

Conditional Assessment for Buildings on Robben Island



Outline Description of Material Testing Required

November 2018



OSMOND LANGE ARCHITECTS
+ PLANNERS



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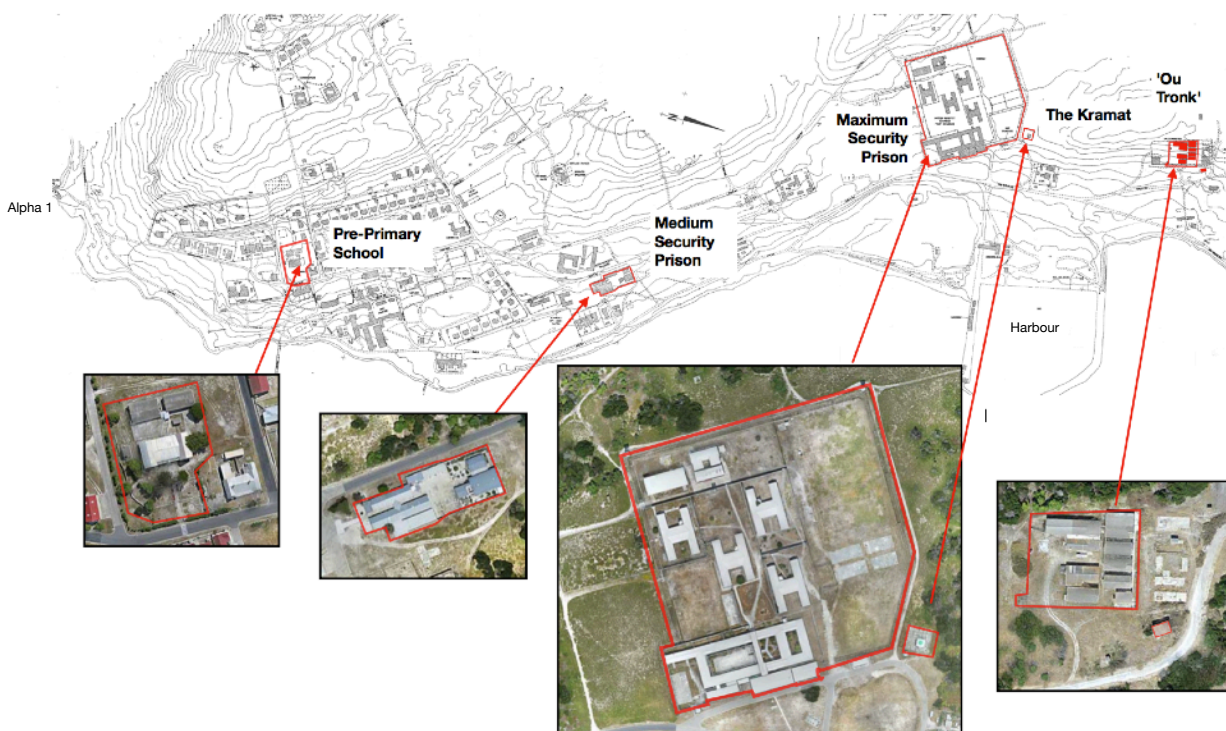
1. OVERVIEW

Introduction

The professional consultancy joint venture, Charles Consult Consortium consisting of Charles Consult, Osmond Lange Architects + Planners and Bosch Projects, was appointed by the Coega Development Corporation (CDC) in July 2018 following a formal procurement and adjudication process.

The scope of the conditional Assessment was defined by the CDC to include the following five building precincts :

- Old Maximum Security Prison
- The Kramat
- The Ou Tronk / Trade Training Unit
- Old Medium Security Prison (now the MPLC)
- Old School (Pre-Primary School)



Each of the building precincts has been the subject of detailed inspections. Where As-Built drawings were not available, the buildings have been measured and new As-Built drawings compiled. Not all drawings are included in this report, only buildings that are unique or are representative of similar buildings or similar fabric.

The Stage 1 report assesses the general conditions of the buildings within the identified precincts.

The inspections focussed on the build technique and materials used, and the way the building would have functioned and are being used now. The survey and report outlines what work needs to be

done to the buildings (with the approximate cost), and makes recommendations as to the type of particular skills required to carry out the repair and restoration works.

Most buildings are in a reasonable state of repair. The MPLC, which, although in better condition, appears to have lost some of its historic features.

