108 (14)

Access to the 1912 well house (14) on the north-west side of the pond/reservoir was not possible during the survey, but it is described in Burgess (2006) as a small brick-built and flat-roofed structure and is labelled in figure 1.

6.0 DISCUSSION AND CONCLUSION

Marconi's was a pioneering company in the radio-electronics industry that had its world-wide headquarters and main manufacturing base at the New Street site from 1912 to 2008. The buildings that remain on the site form a large industrial complex representing four main phases, recorded in their modern context:

- The establishment of the works in 1912
- Minor additions in the 1920s
- 1930s Expansion of the works
- Post-war developments

The Listed 1912 offices (1) are the most important of the original structures to survive. Its Edwardian Baroque architecture reflects its status as the principle building of the early factory. Inside, the spatial layout remains virtually unaltered apart from the sub-division of some of the rooms with 1930s and modern partitions. Areas of interest are primarily the main stairs/stair lobbies, the fan-lit office doorways and original fireplaces. Many other 1912 construction phase buildings survive and are interesting for their historic character and group value, but tend to be plainer, more functional in design with low architectural interest. Of these, the water tower (part of 3) is the most significant as a landmark building, sharing a similar level of architectural embellishment as the offices. The 1912 factory building (3) is typical of the early 20th century factory form with its steel framework, factory glazing and north-light roof. Current interiors date largely to the 1930s and are common to all working areas. Original power drives for machinery have been removed. Otherwise, the power house (8), gatekeeper's house/mess rooms (2) and the more minor structures have plain form and built of easily-available materials, although they still have some historic importance to the site. Additions carried out in the 1920s have been sympathetic to the structures but internally these have been the most subject to change.

With the exception of the 1936 factory extension (4), which follows the architecture and form of the original factory, the 1930s buildings are designed in a more progressive Modern style using modern materials, long areas of glazing and flat roofs. The Modern façade of the 1937 factory (5) hides the more practical factory form behind. Its interiors have been re-formed in the manufacturing area and the offices modified on the first floor. Of all the 1930s buildings, Marconi House (6), the headquarters of the company, survives the best, externally and internally, especially around the reception areas and stairs, which show a strong Art Deco theme.

Later buildings are less interesting, but Building 720 (7) is a landmark feature for its wavy-roof. Although the 1965 canteen and Eastwood House were built relatively late, the character of the older buildings and the site in general have not been unduly compromised by modern development.

The impact of change has been minor to the exteriors of the buildings but, as the site has developed, internal layouts and functional areas have changed, which is the inevitable consequence of any manufacturing company - especially those in more technologically-advanced and rapidly-evolving industries like telecommunications.

The Marconi site is an important industrial complex of local, national and worldwide importance. Its various structures comprise a varied and interesting group, each broad constructional phase having its own functional merits, and in some cases architectural identities and contributions. This group has developed organically as a number of diverse buildings packed into a constrained urban site. With no 'grand plan' it is difficult to assess the site as a meaningful and cohesive whole, but more as an end product of 100 years of site evolution, compromised to some extent by functional change, modernisation and latter-day dereliction through disuse.

Of those buildings to be retained, the exteriors and the more notable internal features such as the stairs and ornamental doorways inside the Listed 1912 offices are likely to require sympathetic retention in the refurbished building. This report, made before demolition and redevelopment of the site, together with the earlier Impact Assessment, provides a record of all historically-significant structures that survive at the Marconi works and a baseline for further study of this important industrial complex.

ACKNOWLEDGEMENTS

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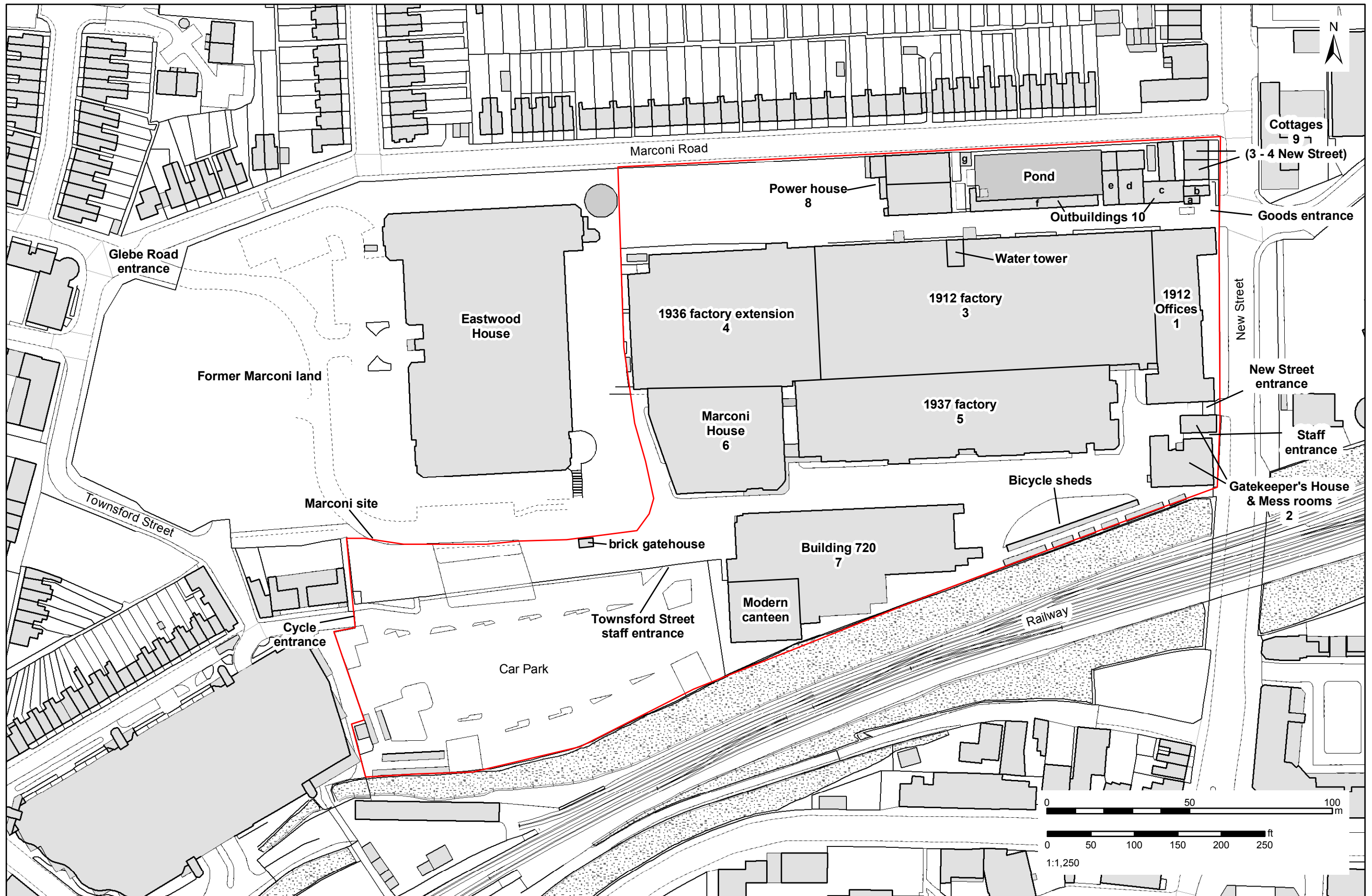


