THE QUEEN VICTORIA MARKETS.

DESCRIPTION OF THE BUILDINGS.

The Queen Victoria Market buildings are to be opened to-day. Subjoined is a description of them :—

IMPRESSIONS FROM THE OUTSIDE.

The site occupied by this magnificent pile of buildings is an oblong quadrilateral, bounded by four thoroughfares, having frontages of 610ft. 10¢in. to George and York streets, 89ft. to Druitt-street, and 98ft. 2in. to Market-street. As a consequence of the great length of the main fronts it was found necessary to more particularly emphasise the height, and this fact accounts for the preponderance of vertical rather than horizontal lines in the facades. The design is a modified form of the modern Romanesque in which the massiveness which gives the American Romanesque style so much of its effective force has been subdued. In consequence of the whole of the ground-floor frontages being devoted to shops, together with the necessity for providing the largest possible show-window space, but little opportunity was afforded for architectural treatment at the street level; yet the massive trachyte piers, with their heavy cushion capitals which immediately support the superstructure, strike a dominant note in the general architectural character of the building. The main facades consist of a large central block which dominates the whole pile; the ends of the block being emphasised by pavilions or towers, surmounted by small domes, the intervening lengths of the fronts being relieved by small sub-towers capped by metal domes. The predominating feature of the whole block is the main central dome, which has added a conspicuous feature to the architecture of Sydney, and a prominent one to the skyline. This, the largest dome in the Southern Hemisphere, is nearly 62ft. external diameter, and with its cupola rises to a height of 190ft. from the pavement, the imposing group being flanked and sustained by typical towers crowned with smaller domes and angle turrets. At the level of the springing of the dome proper is a gallery promenade supported by a bold arched corbelled course, and which extends round the whole perimeter, access being obtained from an interior staircase starting from the second floor. From this gallery a magnificent panoramic view of Sydney and its environs is to be obtained. The drum of the dome is pierced by a number of windows separated by characteristic fasciculated piers connected by semi-circular headed arches, and these windows serve to illuminate the brilliant inner glass dome which is seen from the various floors in the interior of the building at the centre. Nearer the street level the most prominent feature of the central block is the great semi-circular arch over the main entrances, 32ft. span, and 43ft. from the ground to the intrados at the crown, and springing from heavy freestone abutments. The massive polished trachyte columns with ornamental bronze caps which trisect the entrance in their turn support triple sub-arches, between the crowns of which and the soffit of the main arch is a handsome wheel window formed with a double row of radiating polished trachyte columns with carved caps and connected by arch-heads, the whole being filled in with elaborately stained glass of a character in harmony with the rest of the design. The spandrils adjoining these arches are richly carved, and above an intervening string or corbelled cornice is a carved and corbelled pedestal, which is to support a sculptured marble group that is now nearing completion. The end blocks terminate in domes and angle turrets, which are supported by corbelled bastions. The upper portions of these towers are among the most interesting features of the whole design with their long, narrow windows, separated by fascicles of slender shafts, and the angle corbels above; the treatment of the interjacent bay between these towers is somewhat different, having a large projecting oriel and window openings above, with stunted columns. The facades between the end and central blocks are divided up into triple bays, with fasciculated piers supporting semi-circular arches with rock-faced voussoirs, the sub-towers and domes occurring between these bays being treated in a manner similar to the central and end towers. Relief in the immense lengths of these main facades is obtained by means of recessed bays, which also serve to emphasise the more important features of the general design. One of the most salient features in the facades is the immense arcaded cornice, supported by its rich frieze, under which is an ornamental corbelled course. The effect of the main central entrances is enhanced by the ornamental wrought-iron gates, 12ft. high, which were made to special designs.

VIEW OF THE INTERIOR.

