



INDEPENDENT CONDITION ASSESSMENT OF THE IRMA STERN MUSEUM

THE FIRS - ROSEBANK
CAPE TOWN

PREPARED FOR

THE IRMA STERN TRUST

BY

DESIGN MATTERS ARCHITECTS

OCT 2023

CONTENTS:

Cover	page 1
High Level Assessment	page 2,3
Detailed Assessment & Recommendations	
• External Envelope-	
o Roofing	page 4
o Walls & foundations	page 5
o Doors & windows	page 6
o Ceilings	page 7
o Floors	page 8
o External Works	page 9
• Storage and Archive	page 10
• Electrical, Electronic & Emergency Services	page 11
• Natural & Artificial Lighting	page 12
• Environmental Controls	page 13
• Art and Artifact Display	page 14
• Spatial Analysis - Assessment	page 15
• Spatial Analysis - Recommendations	page 16

Irma Stern's handpainted 'stain glass' deteriorating

IRMA STERN MUSEUM

DESIGN MATTERS ARCHITECTS

142 Lower Main Road Observatory 7925.
T: +27 (0) 82 414 2892 E: mcooke@desmat.co.za

2023/10/16 ©

High level assessment

This Condition Assessment of the Irma Stern Museum provides an independent, high-level view on the current state of the museum's buildings on the property, known as The Firs, where Irma Stern lived and worked, with a quantifiable costing and scope of work required to resolve the ongoing technical challenges and risks which have and continue to contribute to the deterioration and long-term safety of the Irma Stern Collection.

It should be highlighted at the outset that The Firs is a significant asset to the Irma Stern Collection and that conservation of both should be considered in an integrated approach. The architectural and heritage significance of the house, outbuildings and garden is thoroughly outlined in the Irma Stern Museum Precinct Report by Trevor Thorold to the University of Cape Town (UCT). This report recommended that the Firs be nominated as a Provincial Heritage Site in terms of the National Heritage Resources Act. ¹

The Irma Stern Collection, owned by the Irma Stern Trust, is currently housed in the house. This report addresses the current concerns around the state of the built fabric for this purpose.

Brief for the Condition Assessment

This is an independent specialist technical assessment of the Irma Stern Museum buildings and surrounding property situated at The Firs, 21 Cecil Road Rosebank in Cape Town, prepared by Design Matters Architects for the Irma Stern Trust. Following the artist's death, The Firs, Irma Stern's Home was repurposed to be used as a museum and art gallery to house the Irma Stern Collection. The museum is administered by the University of Cape Town, and on behalf of the Trustees of the Irma Stern Trust.

The Trust commissioned a condition assessment of the site buildings in July 2023 to establish whether the buildings could be restored to museum standards, especially given the major damp and problems currently being experienced.

The need for the assessment arose out of multiple and growing concerns that the collection is at risk and requires immediate and urgent interventions to ensure its long-term conservation.

As outlined in the 1969 Memorandum of Agreement between the Irma Stern Trust and the University of Cape Town the 'Collection shall remain the exclusive property of the Trustees, but, during the subsistence of this Agreement, shall fall under the physical control of the University who shall be solely responsible for the maintenance and safety thereof'. ²

Design Matters Architects, a Cape Town based practice since 1993, providing a range of professional services including: professional architectural services; heritage assessment and research; development planning; landscape and urban design; interior architecture; sustainability planning and financial appraisals; undertook the high-level assessment contained in this document.

With a strong integrated ethos across practice and research the studio is regularly involved in creative project-based work, research and design of exhibitions and publications, and increasingly in digital and new media projects. Registered architects Matthew Cooke and Gregory Mann (SACAP Reg No's: 6622,24714905) undertook the physical survey. Noëleen Murray contributed to aspects of the recommendations from a museum and heritage perspective.

On 28 and 29 August 2023, the Museum and buildings were inspected, documented, and photographed along with the collection's curator. Further meetings were held with various technical building specialists, such as damp proofing experts, a quantity surveyor, and fire and safety suppression system contractors, in terms of the high-level technical brief. These meetings took place on the 20 and 28 September 2023.

The Assessment on the pages that follow in A3 format contains illustrated, clear and concise points on the physical condition of the property, along with the recommended actions required in the upgrade of the various elements of the buildings in order to ultimately assist UCT and the Trust in making informed decisions about the future direction of the museum.

Technical principles for the preservation and safety of the Irma Stern Collection

The following are general points and technical principles relevant to consideration of risk in the housing and safety of the Collection. Each page of the assessment is presented as a response to these technical principles. These are guiding principles for the current high-level assessment. Appropriate future practices and specialist details will require specification in conjunction with the Curator of the Collection, as part of the integrated planning process and project plan recommended in this assessment.

Museum buildings

Museum buildings must be secure, watertight, and windproof, protecting the collections from the most extreme environmental conditions within a protective envelope and enabling the safe and aesthetic display of the collection for the visitors.

Storage of Collections

Deterioration, damage, or loss to a collection are minimised by implementing proper storage space, strategies and techniques, with good handling practices, effective fire and security protection, good housekeeping, appropriate environmental conditions and effective pest management.

A multi layered collection storage system is recommended, composed of successive layers of protective envelopes from the building itself to the equipment and containers that surround the object, designed to meet the collections preservation and protective needs.

Environmental Controls

Stable relative humidity (RH) levels of between 45% & 55% and temperature levels between 15°C and 22°C need to be maintained 24 hours a day in the display and storage areas of the Museum, reducing the risk of physical, chemical, and biological damage to the collection.

Lighting Controls

Light can cause damage to collections, and damage caused by light exposure is cumulative and irreversible. Objects and art not on exhibition should be kept in darkness.

The recommendation for illuminance of sensitive objects and artworks is 50-100 lux. The exhibit design should ideally be based on this range.

UV lighting should be eliminated as much as possible with an ideal UV radiation level of 0-10 microwatts per lumen and maximum of 75 microwatts per lumen.

Light level monitoring routine to be part of Museum operational plan.

Dust control

By controlling the infiltration of dust (particulate matter) the aesthetic of the display is enhanced and the need for cleaning is reduced, lowering the risk of damage to the collection over time.