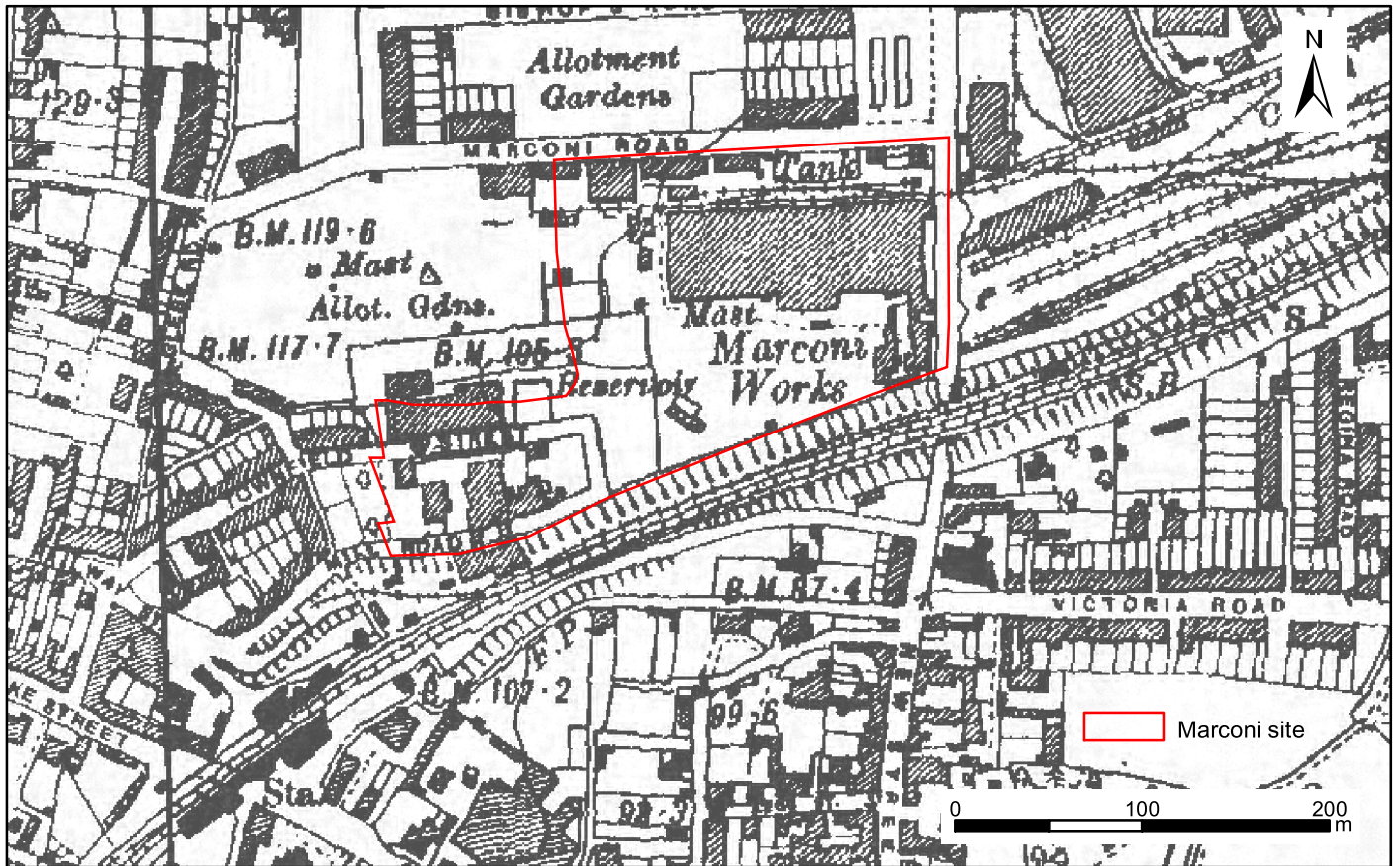
Fig.1. Site location and layout

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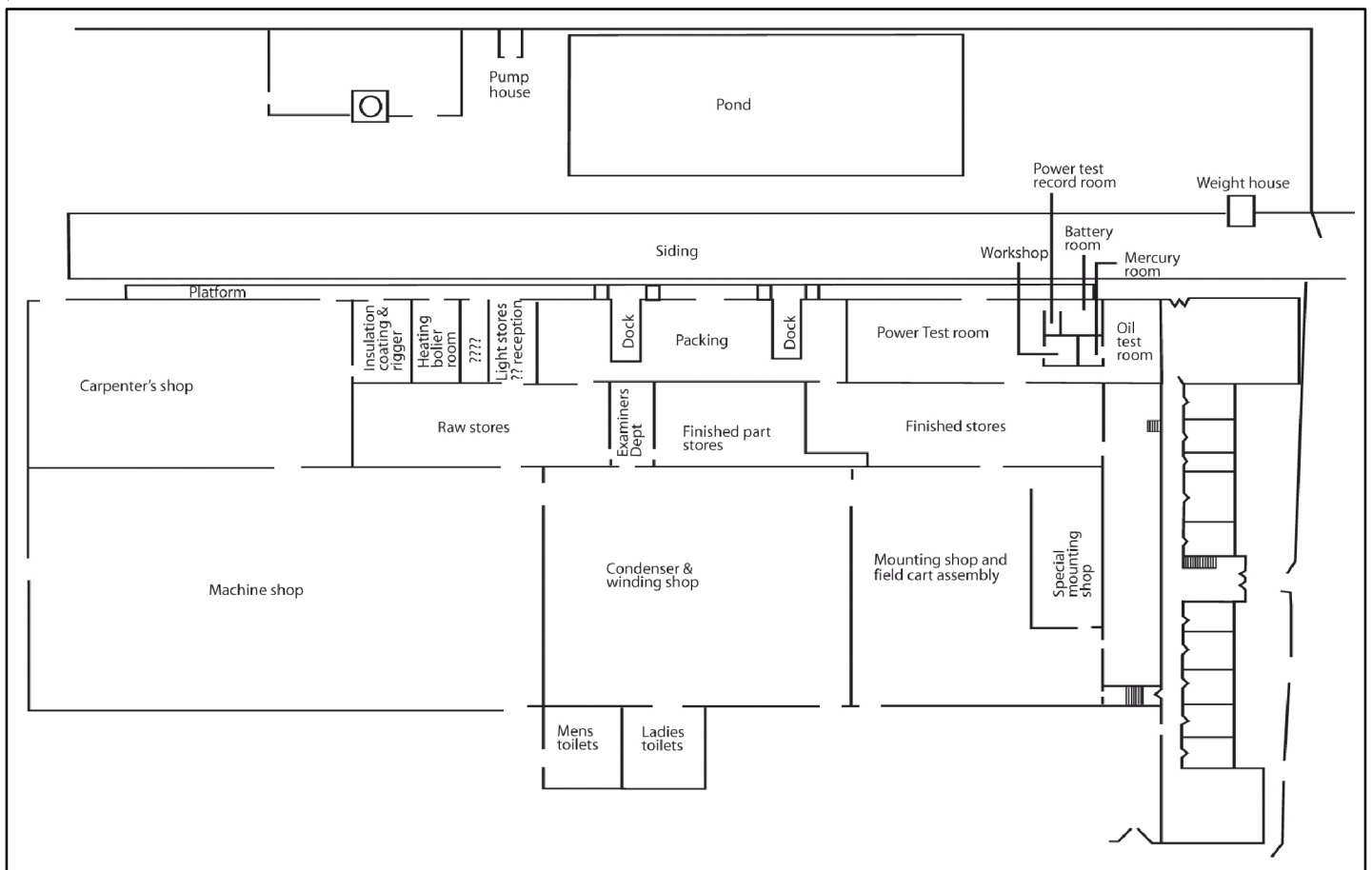


Fig.2. Phase plan

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Extract from 3rd Edition Ordnance Survey 6" (1919)



