

The contract for the central block was accepted on the 11th of September, 1879. Upon the 23rd of October, 1879, the Architect wrote to the Engineer in Charge of the Middle Island, requesting that drainage-trenches should be sunk behind the site of the permanent building, so as to isolate the site. Upon the 16th of January, 1880, the Architect again wrote to the Engineer in Charge to the same effect, urging more speedy action. Upon the 29th of March, 1881, the Architect again wrote to the Engineer in Charge, urging the expediency of proceeding with the main back drainage, and pointed out that Dr. (now Sir James) Hector, who reported upon the site on the 9th of June, 1880, had laid much stress upon the necessity of isolating the site. The Inspector of Works also wrote to the District Engineer (Mr. E. R. Ussher) upon the 1st of April, 1882, to the same effect, pointing out at the same time that water was standing in the foundations to a height of 6in. below the floor-plates.

The Architect wrote to the Engineer in Charge upon the 25th of April, 1882, pointing out the necessity for carrying out a comprehensive drainage-scheme, as the foundations were being damaged by drainage-water lying in the trenches, and that indications of unequal settlement were beginning to show. In reply, the Engineer in Charge wrote to the Architect upon the 19th of May, 1882, asking for further particulars. This is the first indication that the Public Works Department contemplated the execution of any system of drainage. The Engineer in Charge stated that in his opinion its execution should be deferred until the erection of the building was approaching completion, and that the keeping of the foundations free from water during the prosecution of the works was a matter for the Architect and the Contractor to attend to.

Sir James Hector in his report upon the site pointed out that the northern end of the building was placed upon an unstable formation of boulder-clay, which was liable to expand and contract during wet and dry weather. He recommended the excavation of a deep trench round the northern end of the building, in order to cut off the foundation from the surrounding clay formation, and isolate it from the effect of any motion to which that formation was subject, and at the same time facilitate its thorough drainage. He also suggested the alteration of the plan of the building, in order to avoid placing it upon excavation-sites of different levels and geological formations.

The Commissioners are of opinion that in designing a building of this importance and magnitude a proper provision should have been made in the specification for dealing with the drainage of the foundations, especially since they were placed at different levels. It was not possible to put in an efficient system of drainage after the erection of the building without considerable additional expense, and weakening the foundations in ground of doubtful character.

The Architect repeatedly called the attention of the Public Works Department to the fact that drainage was necessary, eliciting no reply, however, until the 29th of May, 1882, or thirty months after his first letter on the subject was written. Seeing the urgency of the necessity for proper drainage, especially after the publication of Sir James Hector's report, we consider the Architect to blame for not insisting upon such works being carried out as he considered necessary to insure the safety of the building in course of construction under his directions.

Whether or not it was the intention of the Public Works Department to take all drainage operations under its charge in the first instance we have no evidence to show; but the Commissioners consider that this must have been the case, and therefore are of opinion that the department cannot be considered to be free from blame for not paying attention to the repeated applications of the Architect and warnings of Sir James Hector on the subject.

The Commissioners are not satisfied that the isolating-drain called for by the Architect and recommended by Sir James Hector would have remedied the defects in the excavated site, as it would have established very efficient drainage; but they are, however, of opinion that under the circumstances it would have been a great advantage, and that the recommendation referred to should have been acted upon, as the entire separation of the site from the surrounding formation would have removed the possibility of any extensive creep of the ground being communicated to the structure.

2. The Commissioners do not consider that the building at the present time is absolutely dangerous; but, as it is evident that the action causing the settlement has not ceased, it will be necessary to keep a close watch, so that, upon any indications of the tendency of the movement to increase, measures may be taken to provide accommodation elsewhere for the patients now in the affected part until the building shall have been restored to its proper state. Mr. Reid, the carpenter in charge, from the nature of his duties, will be able to keep an accurate check on any movement affecting the safe use of any part in which it may become unduly conspicuous, and we advise that he shall keep a diary, noting any alteration in the present indications of settlement in walls, floors, windows, doors, or other parts in or adjacent to the north wing and its airing-courts, and that he shall furnish reports at least monthly to the District Engineer, noting any matter which in his opinion requires attention.

3. With the exception of a fracture in the main front gable of the central building (which is separately reported on by the Commissioners) and a local settlement in the bay windows at the east end of the north wing, the injury to the structure is confined to the ambulatory and the building appertaining to it, named upon the plan Block 2 (north), having dimensions about 100ft. by 25ft., and which connects the north wing to the central portion of the asylum. This part is rent, fissured, and bent to a very serious extent, having apparently suffered from two movements, the effects of which and the present appearance being minutely recorded in the evidence of Mr. P. S. Hay, where drawings (No. 18), giving dimensions, show the plumbings of the walls and the cracks now visible. Some small indications of movement appear in the north wing, caused apparently by the larger ones of the connecting blocks before named; but it appears to the Commissioners that the injury to the north wing, being slight, will not affect its stability, provided that the remedial measures hereafter detailed are carried out.

4. The Commissioners consider that there were good grounds for anxiety in the fact that the