The principal feature of the interior is the spacious avenue, 32ft. wide, which extends from Druitt to Market streets, being intersected by the transept which connects the main central entrances from George and York streets. The shops front which abut on the ground floor of the avenue are separated by columns with ornamental cushion caps, from which spring semicircular arches, under which occur the ornamental show windows, the upper portions being glazed with parti-tints of cathedral glass. On the spandrils between these arches are ornamental metal corbels, casing the ends of the girders supporting the first-floor galleries. The whole of the ground floor of the avenue and entrances, as well as all the landings throughout the building, are paved with encaustic tiles, arranged in specially designed patterns. On the first and second floors the avenue is widened to 42ft., thus affording spacious gallery accommodation to the various warerooms, offices, &c. The light to the avenue and galleries is obtained from the semi-circular iron roof, which is glazed with sanded rough plateglass, ¼in. thick, laid on patent bars. The space between the roof-lights and the large ornamental cornice, which extends round the whole of the interior wall-face of the avenue, is filled with embossed ornamental mild steel panels divided and subdivided by mouldings of the same metal, and all of special patterns. All the warerooms and offices, &c., on the first and second floors have ornamental cedar glazed screens, with turned columns and caps and semi-circular arch heads, the fanlights being glazed with delicate leaded lights, and these screens, with the dividing fasciculated plaster piers, present a light and decorative appearance to the interior, which is heightened by the excellent schemes of colour observed throughout. It is at the centre, under the main dome probably, where the enormous size of the structure makes itself more easily apparent than in the avenue. From the ground floor, looking up through the circular well-holes on the first and second floors, an excellent view is obtained of the apparently superpoised inner dome, 106ft. from the ground floor, with its delicately-tinted glass filling. From either of the floors, through the double and triple arches enclosing the central block, are to be obtained glimpses of the main staircases from George and York streets, ascending to the upper floors and descending to the basement, with double flights 6ft. wide in each case; and these, with the colours of the stained glass in the immense wheel windows over the main entrances, present, perhaps, the most effective groups to be seen in the interior of the building. On the second floor level the great semi-circular arches and panelled barrel vaultings spring from the immense piers supporting the main dome, and the large plastered mural surfaces above are relieved by means of an elaborate cornice and frieze, formed of cylindrical ornamental shafts supporting richly ornamental semi-circular panels.

A HUGE BASEMENT.

Below the ground floor of the building, and extending over the whole area of the site, is a large basement, the height from floor to ceiling ranging from 18ft. to 22ft. For the most part the excavation of this portion of the work, equivalent to about 55,530 cubic yards, was made through rock varying from soft to hard. In order to prevent the possibility of dampness, the whole of the basement is enclosed by damp-proof retaining walls of two thicknesses of 14in. brickwork in cement, separated by a vertical dampcourse extending the full height and a horizontal dampcourse at the floor level. Against the outer face of the wall is sandstone ballast hand-packed between the wall and slope of soil under the side walk, and extending from underside of the pavement to rock face, where is laid a continuous perforated drain, connected at intervals with the drains in building. Inside these walls are massive piers of brickwork in cement, which support the external piers and walls of the superstructure; at

piers of brickwork in cement, which support the external piers and walls of the superstructure; at the centre are the huge masses of brickwork which are carried up to support the main dome. The basement floor is laid with an average thickness of 9in. of concrete, on this is floated 1½in. of cement and Nepean sand, and the floor is finished with 1½in. of specially prepared asphalt. The ground floor is constructed with main box girders running transversely, 2ft. 6in. deep and 1ft. 6in. wide over the flanges, and spaced at about 16ft. centres. These are supported by two rows of cast-iron columns of 20in. diameter and 2in. metal, having bracketed spreading caps to which the girders are bolted, the column bases being bolted to large trachyte foundation beds. The street ends of these girders rest upon and are bolted to specially designed cast-iron stanchions, which are also bolted at the bases to trachyte beds. The flooring is formed of fireproof terra cotta lumber 15in. deep, the underside being plastered, and forming the ceiling of the basement. On the top of this terra cotta lumber concrete is laid, varying from 9in. to 12in. in thickness, floated with cement and finished with an elaborate pavement of high-class encaustic tiles. The lighting of the basement is effected by means of a large number of prismatic pavement lights and stall-board lights under the shop fronts, as well as circular pavement lights which recur in the pavement of the avenue, into the tile pattern of which they are worked. The ventilation of the basement is effected by means of 16 large octagon shafts which are carried up the whole height of the brickwork at the ends and centre, and will be provided with all necessary exhaust and duct apparatus, the shafts being also connected with the upper floors. With the exception of the brick piers and arches under the main dome and central block and the walls enclosing the staircase blocks at Druitt and Market streets ends, the whole of the main internal construction consists essentially of ironwork.

FEATURES IN CONSTRUCTION.