Emergency services

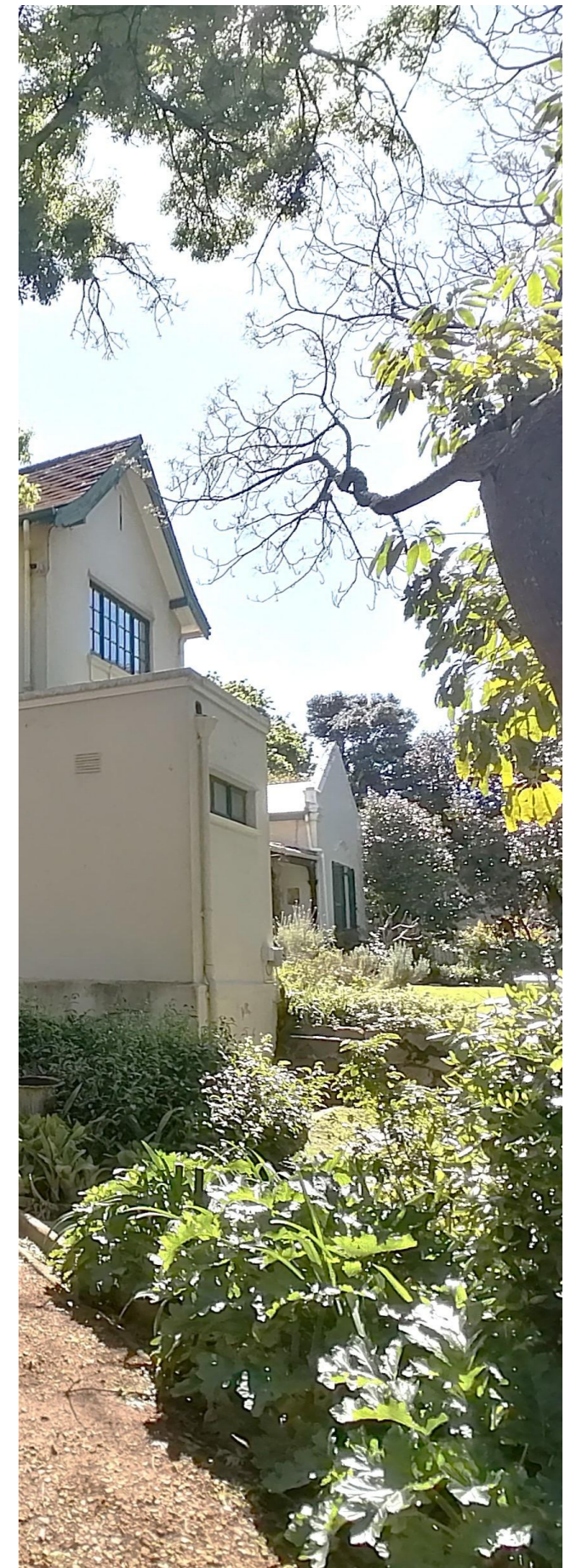
A comprehensive security system helps to limit losses from unexpected causes such as fire, theft, vandalism, protest action, natural disasters, and accidental damage.

Security and fire protection are as important to the long-term survival of a collection as are proper curation, storage, and conservation, and must be an integral part of the day-to-day care of the collection.

Universal access

The Museum has a C2 occupancy or building classification in terms of the National Building Regulations

Access and facilities that accommodate persons with disabilities need to be provided in accordance with SANS 10400-S.



IRMA STERN MUSEUM

HIGH LEVEL ASSESSMENT

DESIGN MATTERS ARCHITECTS

Conclusion of Condition Assessment

From the findings of this assessment, it is clear that there are a number of factors affecting the current safety and conservation of the Collection. In broad terms these include:

1. The very poor environmental and physical conditions of the Storerooms, particularly Store 1 where part of the Collection is stored in unacceptable conditions, for multiple reasons (See page 10 of this assessment);
2. The poor environmental and physical conditions in the museum display rooms themselves are also causing deterioration of the Collection that is on display, and;
3. The risk of possible loss or damage to the Collection due to inadequate security and emergency provisions is potentially disastrous. Suitable measures are required for the prevention of fire, flooding, theft, vandalism etc, and mitigation against load shedding through a proper long term backup system. These require both physical intervention as well as monitoring and planning procedures for emergencies and the maintenance of environmental controls through a museum operational plan.

As assessors of the condition of The Firs, with our architectural knowledge of heritage structures, building regulations, energy efficiency, safety issues and other property matters related to museums, it is our professional view that there is considerable reason for concern about the safety of the Collection at The Firs. In the current state, the Collection as a whole is deteriorating, and in danger of being lost. The risks of leaving the artworks contained in the Collection in these conditions in the short term are too great considering its importance as national and international heritage objects.

Recommendations

From a technical point of view this Assessment recommends that UCT and the Irma Stern Trust implement the following measures in the interest of the safety and conservation of the Collection for future generations:

1. Locate a secure, suitably equipped, and sized storage facility - and move the entire Collection to this temporary place of safety immediately
2. Once a suitable new archive and storage facility at the Firs has been completed to museum standards, the Collection should be returned to the site.
3. Initiate a process of specialist consultation for the development of an integrated planning process and project plan for the Museum in keeping with best practice internationally.
3. Appoint a consulting team to prepare all technical reports, drawings and details required to obtain approvals and tenders for the investigative and construction phases of the project allowing 10 months prior to the construction phase.
4. Secure funding (through fundraising or similar means) for the project based on estimates attached to the tune of R33 268 779.12 excluding VAT.
5. Implement the investigative works and make decisions pertaining to interventions / building renovations and refurbishment projects, allowing at least 10 months for the construction period.

This Assessment offers immediate high-level recommendations around processes and procedures to secure the safety of the Collection, while simultaneously emphasising the longer-term importance of considering The Firs and the Irma Stern Collection as integrated heritage assets. In keeping with the artist's house museum typology, the house, studio, outbuildings, and garden, should be considered as primary artefacts in the Irma Stern collections and similarly conserved in an artefactual manner. The house is intrinsic to the interpretation of the Collection and the appropriate conservation of both the property in Rosebank and the Collection needs to be urgently prioritised as significant resources of the National Estate, in terms of the NHRA (1999).

The unique value of the house as a setting for displays cannot be overemphasised and, if properly repurposed, it could become the kind of attraction that the houses of women artist such as Frida Kahlo or Georgia O'Keeffe and others are.

In other words, the setting of Irma Stern's home and studio at the Firs in Cape Town, along with her artworks embedded in the fabric of the property are a unique asset that, with proper reconceptualization, restoration and refurbishment would make this museum world class, putting Irma Stern alongside her international contemporaries in the art world.

The future display and curation of the collection in the former residence of Irma Stern will require securing funds to pay for the Irma Stern Museum complex to be upgraded to suitable standards to ensure its and the Collections long term safety, conservation, and significance.

Central to this informed decision making is the need to constitute a process in which exploratory work is conducted around the conceptualisation of a future approach to the updating of the Museum and the Collection. There are many good examples of artists' houses, house museums, and galleries to draw from and it is recommended that any spatial interventions be informed by a strategic plan for the curation and interpretation, display, organisation, conservation, and storage.

This will require a team including a specialist curator, conservators, architects, landscape and botanical specialists, and technical experts in field of art, history and heritage in the preparation of an integrated plan before commencement of physical works.

Central to this consideration is the question of function and programme of the spaces. Fundamentally is it to be a museum or a gallery, or both? Or is it be considered a house museum; in which case the spatial arrangements require reconfiguration (see some suggestions in the assessment). There are also curatorial decisions that require attention such as the display of originals of the artworks and artefacts in The Firs or making replicas and integrating new technologies. There are representational questions that provide exciting opportunities to explore. Is the museum to represent The Firs as it was when Irma Stern lived there or is it to also be a space that might host artists in residence and other programmes such as it does at present? Careful decisions around the approach to the restoration and the level of intervention require research into best-practice examples that integrate the built fabric and the collection into a curated whole.³

The careful conceptualisation of a brief for the use of the spaces should inform decisions around interventions and on the approach to restoration.