There is strong evidence that previous maintenance and repair works have not taken into account how buildings 'breathe' and how condensation and dampness is to be treated. **It is this aspect where we require a detailed description of the wall material content.**

2. BRIEF

Establish material cross section and composition of walls in the following buildings :

1. An external wall in Section A, Single Cell Block. A cross section of a already exists.



2. an internal wall not affected by damp in Section B;



3. lime mortar used in pointing in a west facing wall on Building B103 (Recreation Hall). Cement pointing repairs has been done in places.



4. Composition of lime mortar used in pointing in a west facing wall at The Kramat. Picture shows silicon over repairs to the pointing in cement.



5. external and internal wall composition of cell block B061 at the Ou Tronk;



6. external wall composition in dining area at the MPLC, building B167; and
7. external and internal walls at the western dormitory in building B167;



8. plaster material on northern wall of B319 (School);



9. mortar used in the dressed stone walls - west wall and south wall; mortar and plaster type for an internal wall.



10. An internal wall at the school B319.



Note :

Assessments of Wall composition consists of type of render, plaster, brick type and quality, mortar, concrete, external skin including pointing, analysis of each element is required.

A substantial recreation area with playing fields and four tennis courts was located on the north side of the precinct - within the secure perimeter fence.

Of symbolic significance is the fact that the buildings were built by prisoners themselves, both political and criminal (Baumann and Le Grange, 2001.)

Most buildings, excepts for the few auxiliary buildings and the prefabricated fibre cement walled administration buildings, are built with limestone bricks in possibly a cement/lime mortar mix, and clad with blue stone facing quarried on the island. The blue stone forms a permanent shutter for an approximate 100mm thick mass concrete layer sandwiched between the blue stone and the brick wall. Walls are rendered internally either with a high gloss enamel or with acrylic PVA. The blue stone was originally possibly pointed using locally sourced lime mortar, with cement repairs in later years.

Floors are highly polished granolithic concrete screeds. Asbestos cement 'Big Six' corrugated roof sheeting on wooden trusses. All rainwater goods are predominantly asbestos cement.

The entrance buildings facing east have timber framed casement windows. A noteworthy feature of the Entrance building is the use of purpose made square precast concrete facing blocks. The external face of the blocks comprised of grey oval pebbles set closely together with the narrow ends of each pebble projecting outwards. The mortar joint between the separate blocks was painted white creating a distinctive architectural feature.

This detail was used both on the main facade and within the entrance lobby. Remainder of the windows in the precinct are steel casement windows with round vertical security bars.

All roof have corrugated asbestos roof sheeting in various stages of dilapidation.



A sample of limestone brick found on Robben Island. A typical example of the quality of brick produced. It appears if the mortar contains cement, which should be analysed to determine the mortar mix for the restoration work.

Restoration

Assess existing fabric and determine state of repair, make recommendations for the repair and continued maintenance.

Where necessary, replace all cementitious material with lime mortar.

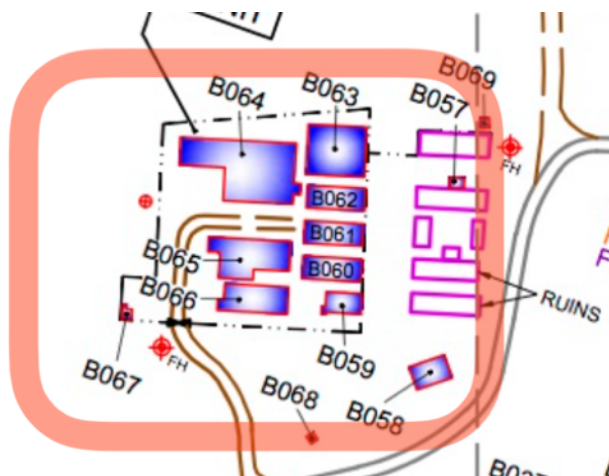
Revamp of watch towers as tourist attraction. Restore all unused buildings not currently open to the public. Notably the kitchen, boiler room and recreation hall.

Investigate current use of buildings to ascertain if they comply with national building regulations

Repair pathways and courtyards.

Attend to structural issues related to the Prison Yard walls and make any necessary interventions in a subtle and non-intrusive manner.

2. Ou Tronk



Ref	Ou Tronk
057	Ruins
058	World War 2 Armoury
059	Office
060	Cell Block
061	Cell Block
062	Cell Block
063	Cell Block
064	Workshop
065	Store
066	Cell Block
067	Toilets

Brief Description

The Ou Tronk comprises of two sets of buildings and ruins of buildings from two separate periods of construction.

The first set of buildings was constructed during World War 2. These are located on the north side of the precinct.

