

report presented to Parliament, "that the injury to the building is no more than might have been caused by irregular settlement in the foundations." Subsequent investigations have proved that this view is correct. Mr. Blackett visited the place, and he was of the same opinion; and careful examinations made by Mr. Hay recently show, without doubt, that there is no forward movement of a general kind in the strata underlying the asylum; and, if such a movement had existed, the drains put in at three different levels would have undoubtedly stopped it. Mr. Hay's report of the 18th December, 1887, goes fully into the matter. Among other things, he shows that, instead of being out of line downhill, portions of the building are bent uphill. He also shows that, instead of the back wall being pressed against the centre one—which would undoubtedly have been the case had the damage been caused by a thrust from behind—the front walls have actually gone away from the back walls. It is also seen that where extra foundations were put in, at the end of 1886, the base of the foundations being widened and strengthened has prevented to a very great extent the settlement of the wall thus protected, and it is very remarkable to observe that at the junction between the strengthened walls and the walls that have not been strengthened the latter have gone away from the former. The subsidence continues where the strengthening has not been put in, but it has stopped where the strengthening has been put in, thus showing that the extra width of foundation is what is required. There is therefore, in our opinion, no doubt whatever that the damage has not been caused by a movement of the ground from behind, but, as I put it in my report in 1885, by irregular settlement in the foundations. It is quite possible that this settlement may be aggravated by overflow from the downpipes, which are imperfectly constructed; but this also is a matter which the Architect only is concerned with. The Public Works Department has nothing whatever to do with it. This plan will show you what has been done. We found that the principal settlement was here [indicating on plan]. We put down large blocks of concrete on each side of these openings. The blocks were 3ft. 3in., and 2ft. 6in. deep. We built up five arches, and so gave greater bearing-surface to the foundations. Old rails were put on the top of these blocks and bedded into them, and strengthening-blocks were put in as buttresses in the angles, still using the rails to distribute the weight. There is no doubt whatever that this has been of very great assistance, for the large cracks which were in existence when I inspected the building in 1885 had not materially increased—that is, they have not materially increased since the strengthening was put in.

Mr. Skinner : At what date was this?

Mr. Blair : July, 1885.

Mr. Skinner : What was the size of these cracks?

Mr. Blair : I think $\frac{5}{8}$ in.; perhaps more. The building was then settling down. At that time there was no movement—practically no movement outside this block [indicating on plan]. There is not the slightest doubt that this widening has done good. These cracks have not extended to any great extent.

Mr. Mountfort : Did you punch holes into the walls to get these rails in?

Mr. Blair : Yes.

The Chairman : So long as the rails held they increased the bearing?

Mr. Blair : This brings me to the last part of my statement—the defects that have been discovered in connection with the building and the foundations. Attention was first directed to this matter by Mr. Ussher in investigating the question of the drainage. In September, 1885, he was led to believe that the foundations were defective at the place where the damage has occurred. On the 9th September he says that "the foundations are not carried down in accordance with the drawings, and are resting upon very soft material, with a slight quantity of water trickling through it." He was asked from Wellington, on the 11th, to get Mr. Lawson to explain why the foundations had not been carried down in accordance with the contract. On the 18th Mr. Ussher states that "there is a step which causes a deduction of some inches from the depth of the concrete shown on the plan. I do not, however, consider the matter of very great moment. A slight increase in the depth of the foundation would not affect the building, on account of the soft nature of the ground here. On this subject the Architect might, perhaps, be called on for an opinion." In this same report Mr. Ussher gives measurements of the foundations, and he also refers to a place in which "the concrete is intersected for a width of nearly 2ft. by what appeared to be an old drain filled with sticks, brickbats, and pieces of lime mortar." A fresh movement having occurred in May, 1886, at the front part of the building, Mr. Arthur Bell, who happened to be in Dunedin, was asked to investigate it. In the course of his report he gives a sketch where he has bared the concrete for a depth of 2ft. and a length of 3ft., and, instead of the concrete projecting, or being flush with the brickwork, it was really narrower than the superincumbent brick wall. There is a considerable overhang. This piece was bared afresh for the inspection of the Commissioners, as also was the adjoining window, which had never been opened before; and I may be permitted to say that it would be difficult to find a more flagrant example of scamping. As I have already stated, plans were prepared for strengthening the foundation in October, 1886, and the work was carried out immediately. It was expected that this work would effectually cure the subsidence, so nothing further was done towards investigating the alleged defects in the foundations; but when the cracks reappeared in December last the matter was fully gone into by Mr. Hay. Mr. Hay has prepared very elaborate plans, which I submit, showing the extent of the damage all over the building. He has also bared the foundations at no less than thirty-seven places, and in no instance has he found the foundation anything like what it ought to be, according to the contract plans. All along the colonnade, where the damage has been the greatest, the foundations are about 18in. too shallow, and there are no footings whatever. I hand in this plan—the sections of the foundations; also a key-plan showing where the sections were taken. [Document No. 3 produced.] It is scarcely necessary to describe them, as they describe themselves.

The Chairman : Are any of these foundations shown on both sides of the wall?

Mr. Blair : Only on one side.