Footnotes:

¹ Thorold, T. 2012. Irma Stern Museum Precinct Report. For the University of Cape Town (UCT). National Heritage Resources Act [No.25 of 1999]

² Memorandum of Agreement between the Irma Stern Trust and the University of Cape Town 1969

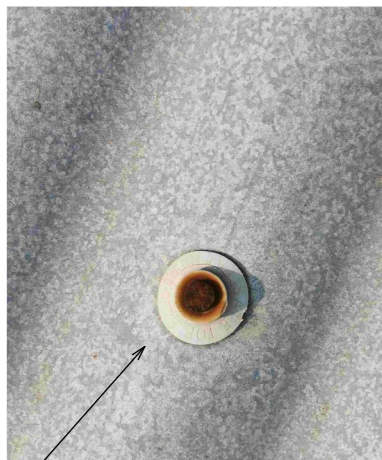
³ Better examples are that of the Lower East Side Tenement Museum and the approach to 'rehabilitation' as a sensitive alternative to the preservation by architect Andrew Dolkart. A similar approach was adopted in restoring Hostel 33 at the Lwandle Migrant Labour Museum in South Africa. These are documented in Dolkart, A. 2007. Biography of a Tenement House in New York City: an architectural history of 97 Orchard Street; and Murray, N & Witz, L. 2014. Hostels, homes, Museum: memorialising Migrant labour pasts in Lwandle, South Africa.



IRMA STERN MUSEUM

HIGH LEVEL ASSESSMENT

DESIGN MATTERS ARCHITECTS



Replace rusted fixings on galvanised roof sheeting

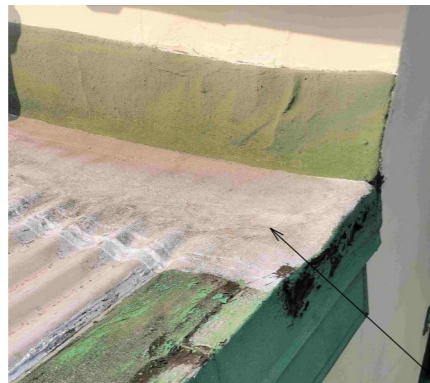


All rotten timbers to be replaced NB structural members as above



parapets require maintenance & upgrading

Roof junctions between different roof finishes (asbestos tile and corrugated iron) require regular maintenance and careful restoration



Roof above Museum back entrance porch and bathrooms in poor condition, to be replaced



Unpainted galvanised corrugated roof sheeting in fair condition can be retained with minor repairs & maintenance



curved timber ceiling to verandah to be redone when restoring / repairing the roof & structure



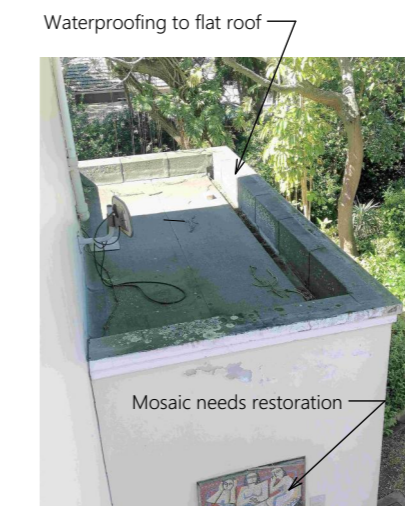
Asbestos roof tiles irreparable



Asbestos roof tiles: all tiles are extremely brittle, curved with fixings coming loose

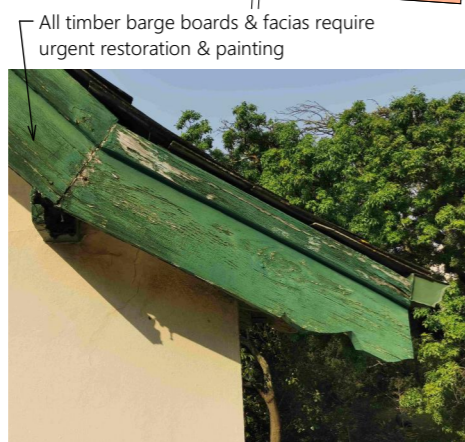
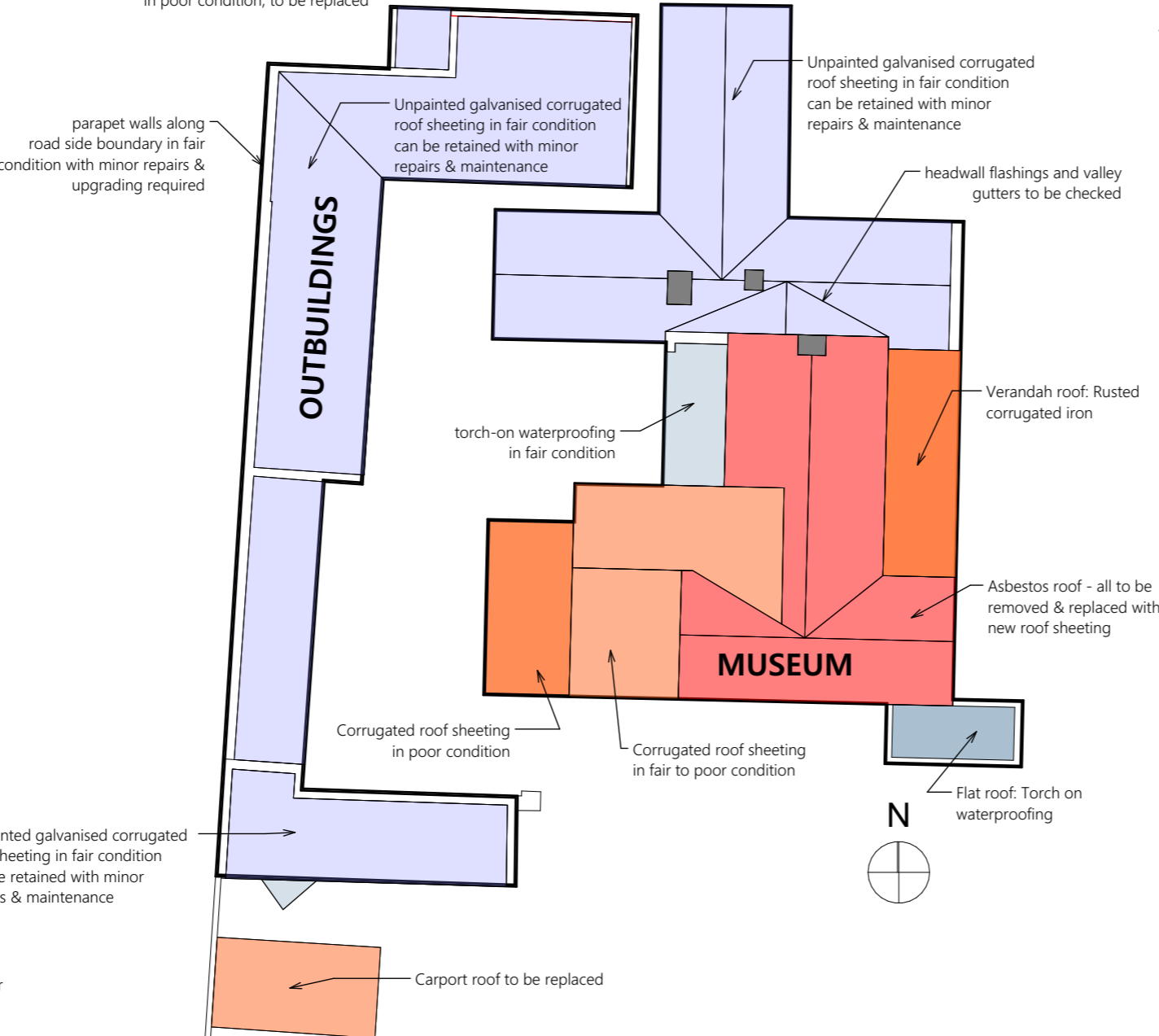