Apart from the Armoury (B058) which has survived intact due to its all-concrete construction, the balance of these buildings were timber framed prefabricated buildings on brick plinths (probably based on British Army prototypes).

It is likely that these buildings housed support staff for the nearby Battery. Only the plinths remain of these buildings. These plinths have some significance as the timber framed buildings were converted in the 1960's for use by the Prison Service as confirmed by oral histories of prisoners.

The second set of buildings were constructed later by the Correctional Services and accommodated a Trade Training Unit.

The buildings were constructed of traditional building material, lime plastered fired red brick in lime mortar walls, timber roof construction and asbestos cement roof sheets.

This second group of buildings would lend itself to an adaptive re-use.

Restoration

Restoration of all buildings, design of landscaped/external area with minimal interference, replace part of the fence to museum quality and making the precinct accessible to tourists similar to the current use of the Maximum Security Prison.

Provide new public toilets.

As an alternative, if funding is not immediately available for a full restoration project, the precinct buildings should be 'mothballed' ie. preserved in such a state that the building do not deteriorate any

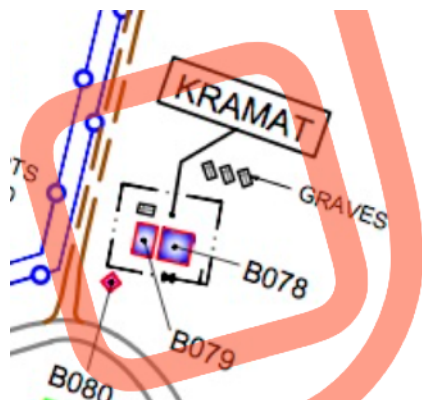
further, and keeping the present condition with minimal maintenance. Restore only one building, say B065, to a last use and utilise it to house exhibits of this and possibly the Zink Tronk as well.

The Zink Tronk site can easily be cleared of vegetation to create an outdoor space to the Ou Tronk precinct for an increased visitor experience.



Fig 2. View of the Ou Tronk from the east. The Zink Tronk site is to the right of the cell blocks behind the armoury.

3. The Kramat



Ref	Building Description
078	The Kramat
079	Courtyard & Tented structure

Brief Description

This Kramat was built in 1967 over the grave of Hadjie Matarim, a muslim priest originally from Arabia, who was in the service of an Indonesian sultan when he was exiled to Robben Island in 1744. He died on the island in 1755. A granite plaque mounted within the Kramat commemorates these details and the year 1969 when it was formally opened. The grave is marked with a raised rectangular podium clad with polished grey granite tiles. There is also a plaque to Sayed Abduramen Moluca.

The Kramat is has a similar design to the Ghaibi Shah Kramat on Signal Hill.

The Kramat is a simple square building from local "leiklip" with ribbon pointing, internal brick lining and concrete infill. The concrete roof is a green cupola and four miniature cupolas at the corners. The Kramat has a fine plaster cornice and plaster surrounds to the doors and windows.

The entrance is covered by a cantilevered concrete canopy and is approached via a short flight of steps flanked by two flower boxes. Windows and doors have Moorish arches.

The entrance door is half-glazed and the windows are wooden four-paned casements with fanlights. The inside walls are plastered with minor damage from water leakage. Ongoing maintenance is required to prevent further deterioration.

When the Kramat was constructed, a small walled area existed behind the building which contained two headstones. These were probably the graves of other Muslims exiled from the East. The body



Fig 3. Entrance to the Kramat



Fig 4. Tent structure next to the Kramat

of Pangerau Chakra Deningrat, the Prince of Madura, who died on the island in 1754, was later returned to Indonesia. (Bassett, B.W. & Rudner, J., Robben Island: An annotated survey of buildings and sites of architectural, historical and contextual importance, and recommendations concerning a conservation policy for the island. January 1986. NMC).

In recent years a formalised square precinct has been created around the Kramat utilising a standard galvanised palisade fence and a concrete surface bed. The entrance gate is sited on axis with the entrance door in the Kramat. An ablution facility - a freestanding wall with a few water points - was built in the north eastern corner of the Kramat precinct.

A single grave is located within the south west quadrant of the Kramat precinct.

An informal metal structure has been incrementally erected within the precinct over which tarpaulins are presumably draped to form temporary covered areas during religious ceremonies.

Restoration

Generally the building is in good condition, only the external west and north facing facades need specific attention. Remove all silicone and cement pointing and replace with lime mortar.

Service and maintain timber doors and windows where necessary.