1912 Factory plan (Burgess 2006)

Figure 3

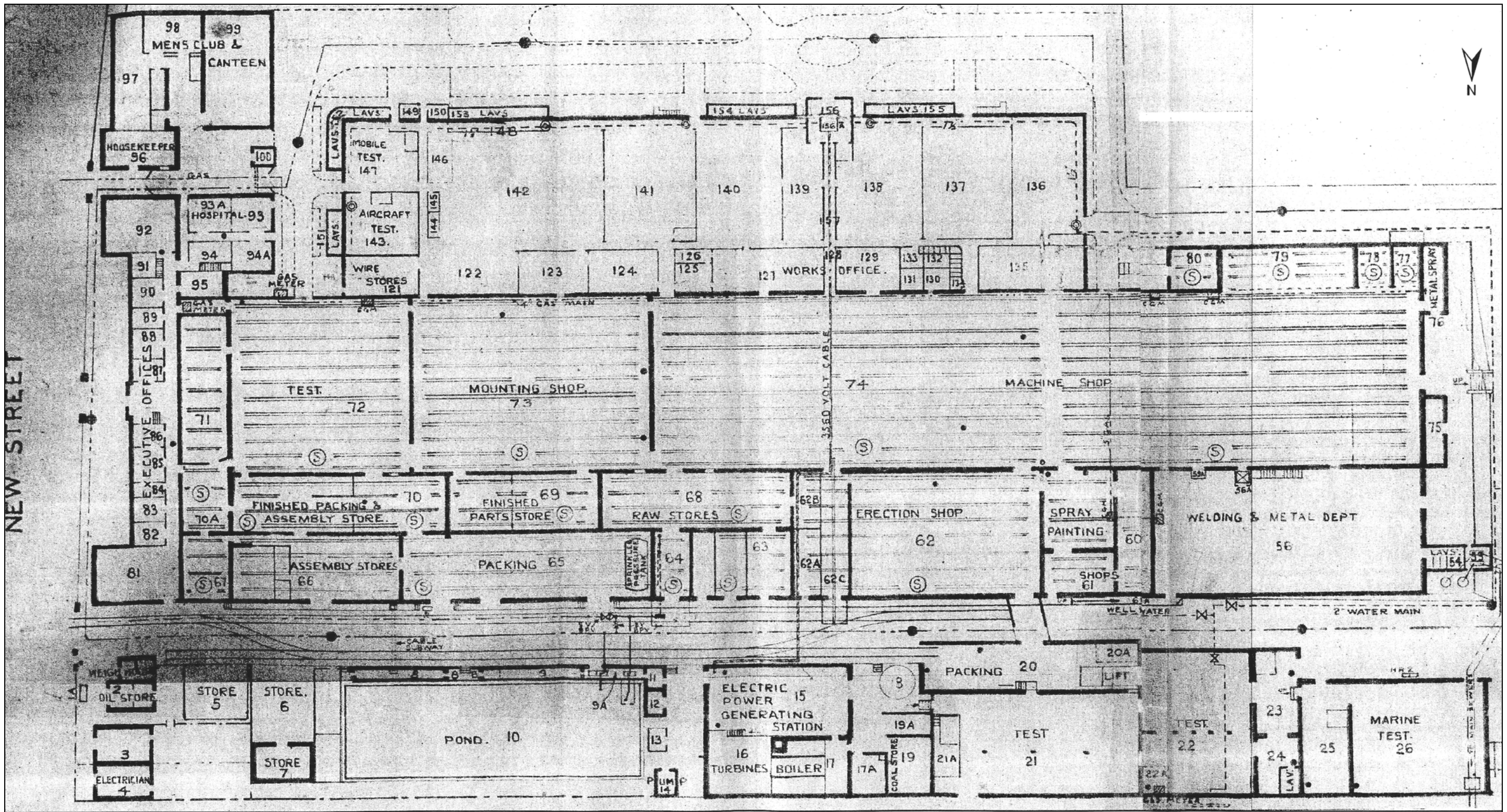


Fig. 4 1937 site plan – ground floor

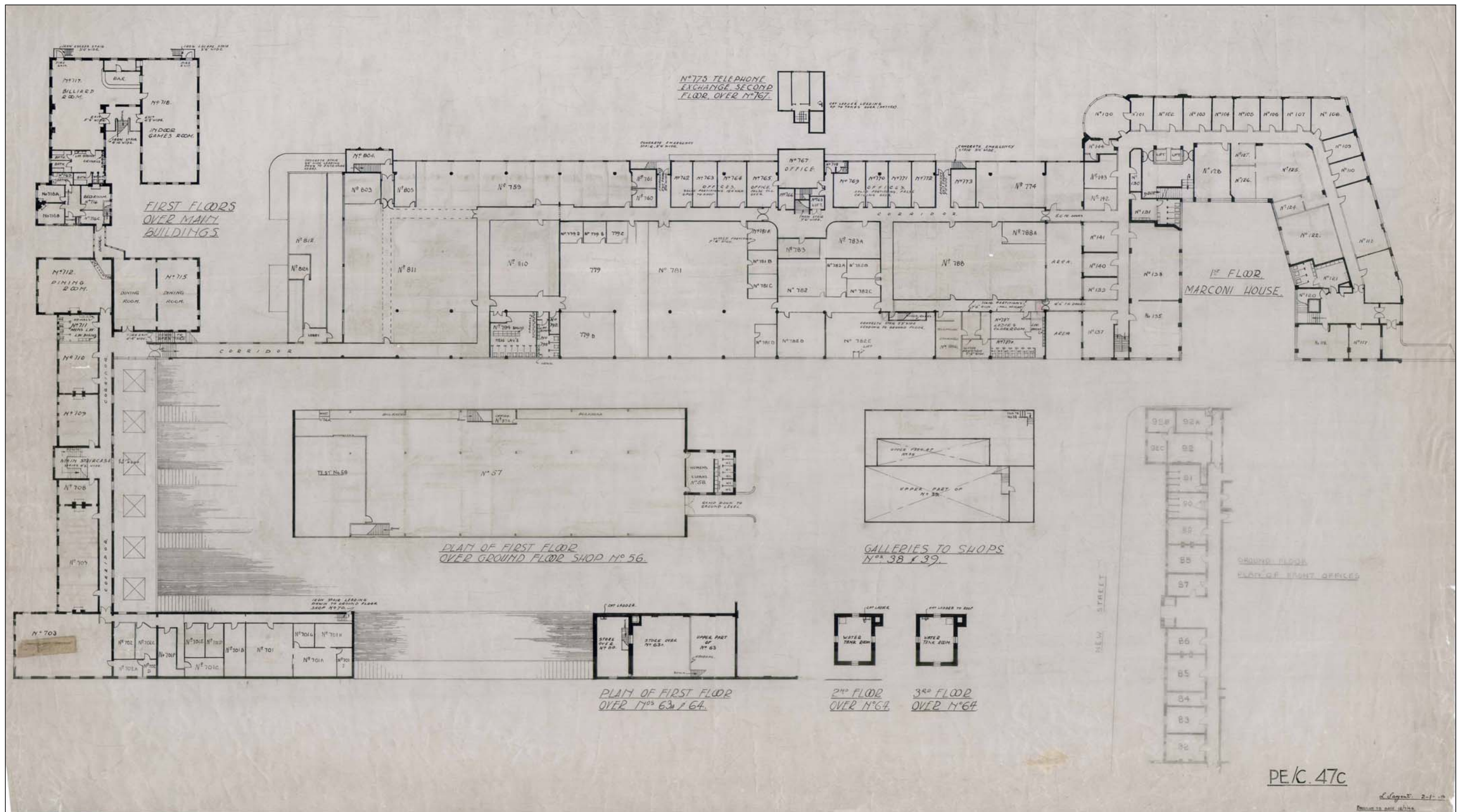


Fig.5. 1948 site plan – first floor

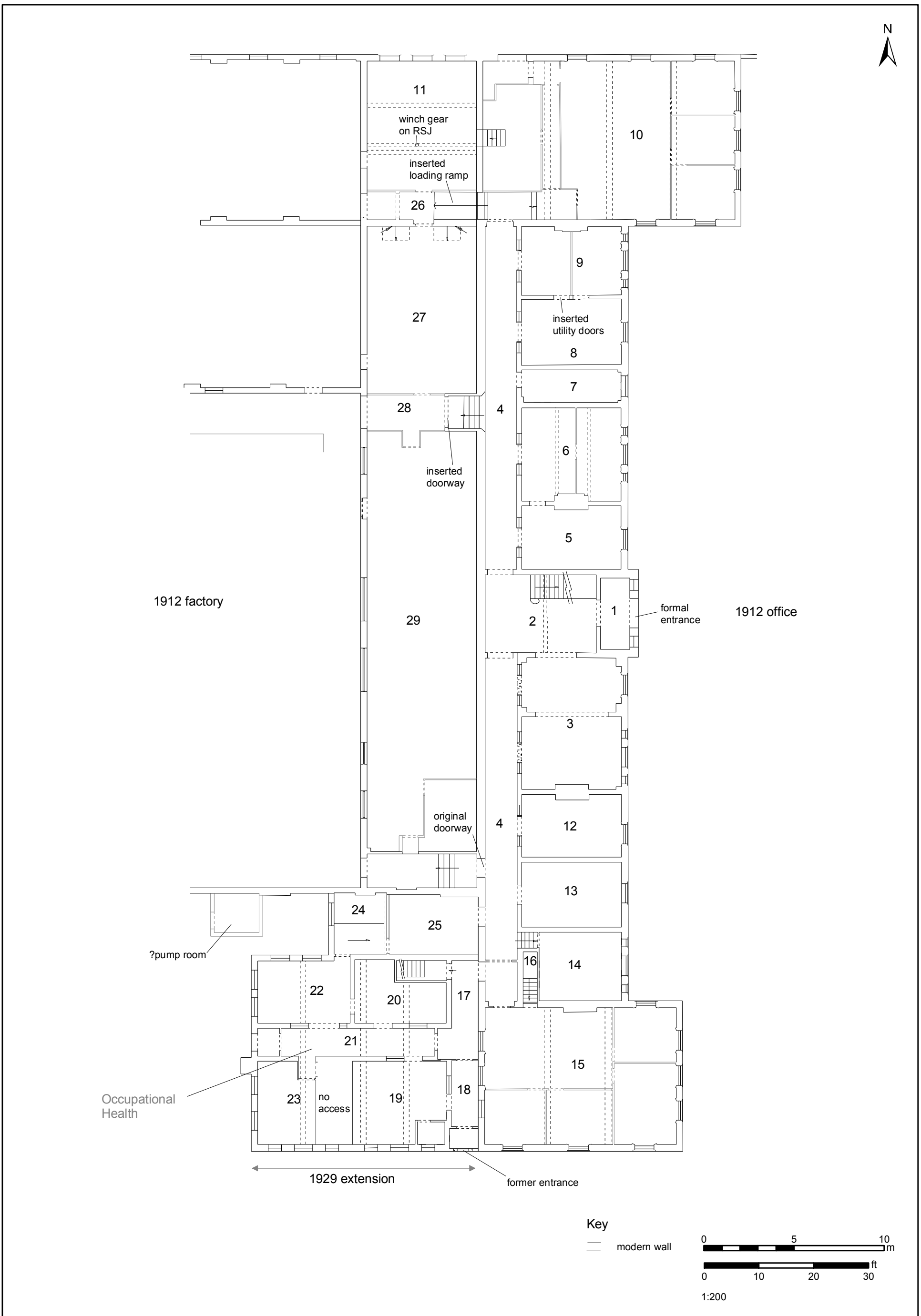


Fig.6a. 1912 offices and 1920s extension - ground floor plan

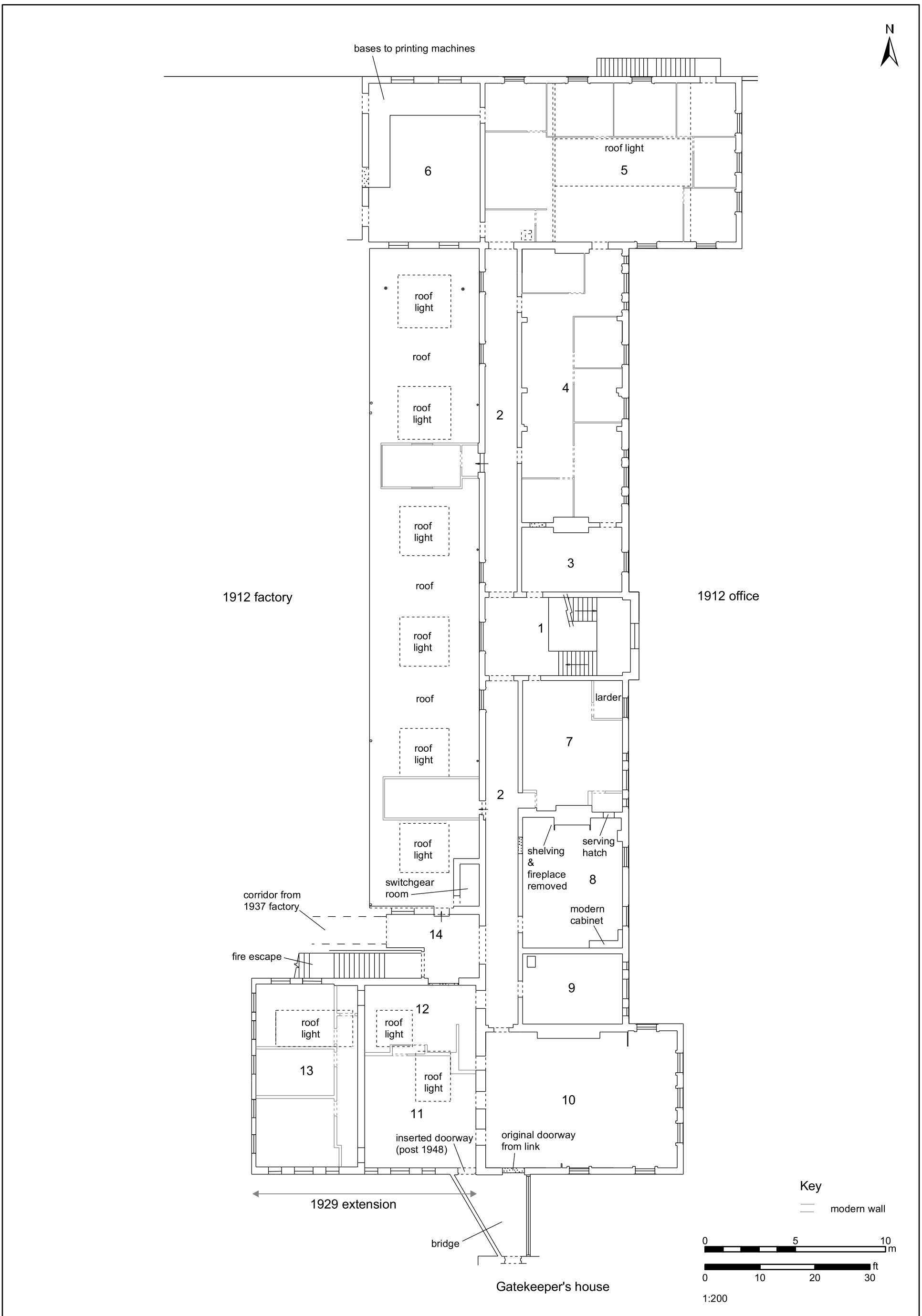


Fig.6b. 1912 offices and 1920s extension - first floor plan

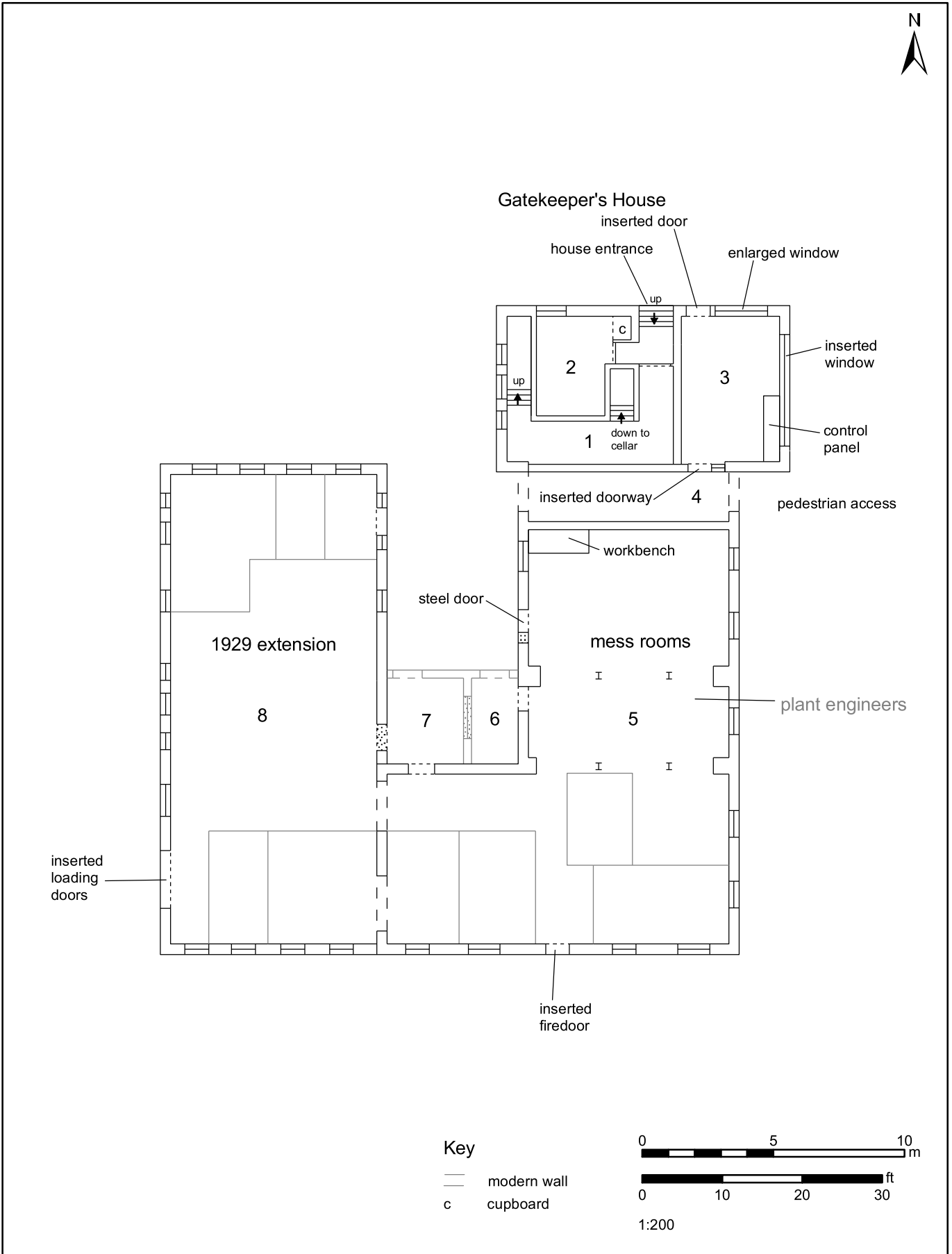


Fig.7a. Gatekeeper's house, mess rooms and 1920's extension - ground floor plan

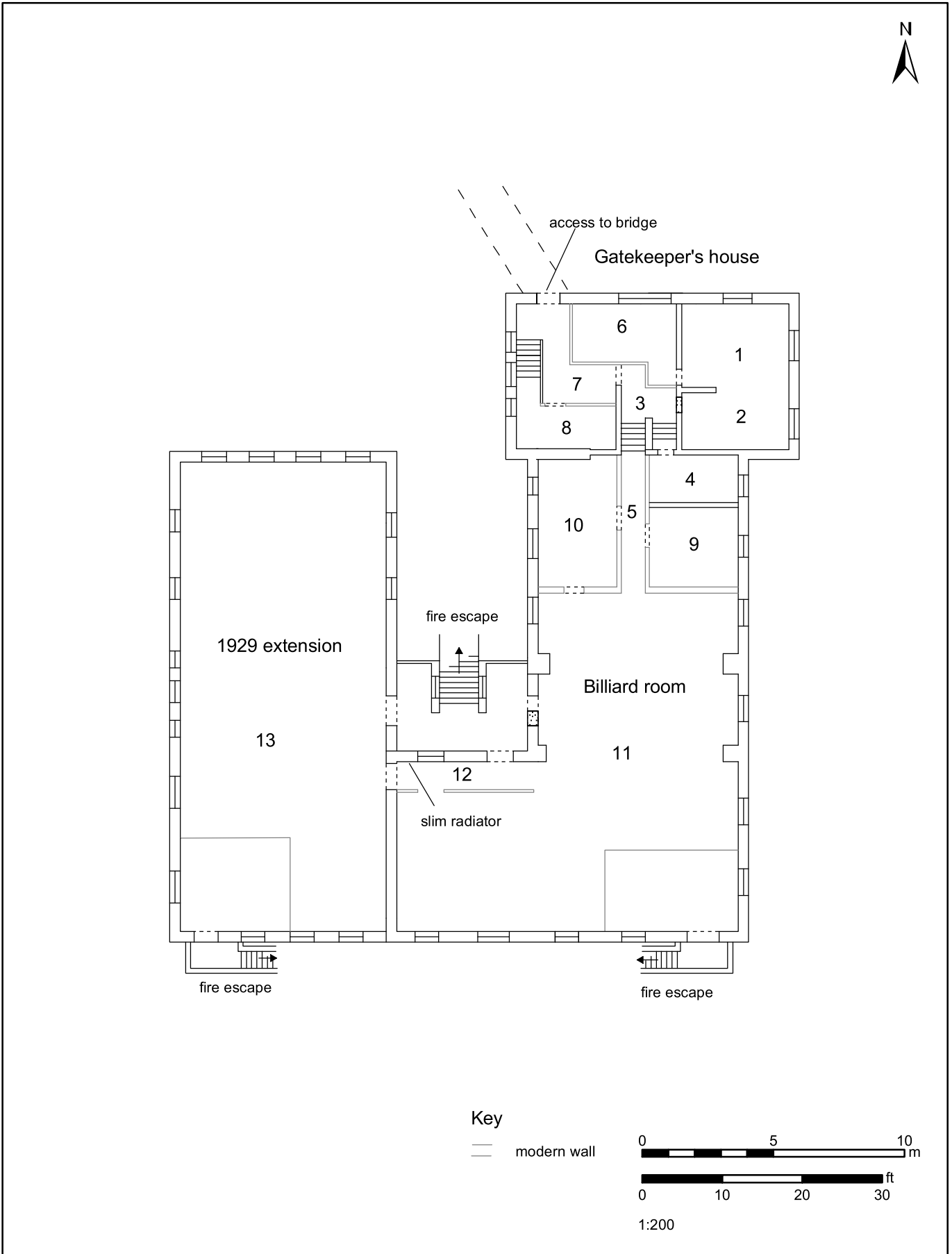


Fig.7b. Gatekeeper's house, mess rooms and 1920's extension - first floor plan

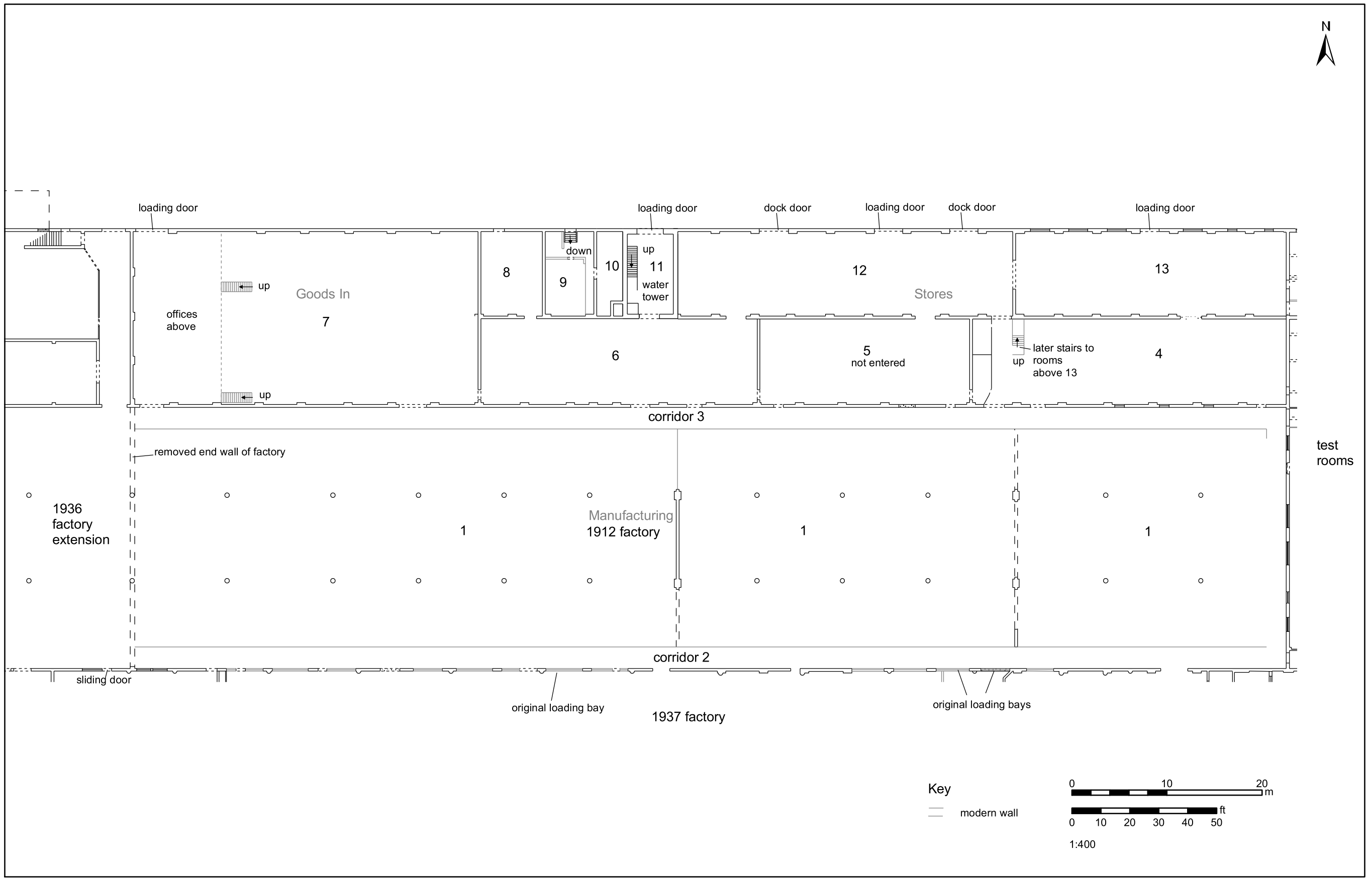


Fig.8. Plan of 1912 factory