Eave sprockets, fascias and soffits to be repaired/replaced & painted

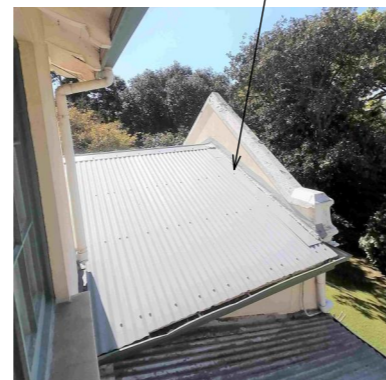


Waterproofing to flat roof

Mosaic needs restoration



All timber barge boards & fascias require urgent restoration & painting



All roof flashings need to be checked



roof repairs done with mixture of new & old materials- all to be replaced

Building envelope - Roofing (Roof coverings)

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The roofs of the museum buildings are in fair to very poor condition, and cannot be guaranteed, placing the Collection at risk. The following defects noted:

- The existing asbestos roof (approx. 30% of the roof area of the Museum) has reached the end of its life and is not repairable. It's extremely fragile, the fixings have come loose, and tiles are vulnerable to being blown off which exposes the museum to the elements. Emergency repairs are difficult to effect because you can't walk on the tiles without breaking them.
- The corrugated iron roof over the bathroom & entrance porch is in very poor condition. (Verandah roof currently being replaced)
- The passage flat roof was re waterproofed (torch on) in 2020 and is in good condition. The flat roof over Irma's bathroom appears in poor condition.
- The balance of roofs over the museum are unpainted galvanised corrugated iron in fair to good condition. Many roof fixings are rusted, and flashings have been reused. The roofs over the Dining Room, Studio, Old Kitchen, and Store were replaced in 2021, and sisalation fitted. A guarantee for this roof may be available.
- The timber eave sprockets, fascias, and bargeboards are generally in poor condition, with rotting, cracked and flaking timbers requiring extensive replacement and restoration.
- Gutters and downpipes are a mix of galvanised steel, cast iron, asbestos, aluminium and pvc reflecting piecemeal and symptomatic maintenance over time.
- Roof structure and ceiling voids have not been inspected.

Recommended action:

- Remove asbestos roof tiles and replace with new corrugated roof sheeting.
- Replace the corrugated roof over the entrance porch and bathroom.
- New roof sheeting to be 0.53mm AZ150 Zinalume coated pre-painted Colourbond sheeting -Victorian profile.
- Consider removing the remaining corrugated iron roof sheeting on the Museum to ensure a uniform and guaranteed watertight roof finish over the entire museum.
- Repair and restore all timber eave sprockets, fascias and bargeboards to original detail.
- Check all beamfilling to ensure airtight and rodent proof seals can be achieved.
- Replace all roof insulation with new approved to achieve higher than normal R values (to specialist recommendation) to reduce energy consumption of the environmental control systems.
- Replace all gutters and downpipes with seamless aluminium, ogee profile.
- Roof structure and ceiling voids to be inspected for borer beetle, vacuumed, and cleaned to remove all debris and dust, and to be inspected by a structural engineer to confirm the structural integrity of roof and ceiling structures.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS

Building envelope - Walls and foundations

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The walls of the Museum require extensive remedial work to minimise water ingress and to reduce/eliminate the rising damp to enable the safe display of the Collection in the interior.

- The condition of the external plaster is fair, to poor. There are numerous areas where the external plaster is cracked, in some places through to the interior, allowing for the ingress of water.
- The foundation walling is rubble, also plastered and painted. Similar cracks and patches of missing plaster were noted, allowing for moisture ingress contributing to the rising damp.
- Work has been done to the West wall of the passage to eliminate the rising damp. Some damp spots visible on interior.
- Almost every space in the Museum has some evidence of rising damp, and damp in walls.
- The gable parapet of the Dining Room, and the three chimney stacks have been poorly maintained and are vulnerable to water ingress.
- Surface fixed conduits for the multitude of services installed, drilled through the exterior walls leave walls vulnerable to moisture ingress at these points.
- Paint finishes vary, from acceptable to very poor patches of peeling, flaking and rupturing paint along cracks and at damp areas in the walls, including parapets and walls covered in lichen and moss.
- Internally the plaster and paint finishes are fair to very poor. Much of the plaster is loose, and hollow, with patches of blistering and bubbling paint and some structural cracking through to the exterior.
- The damp walls and bubbly paint severely restrict the areas that can be used to hang artworks, making it difficult to plan exhibitions and limits the number of artworks that can be displayed.
- Irma's decorated plates, plaques and mosaics embedded in the external plaster in various locations around the Museum are corroding and in need of attention and care.

Recommended action:

- It is advised that the Collection be moved off site to a place of safety to allow for the necessary repairs to the walls to eliminate damp and provide suitable display surfaces.
- Allow for the insertion of horizontal damp proof coursing in all walls on the ground floor of the Museum to waterproofing specialist recommendation.
- Allow for all internal wall plaster to be removed. The bare walls prepared, meshed, with services chased in place prior to replastering with appropriate waterproof plaster. A second coat of skim plaster to be allowed for to provide the desired finish internally.
- All structural cracking to be checked by Engineer, repaired, stitched together and replastered. It is possible that the replastering externally can be limited to the specific problem areas, however larger areas may need to be done to avoid a patchwork look to the exterior.
- Repair and restore the decorated plates, plaques, and mosaics.
- Exterior & interior painting: The entire museum to be prepared, repairs effected and repainted using specialist approved paint specifications.
- A specialist to be consulted to do paint scrapes and select colours Irma Stern would have used.



poor plaster works and flashing at roof junction



damp to the walls in the outbuildings where the exterior ground levels are too high



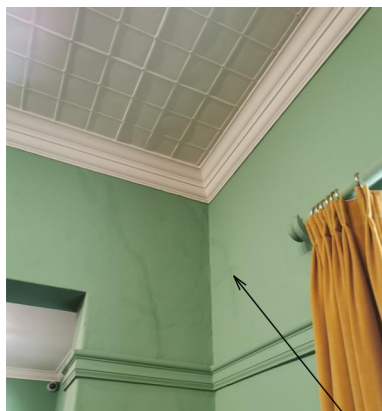
Severe structural cracking between gate pillars and coach house and Museum.