Reinstate 'star and crescent moon' device onto main cupola.

Repair to external stone wall and 'courtyard', complete perimeter fence and provide a proper gate to match the palisade fence, design an external counter next to existing foot bath to house HVAC condensers and possible temporary tent structures.

Remove all existing poles for the temporary tent structure and provide new free standing external covered area.

Remove all surface mounted services, including anchor positions of tent structure.

4. Medium B Security Prison - MPLC

Brief Description



Ref	Building Description
163	Library and Solitary Confinement
164	Admin
165	Pergola
166	Art Centre
167	Prison, Admin, Kitchen, Dining

This set of free standing buildings is assumed to have been built during World War 2 and subsequently converted in a prison in the 1960's

The Medium B Security Prison comprised of a series of separate buildings arranged in a roughly rectangular precinct. The external walls of the buildings partly formed the perimeter and connecting walls complete the limits of the secure precinct.

It is 8m x 34m in extent and housed the Kitchen, Food Stores, Cells for the Prison Cooks and Sick-bays. The walls are of plastered brickwork and the western wall is integrated into the perimeter prison wall. The roof is a double-pitched fibre-cement sheet roof and has two large sheet-metal ventilation cowls projecting from it. The windows are double casement windows with top-hung fanlights and are made of timber. External doors are, double leafed framed ledged and braced ('FLB') doors with fixed fanlights above. (Baumann and Le Grange, 2001).

Associated with this enclosed area, is a partially closed 'afdak' or lean-to section, 13m x 6m in area, which was used as a laundry and ablution area. It is a building that was likely constructed after 1960. (Baumann and Le Grange, 2001)

The 18m x 5.5m structure has a mono-pitched fibre cement roof and its western wall is incorporated into the Medium Security Prison perimeter wall. (Baumann and Le Grange, 2001)

The main structure of building B166 incorporates three large cells and a small ablution area. The walls are of plastered brickwork incorporating barred steel windows and the floor is of cast concrete. (Baumann and Le Grange,

The 22m x 14m main structure, used as prison cells has a barrel vaulted fibre cement ('Big Six') sheet roof. It is a building that was most likely built before 1960, [check on 1948 map - old navy mess in this area] either during WW2 or during the subsequent period when the Island was administered by the S.A. Navy. (Baumann and Le Grange, 2001)

It is assumed that walls consist of lime bricks (calcium silica) with lime mortar and plaster, and originally rendered using lime washes. Modern paints were likely introduced in the refurbishment in 2003/2004. Many of the original WW2 features were removed during the alterations carried out to convert the facility for use from a prison for common criminals in the 1960's, to a Multi-Purpose Learning Centre (MPLC).

The buildings are currently used by school groups, either on day visits, or for longer week visits during school holidays. There are well kitted out dormitories using a double bunk system and cupboards in the dormitories. There seem sufficient ablution facilities. A large, well lit dining hall and newly restored kitchen with all required equipment ensures proper meal preparation and consumption.

Restoration

This precinct will be relatively easy to repair, with minimal intervention required to provide proper finishes, especially on internal faces of perimeter walls.

As stated elsewhere, modern paints such as PVA acrylics and enamel paints are not compatible with lime mortars and plasters where wet conditions occur. Moisture can be from wind driven rain, leaking gutters and from leaking water pipes.

The flaking paint in some of the dormitories is evidence of this, and where this occurs, all paint has to be removed, surfaces checked for any cement repairs, which will also need to be removed. Restore plastered walls using lime plasters to match original lime composition, then render using lime washes and distempers.

Any walls not affected can remain, but the two different building systems are to be clearly defined so that future maintenance work treats each type correctly.

The cause of the black mould, which is quite prevalent in the dining area, needs to be investigated. It is likely that there is inadequate natural ventilation in this space. Surrounding remedial work will be required to prevent this from re-occurring.



Fig 5. Black mould on walls in dining area. Causes need to be established



Fig 6. Note the flaking paint on the walls close to the concrete ceiling. Most likely caused by excessive moisture generated by children with walls not being able to 'breathe'.

5. Pre Primary School



Ref	Building Description
319	School
320	Link between School & classrooms
321	Children's Toilets
322	Classroom & Toilets
323	Teachers' Toilets
324	Classrooms

Brief Description

The Pre-primary School precinct is situated in an area of Robben Island predominantly utilised for staff housing. The precinct comprises five separate buildings, the largest of the five having the most heritage significance as a Victorian era stone built structure with extant verandah.