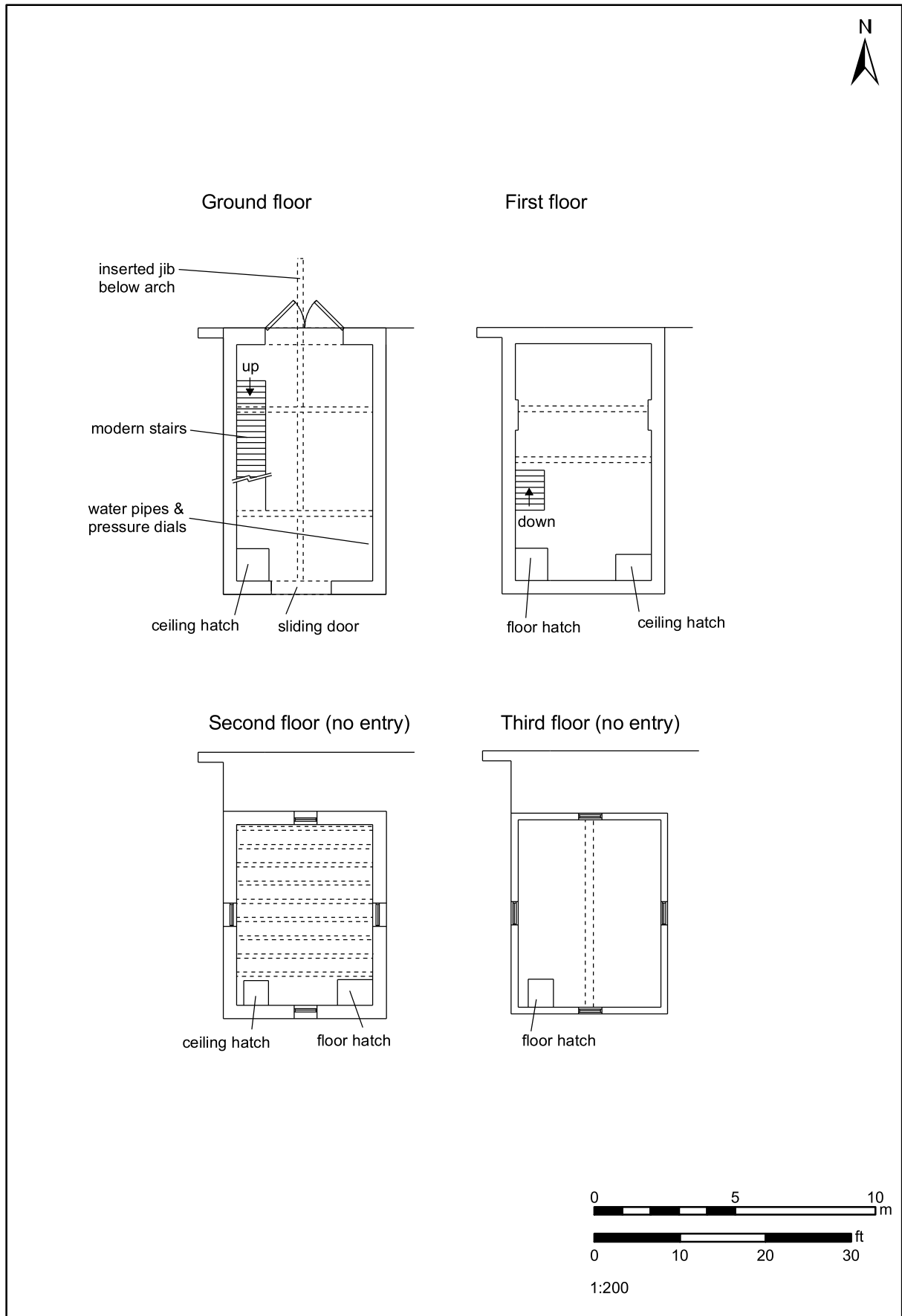


Fig.9. Water tower plans

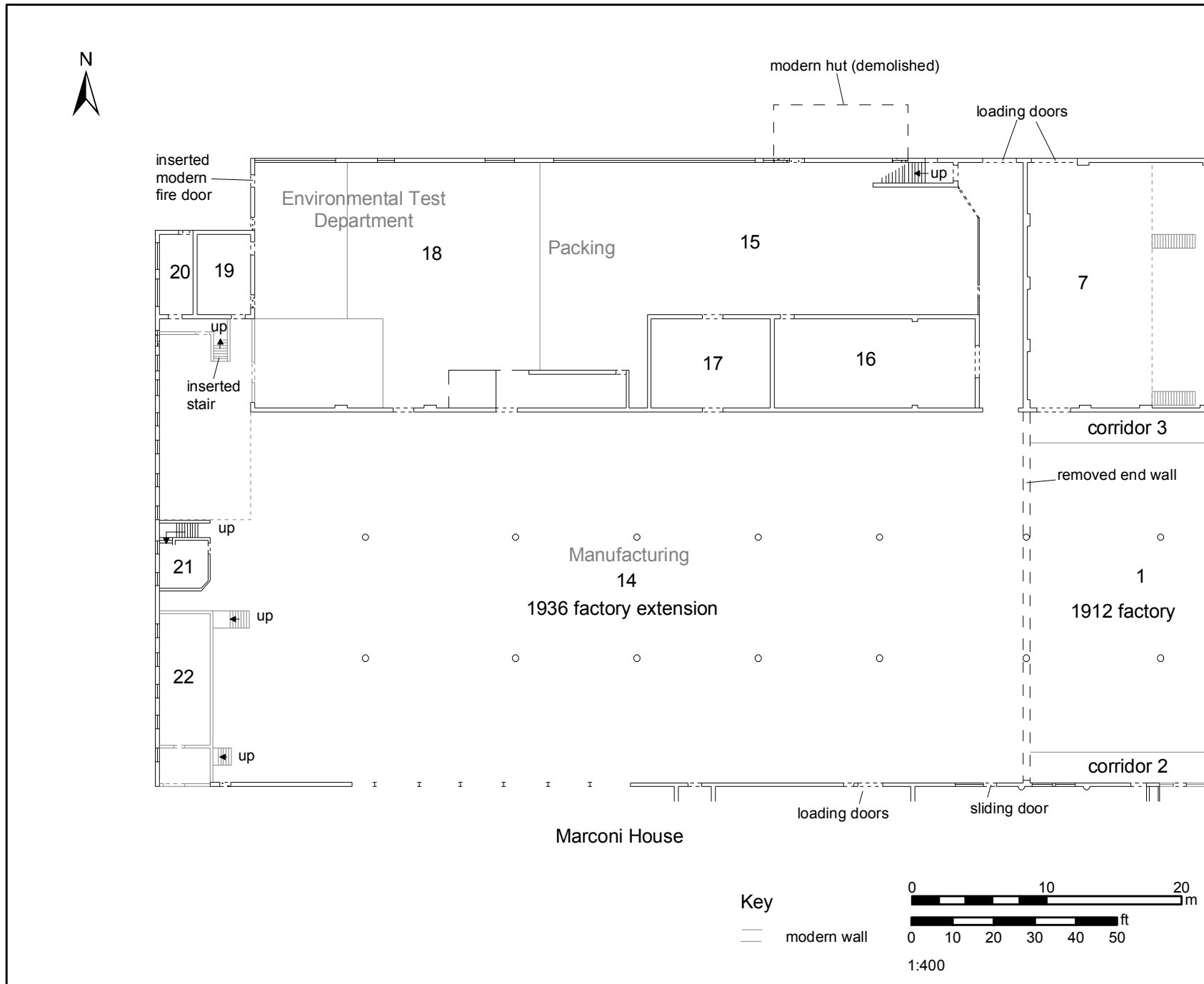


Fig.10. Plan of 1936 factory extension

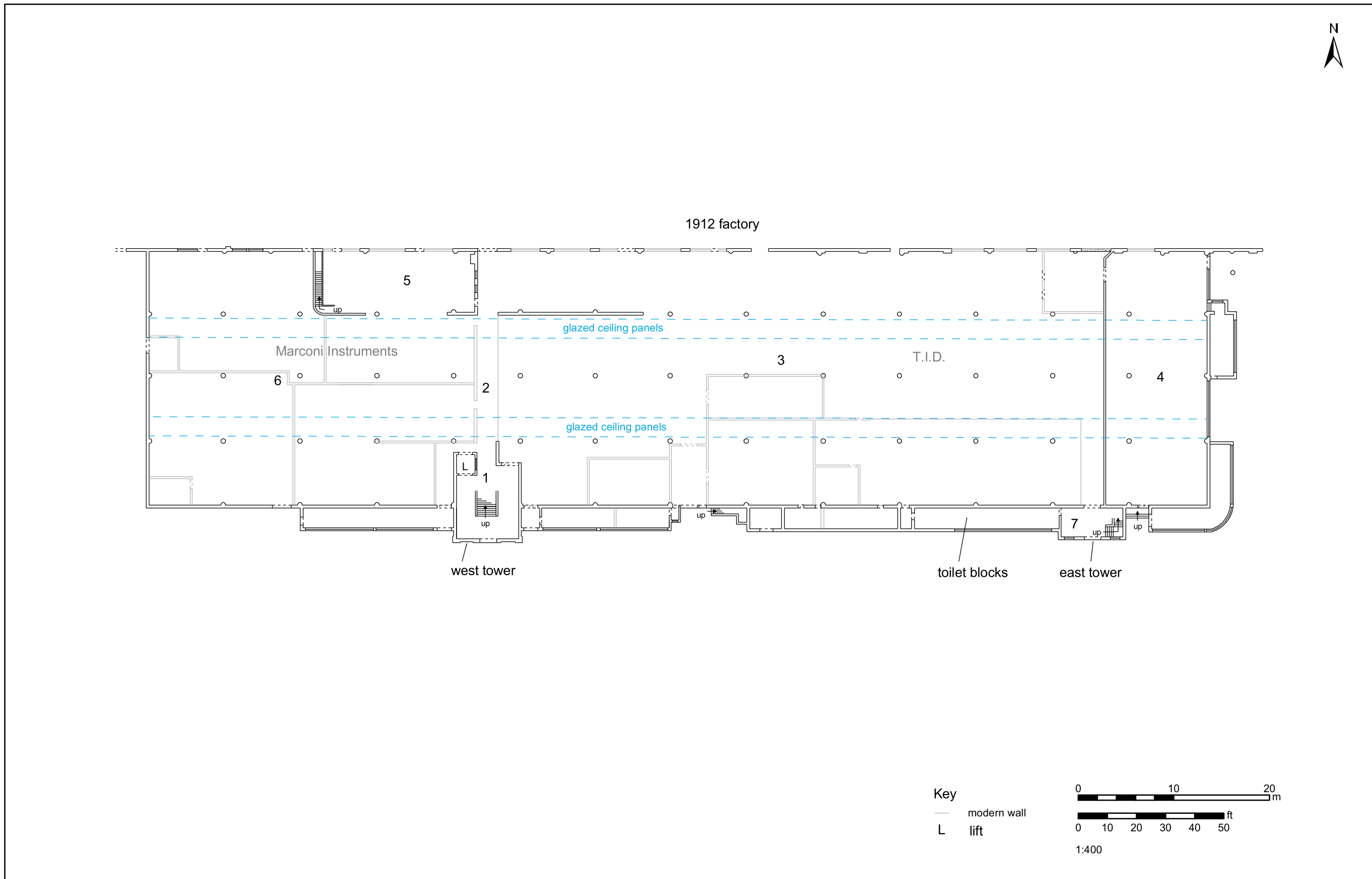


Fig.11a. Plan of 1937 factory - ground floor

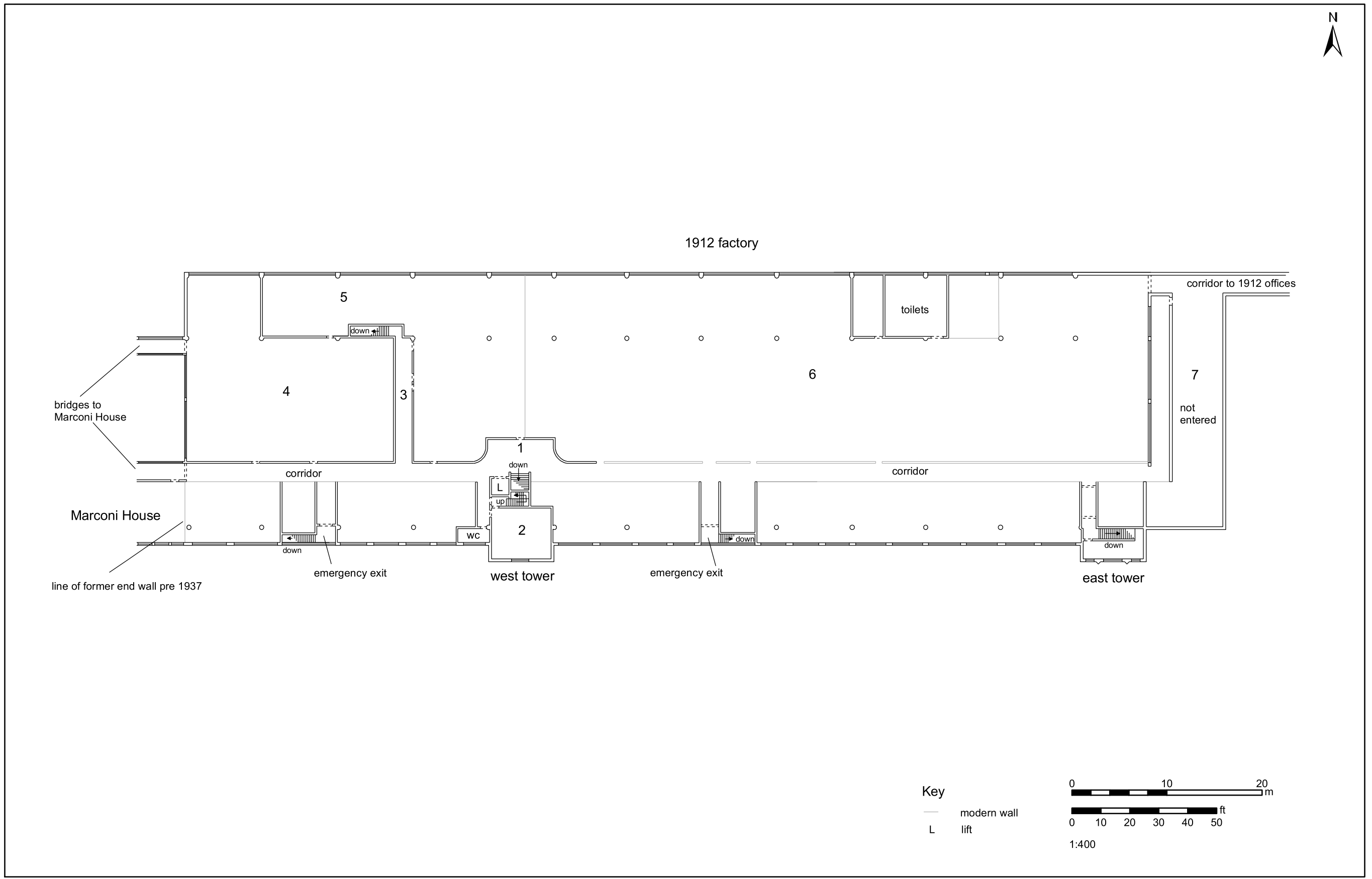


Fig.11b. Plan of 1937 factory - first floor

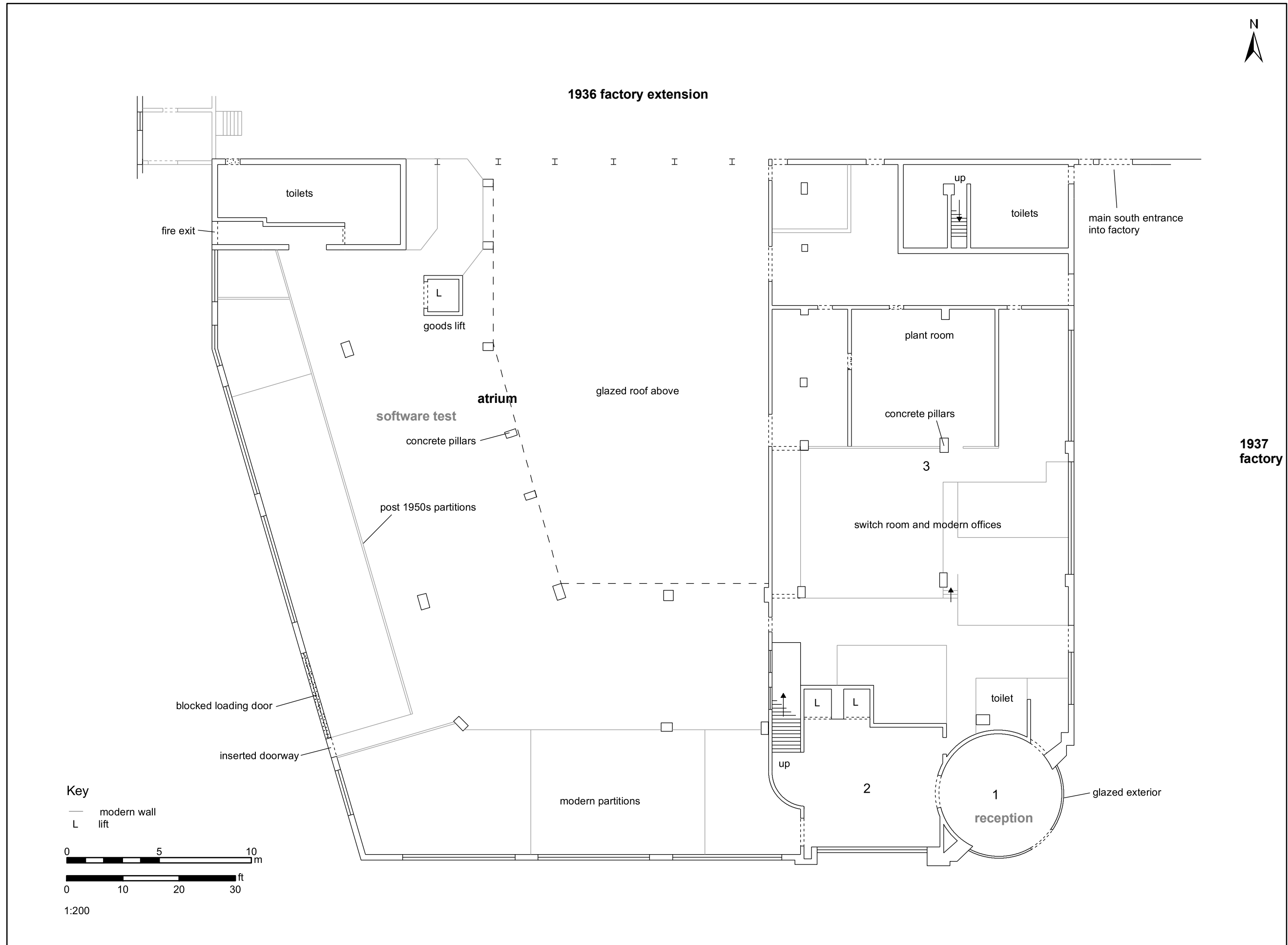


Fig.12a. Marconi House - ground floor plan

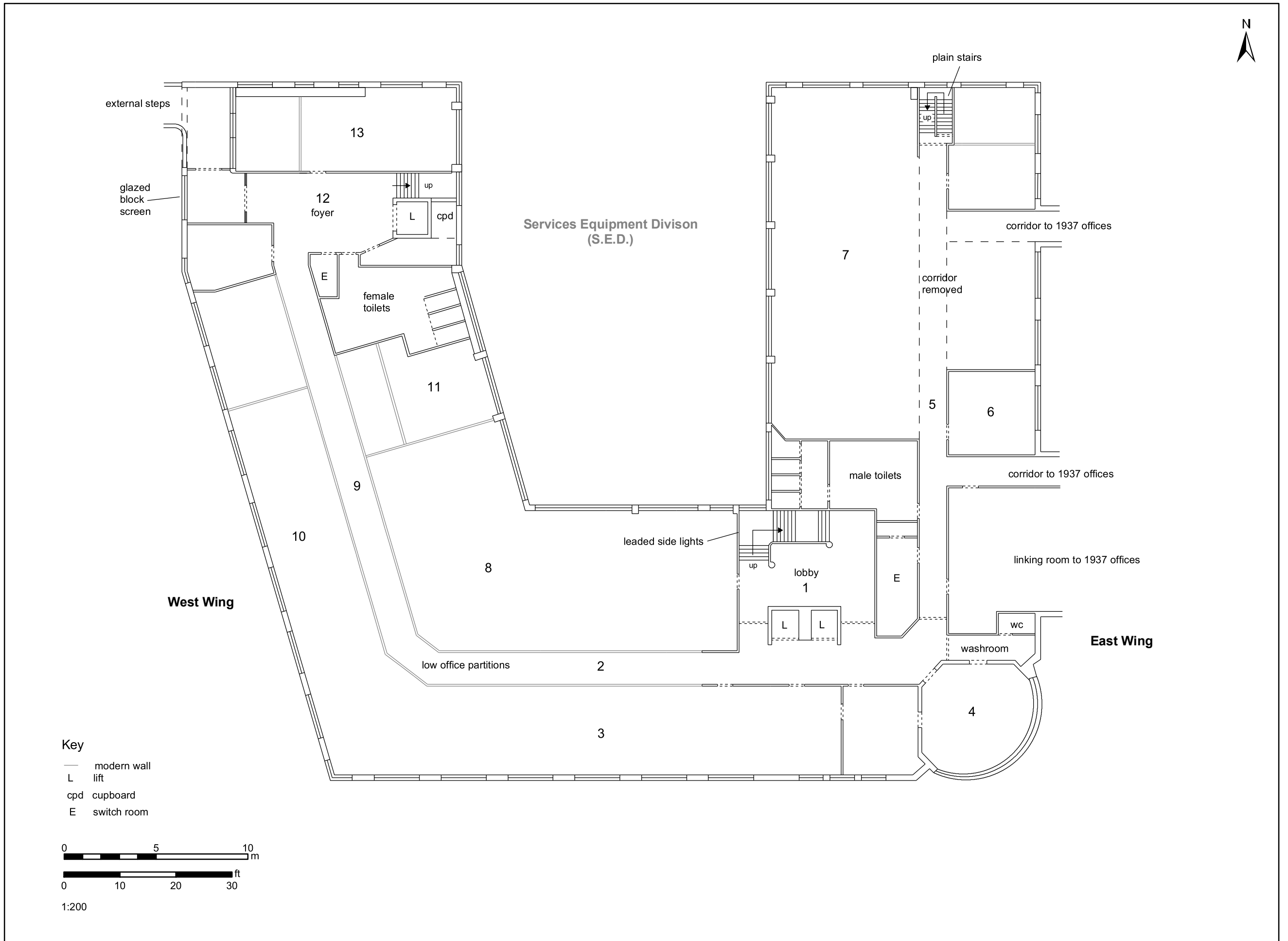


Fig.12b. Marconi House - first floor plan

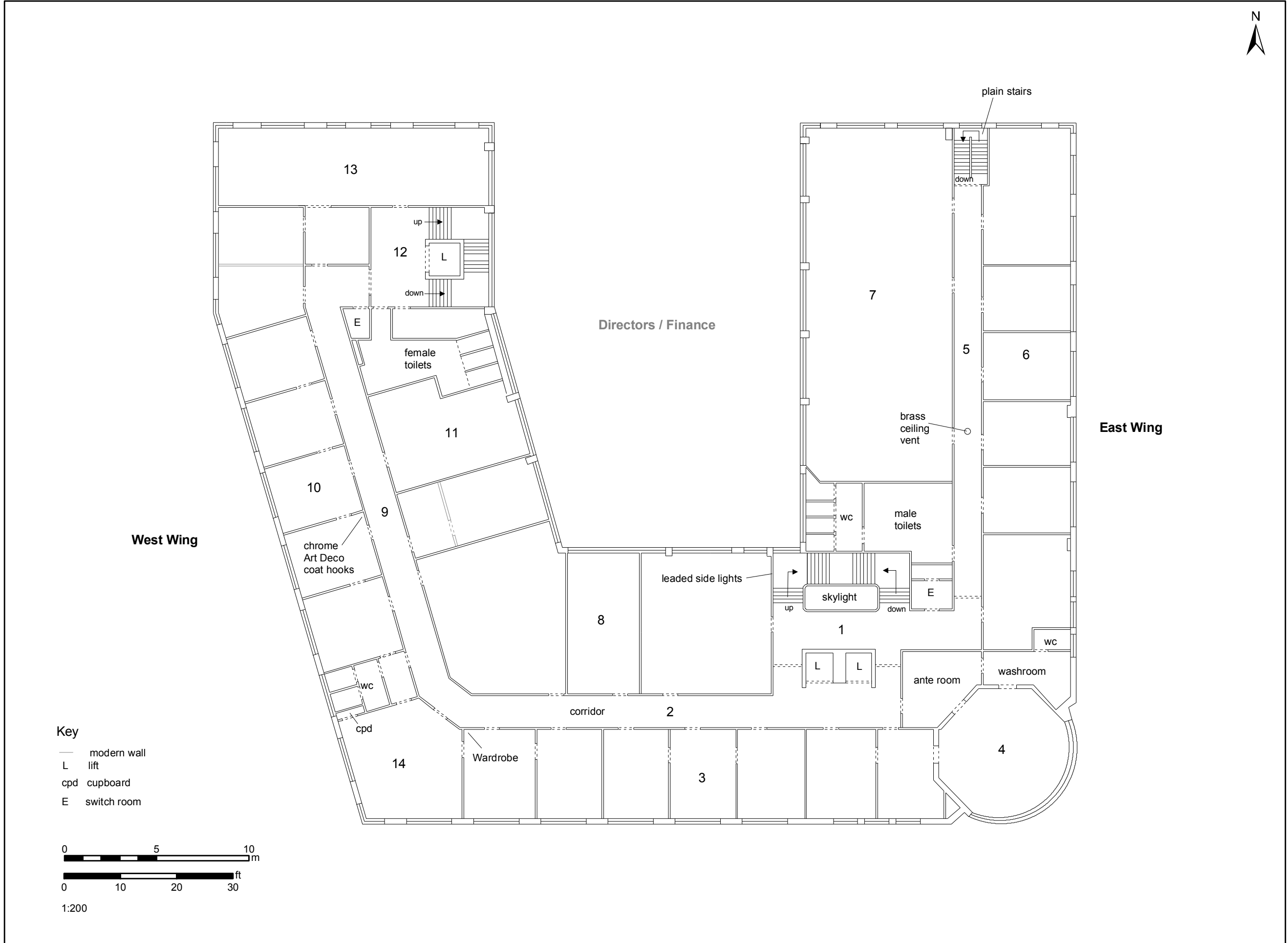


Fig.12c. Marconi House - fourth floor plan

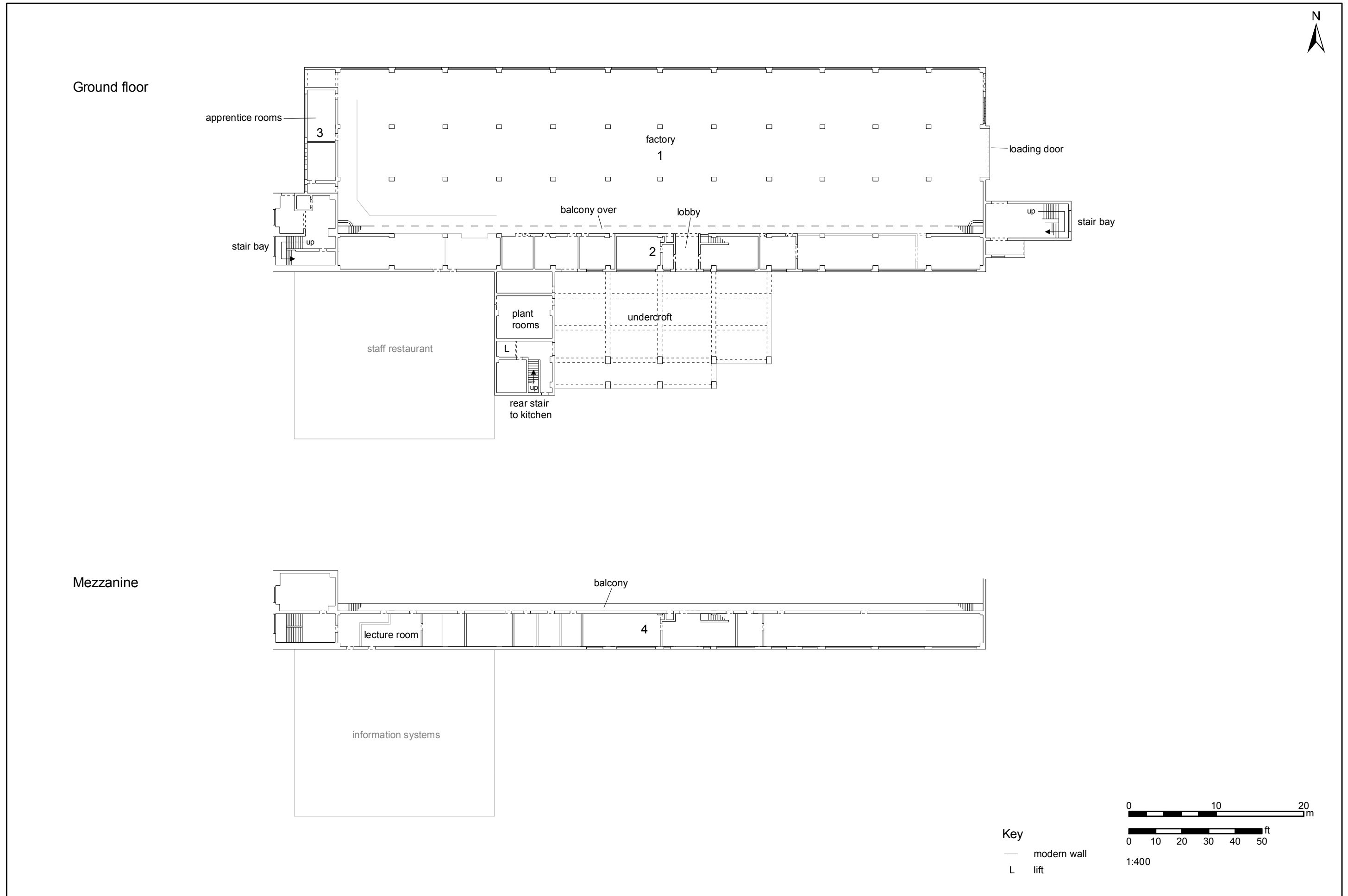


Fig.13a. Building 720 - ground & mezzanine floor plan

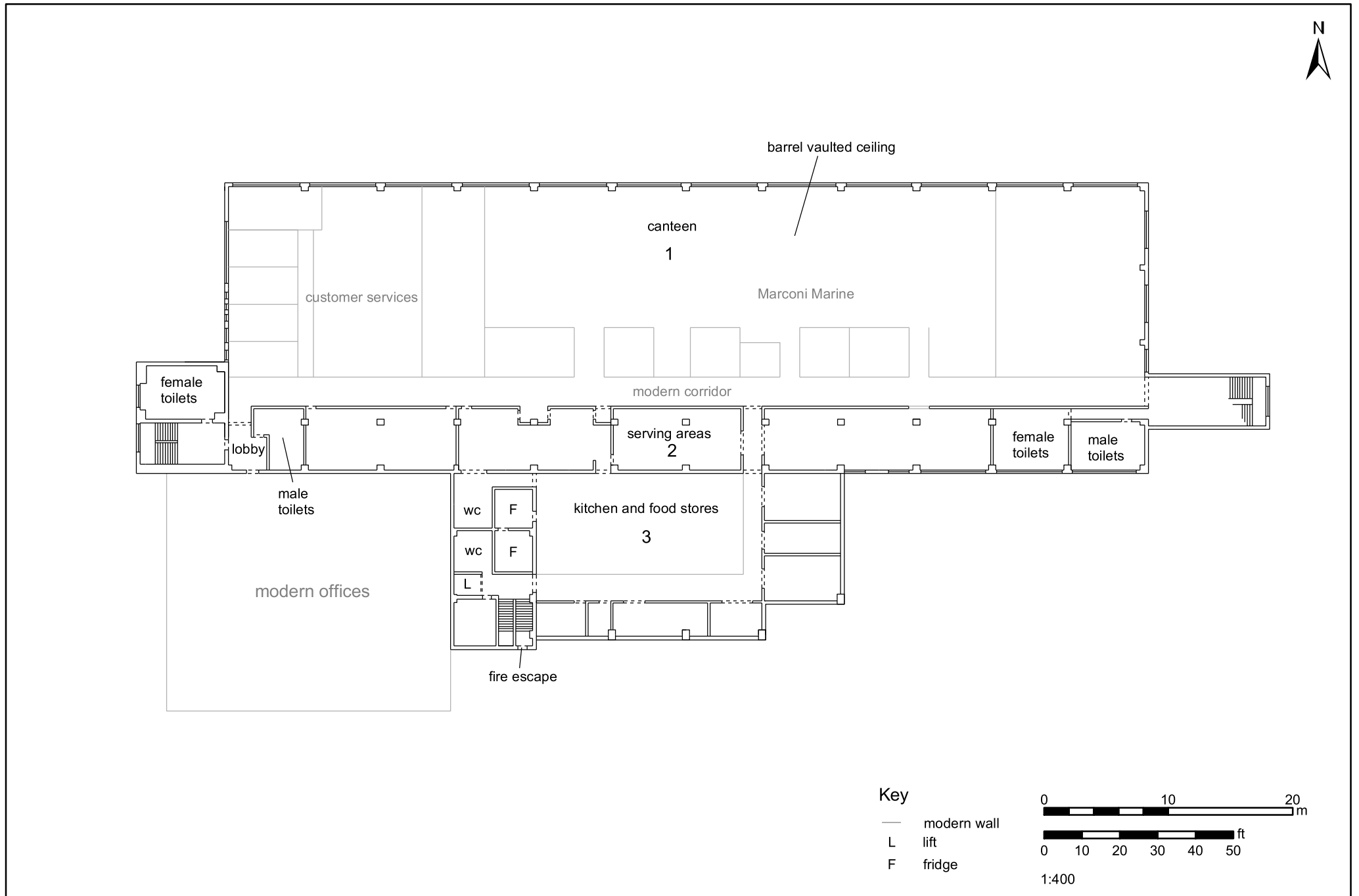