Cracks in the walls to Irma's Studio



poor maintenance to the chimneys allows water ingress into the walls & structure below



damp stains on the walls & blistering paint in the library & lounge



spalling plaster internally on stairwell

cracks, damaged plaster & poor service installation allowing ingress of water



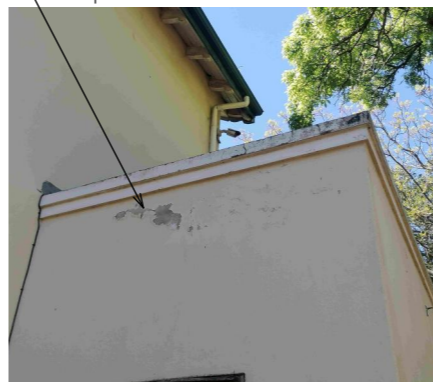
damp in walls next to a painting-blistering paint in the library & lounge



crumbling brickwork to substructure



signs of parapet waterproofing failing & damp in the walls



structural cracks through walls will allow water ingress & damp into the interior



example of external plaster & structural cracks

poor installation of roof flashing & counterflashings



IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS

Building envelope - Doors and windows

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The windows and doors in the Museum require considerable upgrading and work to reduce UV light transmission to interior, to allow for proper environmental control and to reduce risk of theft.

- The joinery (windows, doors and trim) in the museum is all timber, in working order and appears in fair condition.
- Multiple layers of paint applied over many years may well conceal damaged and decaying timbers below.
- Environmental control: Several windows and doors are left open in the museum during office hours, for ventilation and access, resulting in fluctuating humidity and temperature levels. Similarly, gaps between timber frames, sashes and doors allow for drafts and dust to pass through to the interior, affecting the environmental control and increasing maintenance.
- Ultraviolet light: UV light levels recorded in 2021 are concerningly high and will damage the collection over time. A UV blind was fitted to the bay window in Dudley's room in 2021.
- Security: Burglar bars are mostly very flimsy domestic style steel frames poorly secured to window frame interiors with drywall screws. A range of steel security gates and Trellidoors are fitted to door exteriors. These security measures are a deterrent but not a realistic barrier to entry, endangering the collection.
- Zanzibar door is approximately 1,7m high, with raised stepover threshold. The door is too low and narrow for use as the front door of the Museum. The door is insecure and vulnerable to exterior weathering.
- The internal doors, hand painted by Irma Stern, are fading, peeling and paint chipping. The glazed verandah door, the glass hand painted like 'stain glass' is also deteriorating.

Recommended action:

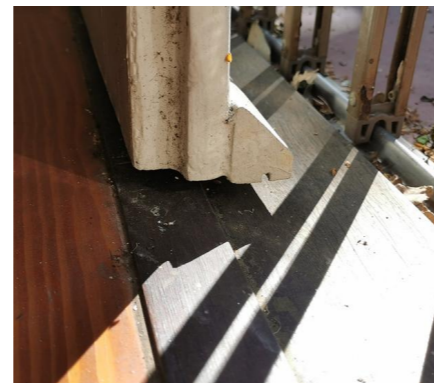
- All windows in the museum to be upgraded by removing the burglar bars, and double glazing the sashes with clear laminated safety glass, providing security and UV protection to the interior. Windows should preferably not be openable to enable proper environmental control to the interiors.
- Museum external doors to be renovated and upgraded, fitted with draft excluders, door closers and double glazing. A rationalised design approach to the replacement of the physical security barriers, co-ordinated with fire escape and emergency protocols is required.
- Conservation method to be determined for the restoration of the internal doors and 'stained glass' door painted by Irma Stern.
- Zanzibar door: Recommend fitting an appropriately designed secure glazed screen to the entrance porch in front of the Zanzibar door.



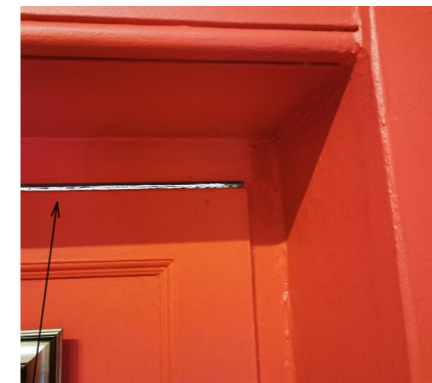
typical sash window - single glazing with inadequate burglar bars



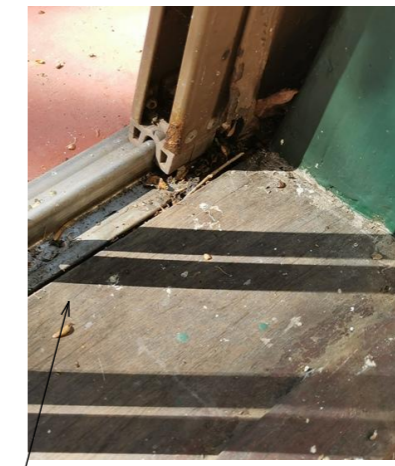
Store 1 door with no doorsill to outside or waterproofing- water free to travel under door to interior



typical inward opening external door (Studio) - no stepped rebate or draft exclusion.



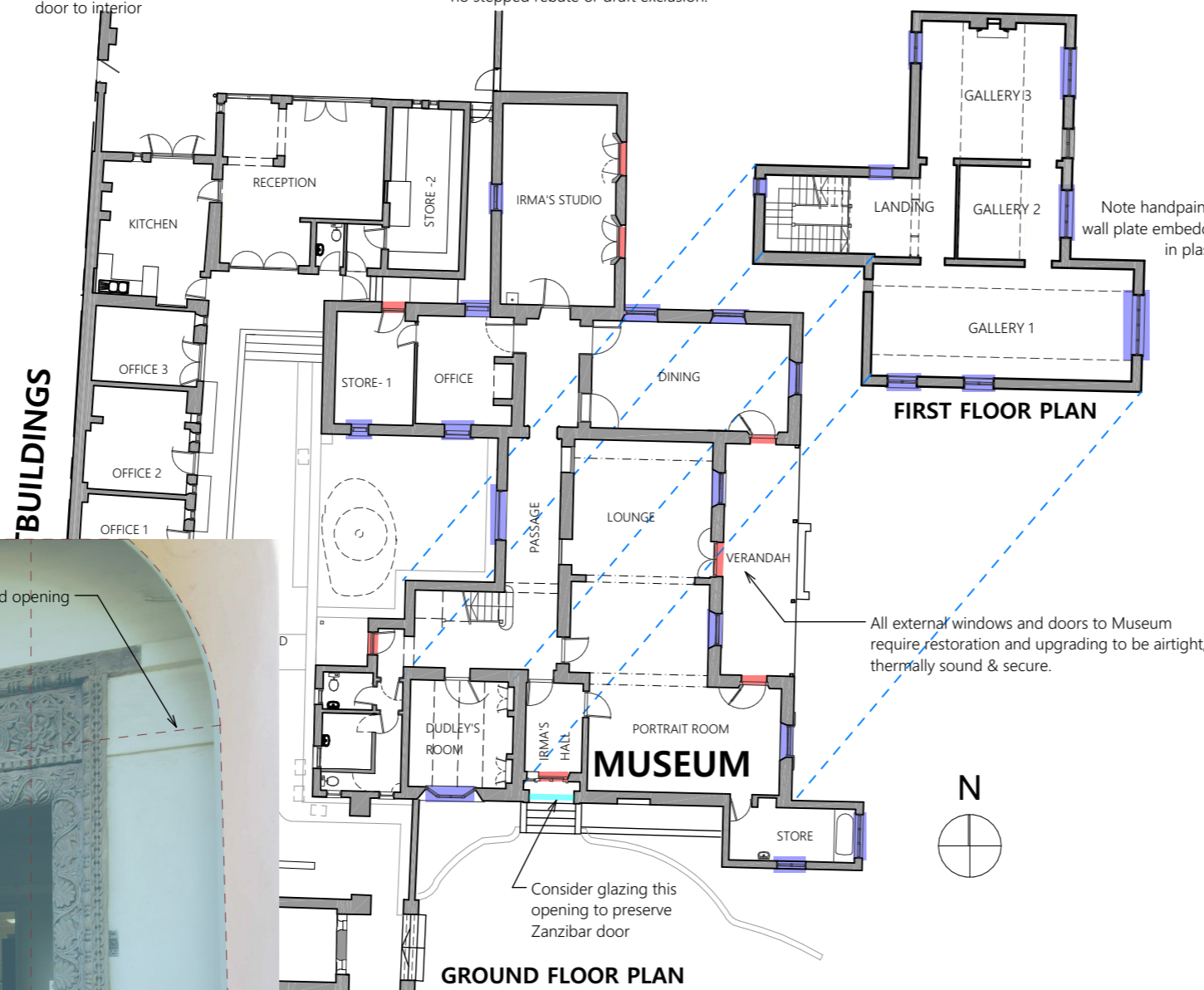
typical inward opening Portrait Room door - Poorly fitting with large gaps all round