The other two larger buildings, linked later via a crudely built flat roofed asbestos cement undercover walkway, are of lesser significance and are almost certainly more modern or have been adapted over time. These double pitched asbestos cement roofed buildings were used as classrooms. B324 consisting of two separate classrooms, B322 had one large classroom partially divided in half. The southern side of this building has male and female toilets under the same roof. There are also two toilet buildings, perhaps built at different times. B321, a mono-pitched flat roofed building, has a male and female component, and B323 is a single roomed mono-pitched flat roofed structure with two toilet cubicles and a wash basin.

The school building is one of the oldest buildings on the Island because it was first used as a lime house before 1846. There has been a flagstaff in front of the building at least since 1846. (Deacon, H., RIM 2000).

Converted to a chronic sick ward with two rooms in 1846, it was extended by 1890 and altered again to act as a staff recreation facility by 1893. (Deacon, H., RIM 2000).

In 1941-59 it was used as a training school for the army and then for the navy. (Deacon, H., RIM 2000).

After 1960 it was used as a primary school for children of the prison warders. In 2000 the building was still being used as a primary school. (Deacon, H., RIM 2000), and ceased to be used as such in 2011.

On Mondays the children went to school until 2 'o clock, on Tuesday until 1 'o clock, on Wednesday until 11:20, on Thursday until 2 o' clock and on Friday until 1 o' clock. The reason for the early closure on Wednesday was for the children to be able to take a special noon boat to the Cape, to do anything that had to be done on the mainland (1973-1994). (Van Zyl, D., Interview by Victor, M. & Stephney, I. Robben Island.

The buildings are currently vacant and a suitable use needs to be found for it.

This stone school building is situated on top of a terraced (formerly formal) garden with two tall flanking Norfolk Island pine trees. This is a rectangular symmetrical stone building with two short wings terminated by faceted end bays covered by gable roofs. Between the wings is a verandah with wooden pillars and ornamental balustrade and in the middle, a small gable with woodwork and finial to mark the main entrance. The walls are of primarily dressed Robben Island stone with raised jointing. The corners are articulated with plaster quoins; the windows and doors have plain plaster surrounds. The windows are Victorian sashes with the upper sash subdivided into small panes. The entrance door has been replaced with a modern fielded door, but has the original glazed double doors to the wings. The back of the buildings has modern steel windows. (Bassett, B.W. & Rudner, J., Robben Island: An annotated survey of buildings and sites of architectural, historical and contextual importance, and recommendations concerning a conservation policy for the island. January 1986. NMC).



Fig 7. East Elevation of the Pre-Primary School.

Restoration

Attempts have been made to repair and restore parts of the stone building. We suspect that many parts of the stone walls have been repaired using cement, which is detrimental to the overall fabric.

Full restoration of main school building, possibly to be used as a conference or meeting place or formal teaching facility.

Toilet buildings to be repaired to functional public toilets, classrooms to repaired to functional usable spaces, external areas between buildings to be repaired/restored, terraces and gardens to be restored.

General Outline Specification

Walls, external - remove all external paint to expose mortars. Remove all cement plaster work, including all cement pointing. Apply 3 coat lime mortar plaster to previously plastered walls, using a lime sand mix similar to predominant existing lime mix. Render in lime wash

Walls, internal - remove all paint to expose plaster work. Remove all cement repairs and repair with lime mortar similar to external method. Render in lime wash

Suspended timber flooring - ensure all ventilation opening are clear of vegetation and debris to allow for full air movement, especially under the floor. Sand down by hand any water or other marks and reseal using raw linseed oils. Where suspended timber floors have been replaced with concrete floors, consideration should be given to the removal of the concrete, excavation of fill and reinstatement of timber floor.

Windows, wood - Repair window frames and glass using similar timber. Remove all plastic paint and repaint using a suitable enamel paint. Where timber windows are significantly compromised due to exposure to long term weather, these should be replaced with purpose made timber sash windows made using wedged mortice and tenon joints and waterproof glue. All mouldings to glazing beads and edges to be machined PRIOR to assembly and glueing of frames.

Windows, steel - remove all glass and strip frames of all paint. Paint one undercoat and two coats matt enamel

Doors and door Frames - similar to wooden windows. Front door : research most likely design of original door and replace existing front door.

Roof - check for leaks and holes in metal 's' rib sheeting and repair

Rainwater goods - replace all asbestos cement goods and replace with like in fibre cement. Ensure all box gutters and hoppers are leak free.

Lead flashing - ensure existing flashing is seated and sealed properly against wall and make good with same where sheets have slipped.