

# St Helena: Public Works and Services Department

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## The Project

The terms of reference for the project were to prepare designs and working drawings for new buildings for the Public Works and Services Department (PW & SD). PW & SD at that time consisted of the Works Department; the Water and Energy Departments; the Transport Department; the Unallocated Stores and the Administration.

The Department was based in the Castle in the capital, Jamestown but many of the workshops and stores were on other sites scattered around the island. The accommodation in the Castle was wanted for other purposes and there was a general desire to move the department to more centralised and efficient premises outside of Jamestown.

The initial problem was to establish the physical extent of PW & SD. Because of the remoteness of the island and the impossibility of obtaining spare parts at short notice, spare parts of every conceivable kind for every conceivable purpose were stored in numerous storage buildings. There were also a lot of workshops where PW & SD craftsmen could repair damaged parts or even manufacture them if they were damaged beyond repair and replacements were not available. There were for instance large numbers of vehicles from the 1950s and 1960s on the island such as Ford Anglias, Zephyrs and Zodiacs, Vauxhalls, Morris Minors, etc, all kept going by the expertise of the island's craftsmen.

PW & SD at that time carried out a wide variety of functions on the island. The Unallocated Stores served as the main storekeeper for the island and an enormous range and variety of goods were stored for PW & SD's own use and for sale to the public.

The Works Division maintained existing and constructed new government buildings including housing; it maintained the existing drains, sewers and settlement ponds and built new ones; it manufactured doors, windows and furniture; it maintained and built plumbing installations and maintained and constructed the island's roads.

The Energy Division ran the power station that produced the island's electricity; maintained the power distribution network; installed new overhead and underground lines; provided new electrical installations and maintained existing ones. The Water Division maintained the existing water reticulation systems and dams and constructed new ones.

The Transport Division serviced and maintained all government vehicles.

It was necessary to visit all of the buildings belonging to PW & SD and check the extent of these against the original schedules of accommodation that had been provided and it was soon apparent that the areas of many buildings had been under-estimated.

Another major problem was that the storage accommodation in the Unallocated Stores was inadequate, inconveniently located, badly lit and ventilated and most stores had no under-cover space for off-loading, unpacking and sorting.

After discussions of these problems with PW & SD staff a new brief and a revised schedule of accommodation was agreed.

The proposed site for the new buildings was the Rifle Range site at Half Tree Hollow but there were problems associated with the use of this site and various alternatives were

suggested. It was assumed however for the purpose of designing the buildings that this was the site that would be used.

The buildings were to be constructed by the Works Division and one of the principal design constraints was therefore to keep construction as simple and straightforward as possible, using the maximum of locally available materials (albeit imported), equipment and skills, whilst dealing with the prevailing climatic conditions. This meant mainly using concrete blocks and timber doors and windows.

### **Design of Buildings**

The final designs as agreed with PW & SD provided the following accommodation:

**PW & SD Office Building:** This was designed to accommodate the office staff of all of the divisions and it occupied 2½ floors utilising the slope of the site. The main entrance was on the top floor at the rear, accessible across a bridge from the parking area. The Director of Works and senior staff were also on the top floor, with accounts staff, foremen, etc on the ground floor and with an entrance for public and staff on that floor.

**Works Division:** The Works Division was accommodated in two single-storey workshops: Workshop 1 contained a cabinet workshop and a joinery workshop with a shared machine space; two offices for foremen; a timber store and a machine shop. Workshop 2 contained a painters' store; a materials testing lab; a tool store; a sign-writers' workshop; an open, covered workspace; a blacksmith's and welder's shop; a plumber's and tinsmith's shop with an attached office; a scaffold store; a mess-room and toilets.

**Water Division:** The Water Division accommodation consisted of an open, covered storage area for pipes and other large materials; a workshop; a store for small materials; a foreman's office; a mess-room and toilet/showers.

**Energy Division:** The Energy Division was accommodated in two workshops: Workshop 1 contained a large covered store; a spares/tools store plus an office; an installation workshop plus an office; an appliances workshop plus a meter test room and a mess room and toilets. Workshop 2 contained a workshop for distribution and transformers with a gantry and a small mess room with a supervisor's office above.

**Transport Division:** The Transport Division was accommodated in two workshops: Workshop 1 had a compressor room; a battery room; 3 bays for cars and vans, 4 bays for trucks and buses and 2 bays for heavy equipment; an office; a lubricant store and a mess room. Workshop 2 had an office; a tool/spares store on two levels; a panel beating/ spray shop; a blacksmith's and welding workshop; an equipment workshop; large and small machine workshops and toilets and showers.