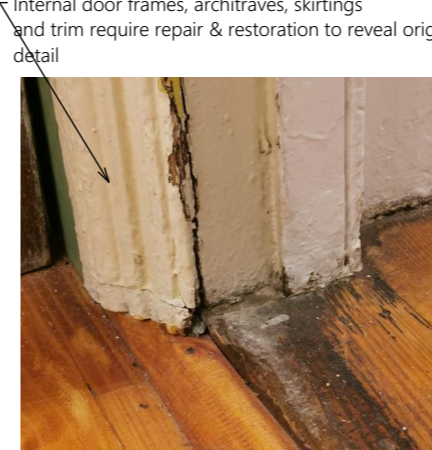
Irma's Studio door - water ingress from Stoep



Lounge doors: Irma's handpainted 'stain glass' slowly fading



Verandah door - security gate.



Internal door to Dudley's Room removed



IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

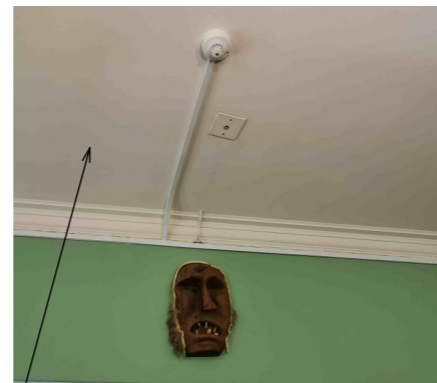
DESIGN MATTERS ARCHITECTS



Store 1: Plasterboard ceiling damaged and sagging possibly due to water ingress. Note surface wiring and services!



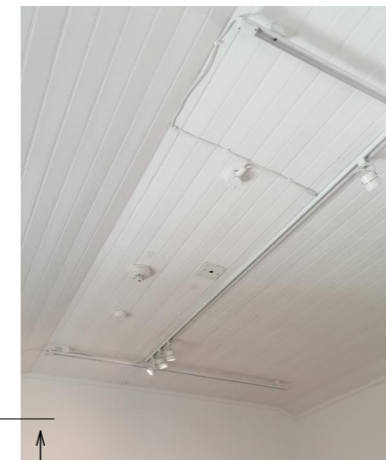
Store 2 hole in ceiling



Plasterboard to Lounge - restore previous ceiling or repair with all services hidden



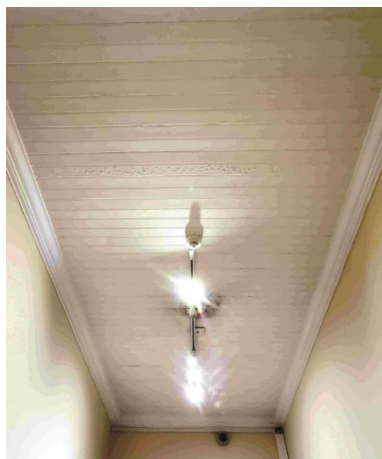
Kitchen ceiling tiles damaged



1st Floor - T&G ceilings to be restored & services rationalised



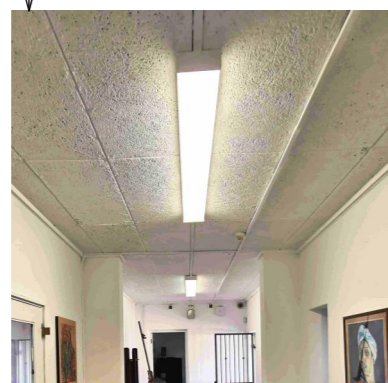
Plasterboard ceiling & cornice in passage in poor condition to be repaired / replaced with all services hidden



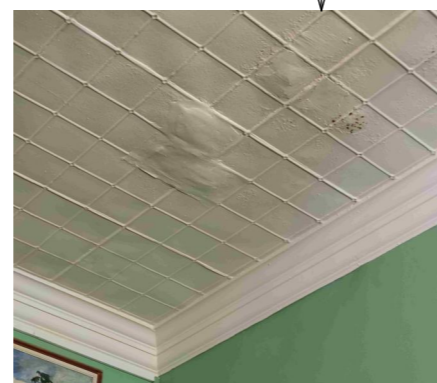
T&G ceiling in passage and stairwell. Original detail lost due to multiple coats of paint