On the first floor the main transverse girders are carried on riveted steel stanchions, which rest on heavy cast-iron boxes secured to the top of basement columns, and through which the ground floor girders pass. The street ends of these first floor girders are seated on wrought-iron bed-plates on the top of trachyte piers, while the avenue ends project beyond the supporting stanchions as cantilevers, thus forming the galleries. The second floor is constructed in a very similar manner to that of the floor below, except that the cantilever ends of the transverse girders have a much greater projection, owing to the different disposition of the supporting stanchions. The whole of these floors are constructed with fireproof terra cotta lumber. The main roof over the avenue is formed with a series of lattice semi-circular steel trusses. The ventilation is effected by means of metal dust-proof louvres. All of the other roofs throughout are constructed of timber framing carried on wrought-iron girders of various sizes. The main central dome is 61ft. 8in. in diameter, with a height of 71ft. 3in. from the iron bed-plate to the top of the cupola frame, and is constructed with 16 main ribs. The main ribs are stiffened by means of horizontal braces, circular on plan. The whole of the cupola frame rests upon and is rivetted to the curb ring connecting the heads of the main ribs of the main dome. The brickwork, 2ft. 8in. thick, forming the drum of the main dome, is carried on large steel box girders. The whole framework of the dome and cupola is constructed entirely of steel, and has been rivetted together throughout in position. The inner dome is constructed entirely of steel framing, formed with 16 ribs. The outer surface of the main dome is covered with sheet copper, weighing 2½lb. per foot, with rolls spaced at about 4ft. centres at the springing line. The copper rests upon heavy tarred felt, laid upon two thicknesses of 1in. boarding, laid diagonally and secured to 4in. x 3in. wood purlins, bolted to steel purlins. The covering of the cupola and columns is of 1½lb. copper; that of the minor domes is of Muntz metal. The whole of the stanchions, columns, girders, joists, &c., throughout the building are completely encased with fireproof terra-cotta lumber; all the internal piers, avenue columns, &c., being formed with this material. The avenue columns are finished with Keen's cement. The cornices round the gallery fronts are of zinc; all the ornamental plaster work is of fibrous plaster, of which the ceiling of the concert hall is a noteworthy example. The building is served by six fireproof staircases, 6ft. wide, which extend from the basement to the upper floors of the building. The staircases at the ends of the building, from the ground floor upwards, are formed of trachyte tailed into the walls and constructed as hanging flights. The central staircase on the York-street side is constructed in unique manner, where the winding flights and half landings are carried by strings formed of shaped wrought-iron girders; the central staircases from the ground to the first floor on the George-street side are constructed with freestone walls and strings carried on piers, arches, and columns with carved capitals, the steps being also of sandstone with heavy slate treads. All the stairs to the basement are formed with sandstone steps and slate treads. The whole of the staircase landings, and galleries throughout are finished with wrought-iron balustrading, and heavy-moulded and polished handrails. All of the external walls, which are executed in the beautiful coloured freestone obtained from the Waverley Quarries, are carried by very heavy box girders over the shop fronts, and resting on the large trachyte shop piers. These girders are 2ft. 8½in. deep and 1ft. 6in. wide on the lower flange, the upper flange being 2ft. 6in. wide, and the spreads beyond the webs are stiffened by angled † stiffeners. The whole of the joiner work throughout the building is constructed of specially selected and well-seasoned cedar.

The approximate quantities of building material used in the construction of the edifice were as follows:—Concrete, 3075 cubic yards; brickwork, 4½ million bricks, 1141 rods; trachyte, 23,380 cubic feet; freestone, 256,383 cubic feet; ironwork, 3000 tons; plastering, 55,418 square yards; glazing in roof, 6382 square yards; terra-cotta lumber, 29,040 square yards; tiling, 6050 square yards; asphalt, 4500 square yards; prismatic lights, 3420 square feet.

LIFTS AND ELEVATORS.

