

It will be observed that, though the cubic contents do not correspond with the quantities ordered and intended to have been put in, there is no very serious discrepancy, especially when it is known that the concrete was simply thrown into a trench excavated in the clay, which could not be expected to preserve extreme regularity in outline. It was also proved in evidence that the Contractor was paid by measurement for all concrete placed in the work, and that it certainly was not to his advantage to reduce the quantity for which he received a liberal price. Boulders were observed to have been allowed to remain in the positions in which they were found in the trench, apparently with the knowledge and consent of the Inspector. In several places large stones lying very close together were found embedded in the concrete. A large amount of evidence was obtained upon this subject. These stones were known as "packing," and were permitted to be inserted by the contract specification "to the Inspector's approval." There was considerable difference of opinion between the Inspector and Contractor as to the quantity that should be admitted. The Inspector was of opinion that these stones were placed too close together, and that in No. 2 Block (north) they should be entirely omitted, as, owing to the soft nature of the ground, he considered that the concrete should be composed of stronger material, the stone packing, in his judgment, weakening the foundations. The Commissioners do not find that the Inspector was supported by the Architect in this opinion, but that the former had in consequence to wage a perpetual war with the Contractor on the subject, and eventually give way, for the stone packing was inserted throughout the work.

The Commissioners consider that the specification for concrete was very vague, and that it should have given full particulars as to the exact proportion of material to be used, and not have left so important a matter to be a constant cause for dispute between the Inspector and Contractor. It also placed the former in a very unfair position, unless his opinions and instructions were promptly and properly supported by the Architect, to whose guidance and decision it was his duty to appeal.

During their examination of the concrete the Commissioners have been enabled to form the opinion that the quality of that placed in the northern end of the building is not so good or so well executed as in the other portions of the structure. They, however, found no reason to doubt the quality or proportions of cement used, as the work had set well, though full of interstices, owing to the proportions specified, in which sand formed no part.

6. The Commissioners are of opinion that the defects observed in the building cannot be altogether traced to the fact that either the plans or the specifications were not adhered to. The Architect's plans and specifications have been generally followed, excepting in the concrete foundations, in which there has been a serious departure from the contract-plan.

The plan provides for concrete footings to all foundations of walls. These were shown, as measured by scale—for the front ambulatory wall a width over all of 3ft. 3in. by 12in. in depth, for the middle wall a width of 2ft. 9in. by 15in. in depth, and for the back wall a width of 4ft. by 15in. in depth. In construction, the Inspector considered that a stronger foundation would be secured by carrying up these walls of a greater average thickness, but without footings, losing sight of the fact that in doing so the bearing-surface would be considerable reduced. In his evidence the Inspector states that the foundations of the front and middle walls were put in and paid for as 3ft. wide by 3ft. deep, the back wall being increased from 2ft. to 2ft. 6in. in thickness; but the footings, 4ft. in width, were omitted altogether. This alteration was made with the Architect's consent, as it obviated the necessity for the use of boarding, the trenches being cut out to the size, and the concrete simply thrown in. The Architect states in evidence that it was his intention to put in the foundations in this manner where possible, as instanced by the schedule-prices, where the concrete in walls where framing had to be used, a higher price is paid. It was also ascertained that there had been a difference of opinion between the Inspector and Contractor as to the dimensions of various portions of the works as read by scale from the contract-plans. No architect's plans other than those attached to the contract were put before the Commissioners, and they found considerable difficulty in arriving at the intended dimensions as measured by scale upon rough tracing-cloth. These were the only plans provided for use on the work by the Architect, though the Inspector, who was paid by Government, had, for his own satisfaction and convenience, drawn out a large number of working-drawings to a large scale, which were used during the construction of the building.

The plans attached to the contract were, with a few exceptions, drawn to a scale of one-eighth or one-sixteenth of an inch to a foot. This was too small to be of any material use in laying out the works or arriving at the correct dimensions. The specification was also, generally, of a very loose description, and quite insufficient to insure the carrying-out in a proper workmanlike manner of a contract of such magnitude. It was too general in its character, leaving too much to be determined by the mutual agreement of the Contractor with the Architect or Inspector.

Although the reduction in the bearing-surface of the concrete foundation-walls was the result of the alteration made in the contract-drawings, the Commissioners are of opinion that such alteration was not the sole cause of the defects, though to some extent it must have contributed towards it. A large bearing-surface is absolutely necessary where the site of the foundation is proved to be not only wet, but of a faulty and treacherous nature, consequently, where the defects to the building have occurred, and where ample warning was given by the highest authorities, the width of the concrete wall-base should not only have been maintained at the dimensions shown in the contract-plans, but additional precautions should have been taken, and the bearing-surface very considerably increased. Unless in exceptionally good ground, the intended depth of 3ft. for the foundations is not considered to be sufficient to be safe from the effects of the weather. The Commissioners, therefore, find that the departure from the contract-plans in respect to the width of the footings to have been a serious error of judgment on the part of the Architect and his Inspector.

7. The Commissioners are of opinion that the Architect is responsible for any divergence from