Fig.13b. Building 720 - first floor plan

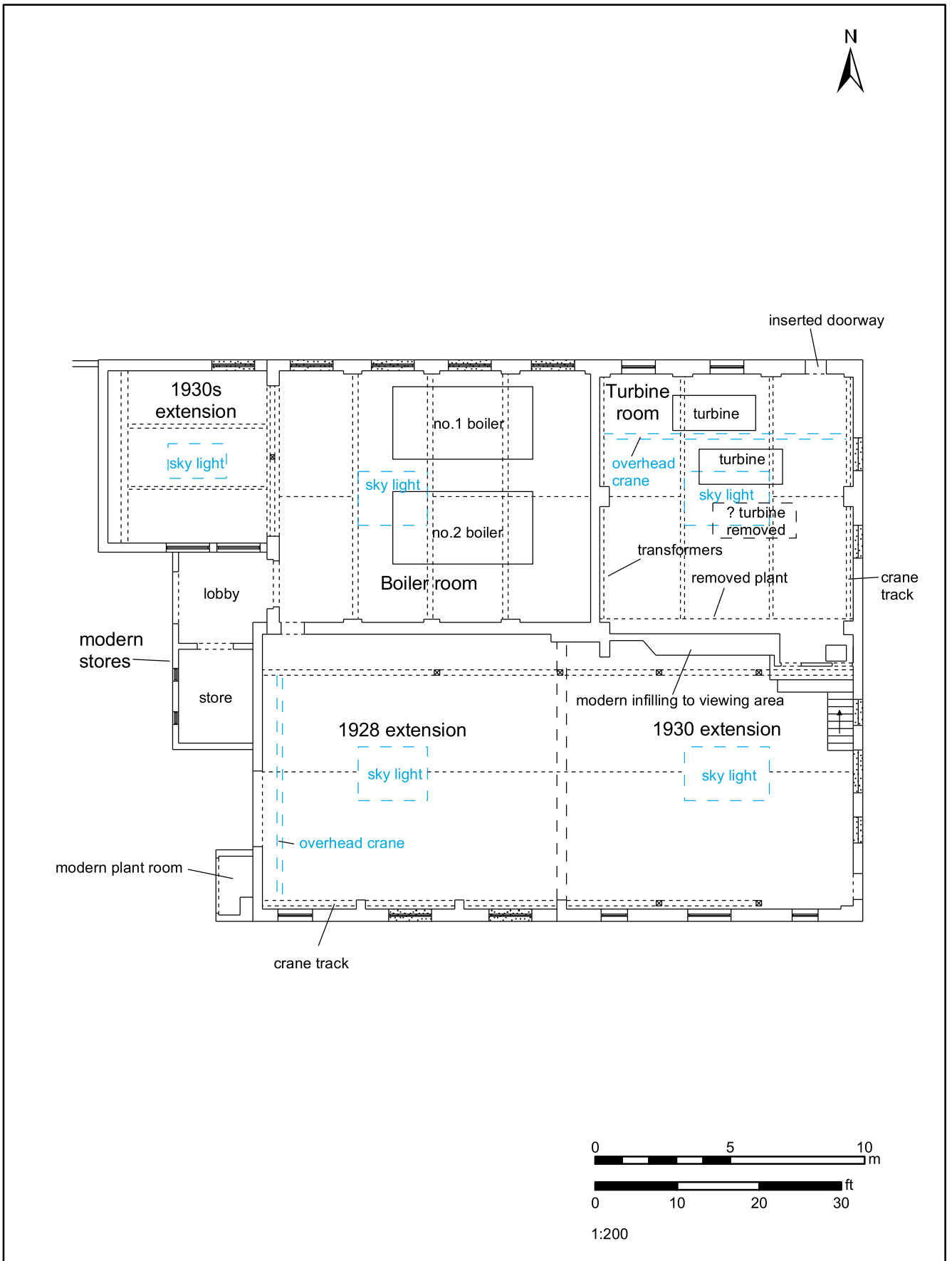


Fig.14. Power house plan

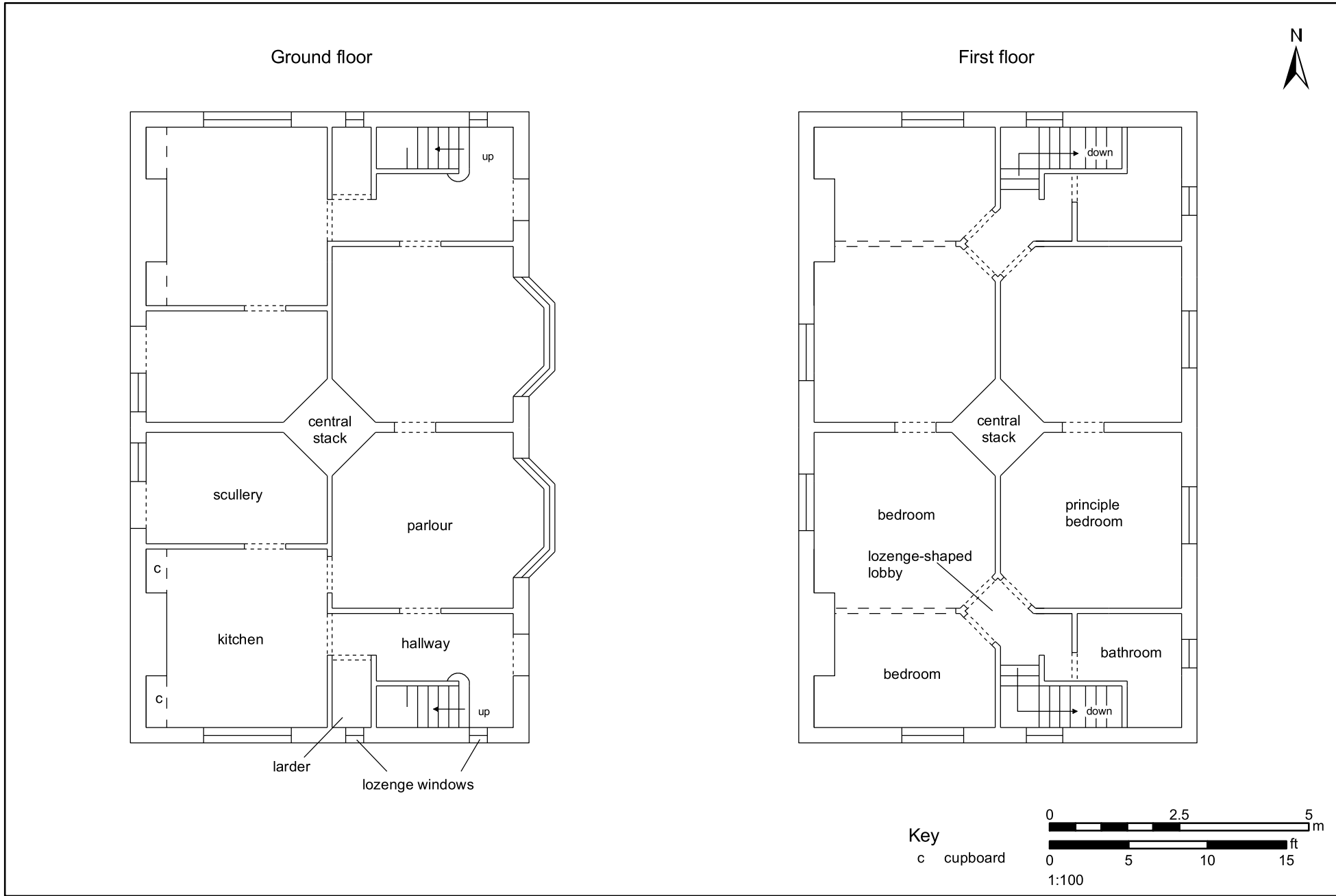


Fig.15. Plan of cottages



Plate 1 1912 Offices viewed to north-west



Plate 2 1912 Offices viewed to south-west



Plate 3 Main entrance to 1912 offices



Plate 4 North elevation of 1912 offices



Plate 5 1929 extension to 1912 offices viewed to north-east, with bridge over gateway



Plate 6 Entrance lobby 1



Plate 7 Stair hall 2, viewed to north-east



Plate 8 Stair hall 2 and entrance to room 3



Plate 9 Typical office doorway



Plate 10 Corridor 4 in office range



Plate 11 Room 5



Plate 12 Former showroom (10)



Plate 13 Room 12