Heraklith ceiling in Works Room & old entrance in fair condition



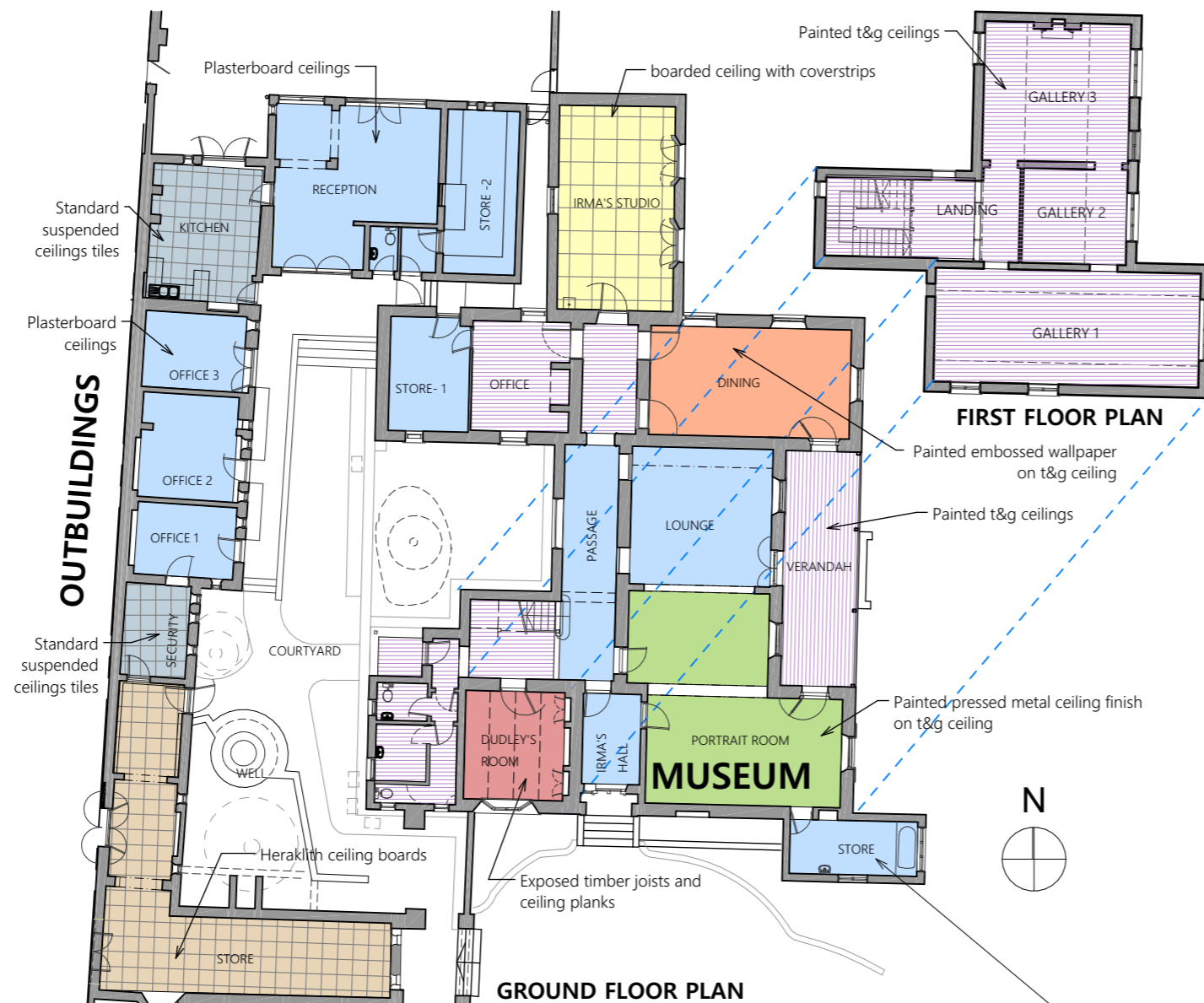
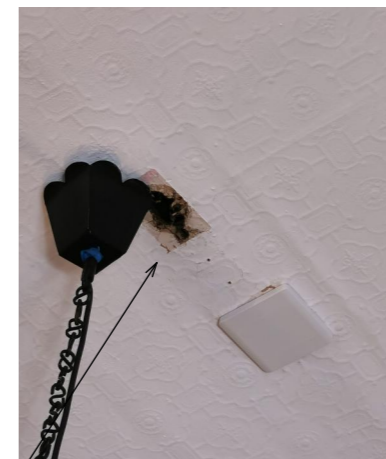
pressed metal ceilings rusted & poorly restored



Plasterboard ceiling in Store poorly patched, to be replaced



(Dining Room) Embossed wallpaper to be restored or replaced to match (now mended by UCT maintenance)



Building envelope - Ceilings

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The various ceiling finishes in the museum all require some remedial work, repairs and in places replacement due to water damage, sagging structures, the surface mounted electrical and electronic services and the multiple layers of paint and repairs over time.

Ceilings in Museum:

- Embossed wallpaper ceiling (Dining Room): Damaged from service penetration, and bubbling loose of the boards in some areas.
- Boarded ceiling with cover strips (Irma's Studio): Appears to be sagging.
- Pressed metal ceilings (Lounge and Portrait Room): In fair condition with rusted and poorly repaired spots.
- T&G Ceilings: Have lost much of their original detail through multiple coats of paint, with some damaged and loose ceiling boards.
- Plasterboard ceilings: Generally, in poor to very poor condition. Lounge ceiling fair, apart from exposed service reticulation.
- Timber ceilings and beams (Dudley's Room): Beams and ceiling boards in fair condition.
- Cornices and picture rails: In fair to poor condition. Some sections are missing, some are loose and have lost much of their detail through multiple coats of paint.

Ceilings in Outbuildings:

- Various ceiling finishes in fair condition:
 - Heraklith ceiling tiles (may contain asbestos),
 - 600 x600 and 600x1200 suspended ceiling tiles sagging in kitchen,
 - skimmed plasterboard ceilings generally in acceptable condition (Store 2 hole in left corner)
 - Generally concealed electrical and electronic installations.

Recommended action:

- Embossed wallpaper ceiling: Remove damaged ceiling wallpaper, fill and sand the t&g boarded ceiling, prepare and apply new embossed ceiling wallpaper (pattern to match existing) and paint as recommended.
- Boarded ceiling with cover strips: Remove existing, re-align batten structure, and replace to match.
- Pressed metal ceilings: Careful restoration of pressed metal ceiling required in limited areas and around services.
- T&G ceilings - Assess the economics of restoration or replacement of t&g ceilings.
- Plasterboard ceilings
 - Lounge & Irma's Hall: ceilings in fair condition, can be retained unless service installation results in replacement.
 - Passage, Irma's Bathroom and Store 1: ceilings to be removed, services installed, and ceilings replaced to match original.
- Timber ceilings & beams: To be cleaned and repolished with beeswax or similar.
- Ceilings in outbuildings: Repair/replace damaged ceiling tiles in Kitchen. Determine if Heraklith contains asbestos and replace if necessary.
- Cornices and picture rails: Check, repair, restore and replace where necessary.
- Inspect for borer beetles and fumigate roof voids.



(Dining Room) Embossed wallpaper coming loose, to be restored or replaced to match