As the basement generally is to be largely utilised as a wholesale market, the primary essential to be considered was that of rapid and easy communication. This necessary provision could not be more readily afforded than by the hydraulic cart-lifts from York-street, which will afford special facilities for descent and ascent of a loaded cart with horse. These cart-lifts, of which there are four, have an average travel from the street to the basement floor of 22ft. 9in., and are constructed to raise a load of four tons. They are of the simple direct-acting class, with one lifting ram, and are hydraulic balanced. The average size of the platforms is 24ft. x 13ft. On the street level and at the basement floor, the entrances to the lifts are closed by means of folding wrought-iron gates, and the ends of the platforms are protected by means of heavy chains extending across the full width. Electric communication of the very latest description is also provided. The passenger elevators, of which there are four, are of the suspended and simple class, the travels of the cars in all cases extending from the basement floor. The cars are enclosed with delicate ornamental metal work and Bostwick and sliding gates at their entrances. The power for working the whole of the elevators, cart-lifts, and dinner-lifts is obtained from the plant situated in the basement at the Druitt-street end of the building, and which is of the most modern and complete character. The pressure water generating plant, consisting of three three-throw pumps, is capable of delivering 9000 gallons per hour against a pressure of 700lb. per square inch, the motive power being obtained from three 14 n.h.p. Crossley's "Otto" gas engines, which, together with the pumps, are arranged so that they may be driven singly, together, or any two together. The accumulator is packed with about 100 tons of sandstone. The ram is 20in. in diameter, and has a maximum stroke of about 14ft.

ACCOMMODATION.

The spacious floor area of the basement is mainly to be utilised as a market. On the ground floor are 58 shops, varying in size from 16ft. x 15ft. 6in. up to 38ft. x 36ft. The coffee palace is situated at the

65 shops, varying in size from 16ft. x 15ft. 6in. up to 38ft. x 36ft. The coffee palace is situated at the Druitt-street end of the building. On the first floor are situated 17 large rooms of various sizes, each having windows facing the street, as well as the handsome glassed screens facing the gallery over the avenue. The height from floor to ceiling of all these rooms is 15ft. 6in. On the second floor, in addition to 12 warerooms, offices, or showrooms of practically the same disposition and varied sizes as on the floor below, there is a gallery about 152ft. x 25ft. suitable for picture, sculpture, or other art exhibitions. Off this gallery, and connected with same by means of two spiral staircases, are two storerooms. Adjoining the gallery is a smaller gallery, which may be subdivided into artists' studios. At the Market-street end is a large hall about 91ft. x 33ft. wide and 43ft. high, with an ornamental cast fibrous plaster ceiling and abundance of light and ventilation. This hall may be utilised for concerts, balls, banquets, public meetings, &c., and is estimated to seat, exclusive of platform, about 450 to 500 people. Connected with the hall are commodious retiring rooms. On the third floor is situated an extensive suite of apartments forming a most complete photographic gallery.

THE CONTRACTS.

Contract No. 1 : Excavation of southern half of basement and brick piers, £11,597 19s 1d ; contractors, Messrs. Tate and Lawler. Contract No. 2 : Iron columns and girders for above, £5759 8s 6d ; contractor, H. Tulloch. Excavation of northern half of basement by day labour, under direction of the city architect, £4192 6s 1d. Contract No. 3 : Brickwork and trachyte for northern half of basement, £2992 ; contractors, Messrs. Loveridge and Hudson. Contract No. 4 : Ironwork for northern half of basement, £3351 ; contractors, R. L. Scrutton and Co. Contract No. 5 : Erection of superstructure and completion of basement, £203,030 ; contractors, Messrs. Phippard Brothers. Contract No. 6 : Hydraulic elevators and cart lifts and machinery, &c., £10,285 ; contractors, Waygood Elevator Company. Contract No. 7 : Incandescent gaslights and gas arc lanterns, &c., £1591 14s 6d ; contractors, Messrs. F. Lassetter and Co. Contract No. 8 : Finishing of basement floor, &c., £4985 ; contractors, Messrs. Phippard Brothers. Contract No. 9 : Gasfittings, £1175 ; contractors, Messrs. F. Lassetter and Co. The groups of marble statuary, which are to cost £3300, have been designed and modelled, and are being executed by Mr. W. P. Macintosh. The whole of the work in connection with this building has been designed by, and carried out under the immediate supervision of, Mr. George M'Rae, the city architect. The chief draftsman engaged in the preparation of the drawings in connection with this work was Mr. James H. Merriman, the clerk of works being Mr. W. Tough. The consulting and supervising engineer in connection with the ironwork and machinery was Mr. George Massey, M.I.M.E.