Plate 14 Accounts office (15)



Plate 15 Test room 27



Plate 16 Inserted corridor between offices and 1912 factory



Plate 17 Room 18, Occupational Health reception



Plate 18 Treatment room 19



Plate 19 Stairs viewed to first floor landing



Plate 20 First floor landing viewed to east



Plate 21 Ventilation grill observed in room 3 on first floor of 1912 offices



Plate 22 Room 4 after stripping-out, viewed to south



Plate 23 Drawing office 5 after stripping-out



Plate 24 Dining room 8



Plate 25 Dining room 10 viewed to north-west



Plate 26 Dining room 10 after stripping-out



Plate 27 Interior of covered bridge between offices and gatekeeper's house



Plate 28 Room 11 (former 1929 drawing office)



Plate 29 Gatekeeper's house and mess rooms viewed to west



Plate 30 New Street gates looking towards the 1937 factory



Plate 31 External stair to mess rooms



Plate 32 Gatekeeper's house and mess rooms viewed to south-east



Plate 33 Mess rooms viewed to north-east



Plate 34 Entrance into 1929 extension beside modern turnstile



Plate 35 Monitors in control room 3



Plate 36 Interior of room 5, former mess room



Plate 37 Billiard room interior viewed to south



Plate 38 First floor corridor into 1929 extension



Plate 39 Room 13 in 1929 extension



Plate 40 North elevation of 1912 factory (east end)



Plate 41 North elevation of 1912 factory (middle part)



Plate 42 North elevation of 1912 factory (west end)