**Unallocated Stores:** Account was taken in the design of the 5 stores of the attempts being made at that time to rationalize the storage of materials but even so, large amounts of storage space were still required. Store 1 incorporated a high density shelving system on two levels. It had a covered loading bay at the front for fork-lift use, with access at both levels through two-storey high sliding doors. It was designed to store paint, electrical goods, hardware, motor spares, plumbing accessories and clothing in separate sections. There was also a shop for sales to the public, offices for the storekeepers and ledger clerks and toilets for both sexes. Store 2 had access from one end through a sliding door large enough for a fork-lift carrying 6 metre lengths of pipe, etc with racking along the walls for reinforcement; 6 metre deep racking along one side for storage of timber, pipes, conduit, trunking, etc; and a mezzanine level above for the storage of tyres, inner tubes, softboard, masonite, etc. Store 3 accommodated cement; coils of water pipes; large tyres; steel roof sheets; sanitaryware; glass and tiles; steel windows, steel sheets and louvres; transit kits and furniture. It had a loading bay along

the front of the building for the use of fork-lifts with access into the various stores through large sliding doors. Store 4 accommodated roof sheets; armoured cable; insulators; transformers and electric poles which were then being stored outside without cover. Store 5 was a small store for oxygen and acetylene on one side and chemicals on the other.

### **Construction of Buildings**

The buildings were designed to be as simple to construct as possible, using mainly load-bearing blockwork with a suspended reinforced concrete slab in the office building and imported steel portal frames with profiled steel cladding and fair-face blockwork infill walls in the workshops and stores. All roof pitches were  $17\frac{1}{2}^{\circ}$  and roofs were constructed of profiled steel sheets on timber purlins and trusses in the office building and steel 'Z' purlins on portal frames elsewhere. The office building had large roof overhangs to keep the sun and rain off walls and windows thus reducing heat gain and maintenance costs. The projecting fin walls and external timber louvre screens were designed to keep the sun out of rooms between the hours of 8am and 4pm throughout the year. All windows were openable for maximum ventilation. The central corridors were also well lit and ventilated.

The workshops and stores were lit through bands of translucent sheeting under the eaves or lower down the walls, protected by sun-screens; through translucent sheets in the roof; or by standard metal windows, again protected by sun-screens. The workshops and stores had 20cm floor slabs reinforced with BRC mesh and self-finished and the office building had a 10cm ground slab with a 5cm sand-cement screed and pvc tile finish and an RC first floor slab with a similar finish. The office building had gutters and downpipes but rain from the roofs of the other buildings would have discharged into concrete storm drains.

### **Possible Construction Sites**

The buildings were designed for the Rifle Range site at Half Tree Hollow but as the majority of the buildings were simple, single storey buildings, they would have fitted without difficulty on any site large enough to contain them. The office building was designed to take advantage of the slope on the site but could have been adapted to fit another site. The various site options that were explored were as follows:

**Rifle Range Site:** This was the preferred option of PW & SD mainly because it was closest to the centre of gravity of the Department's workload and staff ie it was close to the capital, Jamestown and to the areas where the majority of its staff lived. There were however, problems: the site was rocky and sloped steeply and therefore site development costs would have been high; it was not easy to accommodate all the buildings on the site; the site faced north-west and the buildings would have had to cope with very low sun angles in the mornings and afternoons; access to the site was very difficult and there appeared to be no possibility of constructing a new road into the site without demolishing some houses; the rifle range running down the middle of the site had to be retained and caused problems in siting the buildings; it was in housing area and the size of the development would have caused problems with access and noise. See site plan.

**Three Tanks Site:** Although a better location in terms of road access than the Rifle Range, this site was not large enough to accommodate all of the buildings but it could have accommodated the stores buildings making it easier to fit the workshops and offices on the Rifle Range site and alleviating some of the construction and access problems.

Donkey Plain: The Works Division already had some activities based here but the area above the quarry was not large enough to accommodate all the buildings.

Rupert's Valley: There was a plan to develop Rupert's Valley as the cargo off-loading point for the RMS and as the container terminal for the island and therefore, in some ways, this seemed the obvious place to locate the new buildings. There were however problems with road access into Jamestown, the area of land for available was very limited and a lot of storm water came down the two valleys that meet there. It would however, have been possible to construct the complex here if the development was split up and various sites in the valley were utilized. See site plan.

Bottom Woods: In terms of suitability for building, cost of construction, space for the buildings, parking areas, and for future expansion, this would have been the most suitable site on the island. The problem was however its location a long way from Jamestown and the centre of gravity of the Department's workload and the consequent problems of the transport of staff and public access. See site plan.

The last point for consideration was whether, or for how long, PW & SD should remain the main storekeeper for the island. If this function disappeared and was taken over for instance by the private sector, over a third of the buildings would not have been required and the siting of the complex would have been a great deal easier.

## **Conclusions**

A site had not been selected by the time that I left the island because of continuing disputes within the Island Council over what site should be used. Even at that time the site selection situation was being complicated by the fact that consideration was being given to the construction of an airfield on the Bottom Woods site and as the Council could not agree on a site, the buildings were never constructed.

I do not know what has happened with regard to PW & SD since I left. Probably nothing and it is likely that they are still muddling on. The airport has however been constructed even though it would appear (and this was pretty obvious even then to most people on the island) that large planes will never be able to land there because of the strong winds (and wind shear) that affect that side of the island.

It was a fascinating project and required a great deal of work in order to come up with a solution to the problems with which I was faced and it is a pity that the buildings were not built. The local residents (the 'Saints') were very welcoming and treated me very well and I very much enjoyed my stay on the island. It was also good experience of life on a small island and the work I carried out on this project led directly to my next project in the Solomon Islands.