Plate 43 Exposed arch on south elevation of 1912 factory

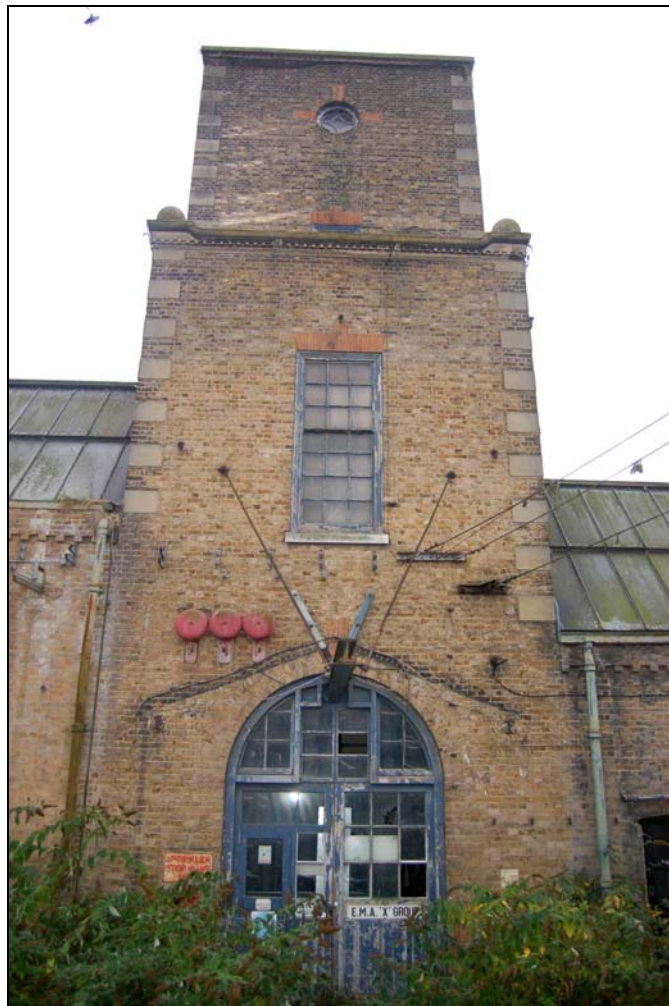


Plate 44 North elevation of water tower



Plate 45 Water tower viewed to north-east over factory rooftops



Plate 46 Interior of 1912 factory viewed to east



Plate 47 1930s partitioning on south wall of 1912 factory



Plate 48 Electric light switch board



Plate 49 Typical factory sliding door



Plate 50 Room 4 (former 1912 finished stores) viewed to west



Plate 51 Former packing room 12



Plate 52 Typical factory loading door from railway siding



Plate 53 Interior of water tower (ground floor) looking into factory



Plate 54 North elevation of 1936 factory extension



Plate 55 West elevation of 1936 factory extension



Plate 56 Interior of 1936 factory extension, viewed to west



Plate 57 Selex Environmental Test department (room 18)



Plate 58 1930s doorway in room 18



Plate 59 Office area 21 at west end of 1936 factory



Plate 60 First floor office 21, with view over factory floor



Plate 61 West end of 1937 factory, with Marconi House to left



Plate 62 West tower



Plate 63 East end of 1937 factory



Plate 64 Fire escape stair



Plate 65 1937 factory viewed to north-west



Plate 66 West elevation of 1937 factory, with bridge to Marconi House on right



Plate 67 Art Deco stair in west tower



Plate 68 Factory interior viewed to north-east (outer wall of 1912 factory)



Plate 69 hard-boarded partition to room 4



Plate 70 West tower stair



Plate 71 Corridor between 1912 offices and 1937 factory



Plate 72 View along corridor 1 on first floor (from west)



Plate 73 Typical corridor doorway



Plate 74 Typical fire escape doorway



Plate 75 Lavatory beside first floor stair landing



Plate 76 Stairs to second floor above manager's office 2



Plate 77 First floor area 6 viewed to west



Plate 78 First floor area 4 viewed to north-west



Plate 79 Marconi House viewed to west, with the 1937 factory



Plate 80 Marconi House rotunda



Plate 81 Rotunda base, with boarded entrance lobby



Plate 82 Marconi House viewed to north-east



Plate 83 West entrance into Marconi House



Plate 84 West elevation above atrium



Plate 85 Entrance lobby 1 viewed to north-east



Plate 86 Doors between lobby 1 and foyer 2



Plate 87 Foyer 2 viewed to east



Plate 88 Foyer and Art Deco stairs, viewed to west



Plate 89 Steel up-light above lift



Plate 90 Post 1950s partitions in atrium, viewed to south-west



Plate 91 Art Deco stair and metal vents on half-landing



Plate 92 Art Deco stair detail



Plate 93 Remains of Geometric style window railing



Plate 94 typical corridor swing doors



Plate 95 Corridor 5 (second floor)



Plate 96 Corridor 2 (fourth floor)



Plate 97 Former library on second floor (room 4)



Plate 98 Room 4 on the third floor



Plate 99 Room 4 on the fourth floor



Plate 100 Washroom adjacent to room 4 on second floor



Plate 101 Art-Deco style radiator in washroom on fourth floor



Plate 102 Room 4 on third floor



Plate 103 First floor modern office space (rooms 3 & 8)



Plate 104 Room 14 on first floor, viewed to north-west



Plate 105 Sink adjacent to room 14



Plate 106 Wardrobe in connecting room on east side of room 14



Plate 107 Art Deco-style coat hooks in room 10



Plate 108 First floor foyer (12) viewed to west



Plate 109 West wing stair



Plate 110 Building 720 viewed to south-west



Plate 111 West elevation of Building 720, with 1965 canteen to right



Plate 112 Rear of Building 720 viewed to north-west



Plate 113 Interior of Building 720 factory, viewed to west



Plate 114 Balcony and mezzanine floor over factory



Plate 115 Entrance to western stair bay lobby



Plate 116 Stairs in Building 720



Plate 117 View along mezzanine floor, beside former lecture room



Plate 118 Typical office interior



Plate 119 First floor viewed to west



Plate 120 Exposed barrel-vaulted ceiling

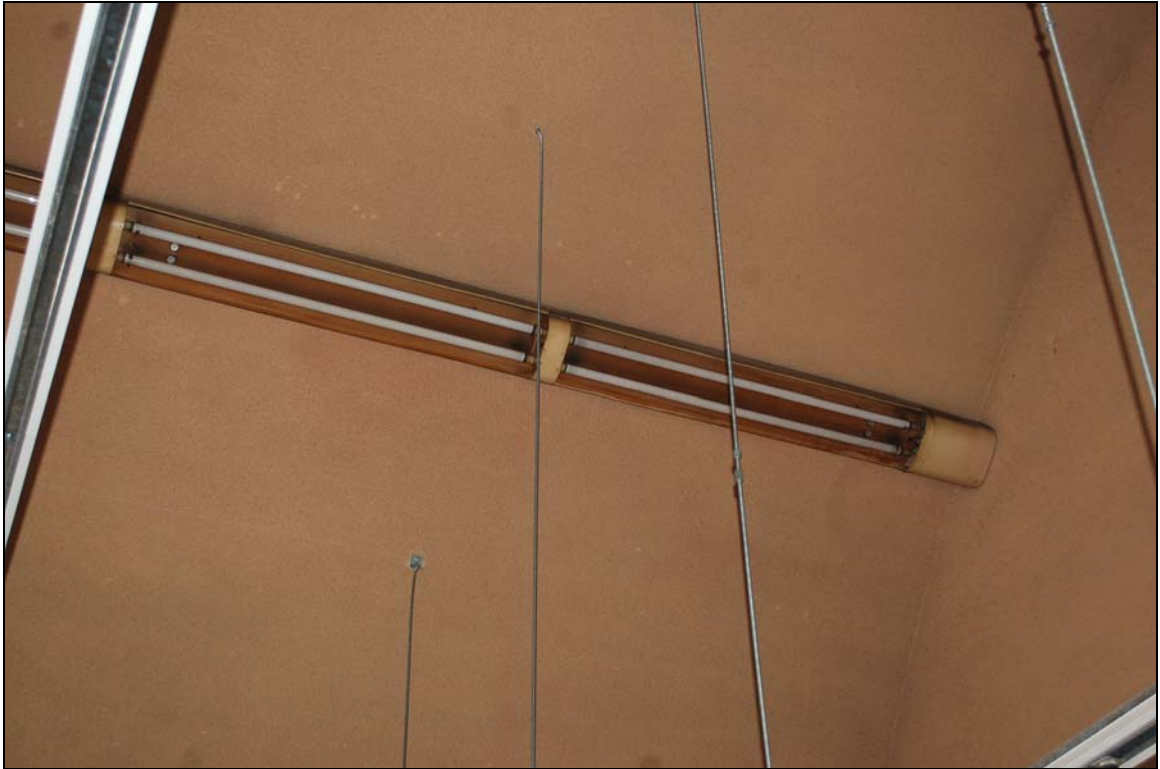


Plate 121 Original fluorescent lighting

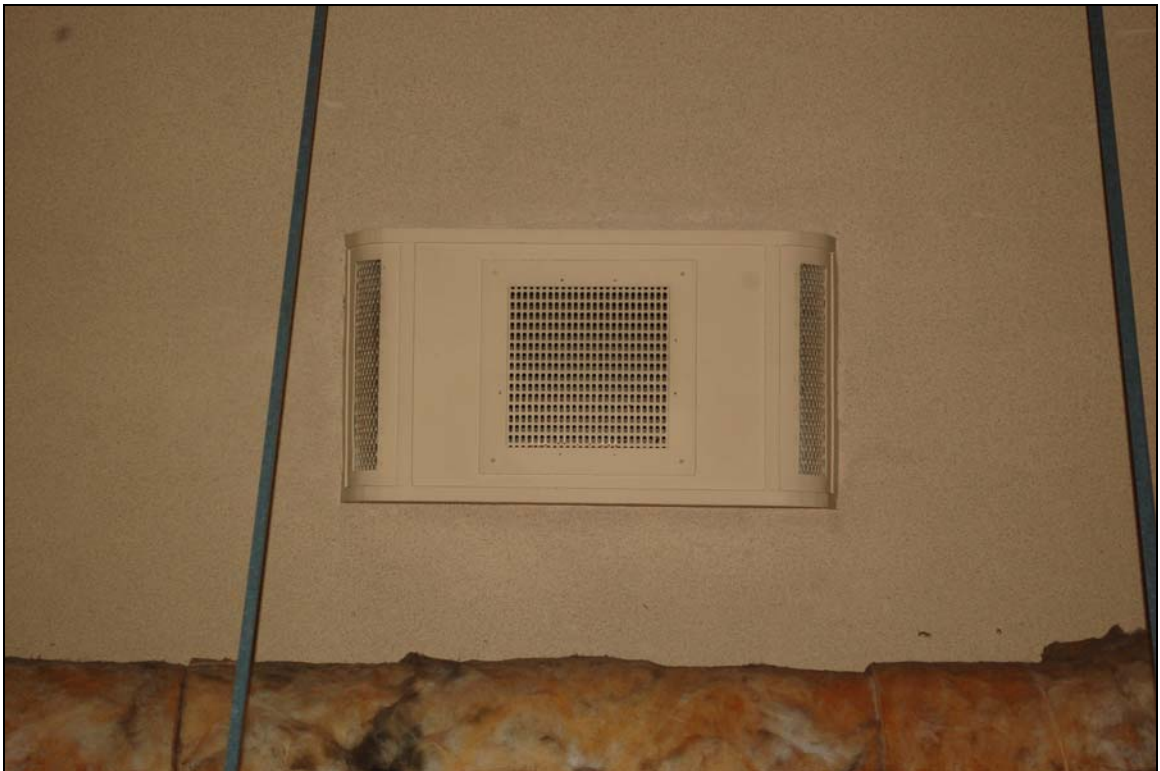


Plate 122 Original metal ventilation unit



Plate 123 Switch board on south wall of canteen 1



Plate 124 Kitchen 3 viewed to north-west



Plate 125 Power house viewed to south-west



Plate 126 Power house viewed to north-west



Plate 127 Power house viewed to north-east



Plate 128 Robey boilers inside boiler room



Plate 129 Turbine room viewed to north-west



Plate 130 Crompton turbines



Plate 131 Generator room viewed to west



Plate 132 Generator room viewed to east



Plate 133 Former turbine room viewing bay



Plate 134 Cottages viewed to south-west



Plate 135 East elevation



Plate 136 South elevation



Plate 137 Rear elevation (west)



Plate 138 Cottage stairs in no. 3



Plate 139 Lozenge-shaped larder window



Plate 140 Kitchen in no. 3



Plate 141 Parlour in no. 4



Plate 142 Combined rear bedrooms in no. 3



Plate 143 Weigh house and oil store viewed to north-west



Plate 144 Interior of weigh house



Plate 145 Sheds 10c-e, viewed to north-east



Plate 146 Outbuilding 10f viewed to north-west