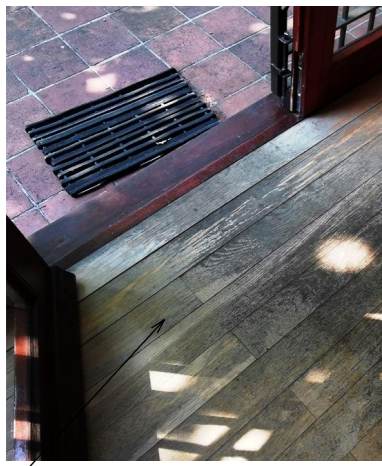


Gnd Floor - T&G ceilings to be restored & services rationalised

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



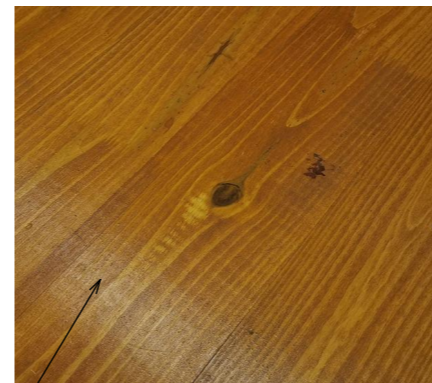
Reception room floor damage



Epoxy floor failing in Store 2 & Kitchen



Store 1 floor screed cracked, damp, no dpm



Irmas Studio floor - new SA Pine, poorly finished and structure failing



Patchwork repairs to first floors



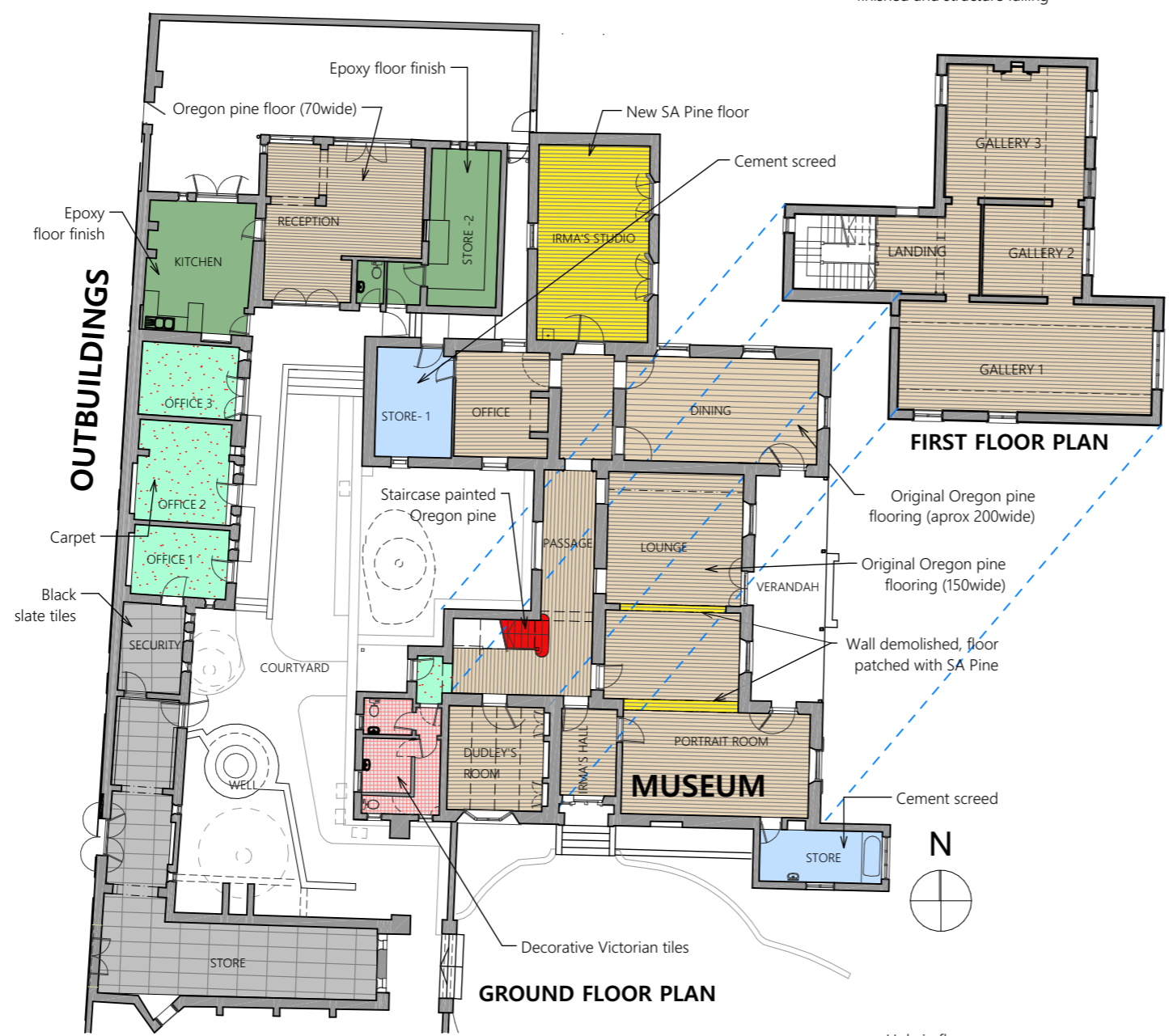
Slate tiling in previous entrance hall



Detail at Zanzibar door threshold



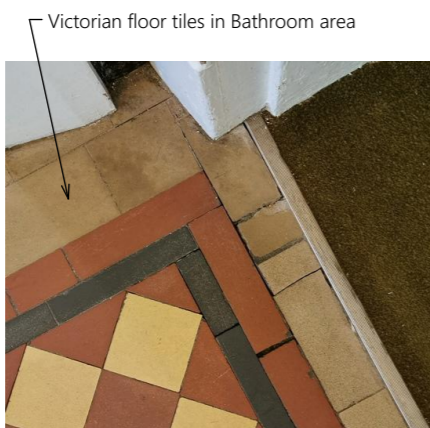
Staircase painted.



OUTBUILDINGS

FIRST FLOOR PLAN

GROUND FLOOR PLAN



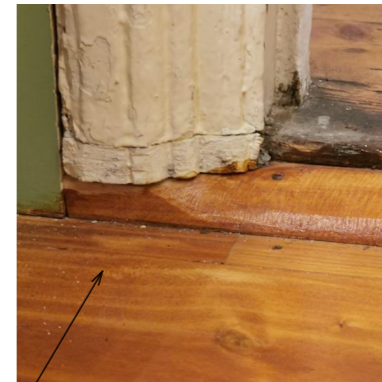
Victorian floor tiles in Bathroom area



Patched floor where Irma's bedroom wall demolished



Hole in floor



Detail of floor at door threshold



Gap between floor and skirting, indicates floor subsiding



Loose floor boards in Dining Room

Building envelope - Floors

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The floors of the Museum and outbuildings are in fair condition overall. Some repairs, maintenance, improvements, and investigations are required to make good the defects, and to ensure structural compliance. The cement floor in Store 1 poses a severe risk to the safety of the collection. The following defects were noted:

- Timber floors:
 - The timber floor in the Studio was recently replaced. The floor is sagging in several locations indicating inadequate floor structure. The pine floorboards do not match the original floors in width, and have been poorly coated with polyurethane.
 - Some repairs to the original Oregon Pine flooring are required in various rooms on ground and first floors.
- Timber staircase:
 - The staircase treads and risers have been painted white, requiring ongoing maintenance and unnecessary wear and tear to a staircase which would originally have been carpeted to protect the stairs.
- Cement screed floors:
 - Store 1 floor is cracked with large damp areas indicating the absence of a damp-proof membrane (dpm)
- Epoxy floor finish:
 - Store 2 and Kitchen - The epoxy floor finish is cracking and bubbling due to the poor substrate layers and/or rising damp (possible absence of a dpm)
- Victorian decorative tiles:
 - Some repairs required in the bathroom area.

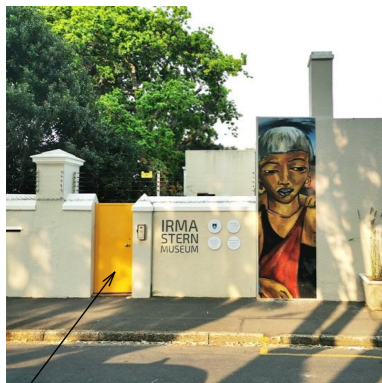
Recommended action:

- Timber floors and staircase:
 - Irma's Studio: Install trap door to access floor structure. Repair floor structure and consider covering the floor with vinyl sheeting to match the original.
 - Form trapdoors in the various rooms with original Oregon Pine floors, to allow for access to repair and inspection of floors for borer beetle.
 - All timber floors to be repaired, sanded and sealed with an approved high traffic sealant.
 - Timber staircase: Assess alternatives for the appropriate restoration of the staircase.
- Cement Floors: Storeroom 1 floor to be demolished. New appropriately finished concrete surface bed to be laid with dpm to specification.
- Epoxy floor finish: Remove existing epoxy floor finish in Kitchen and Store 2. Investigate the cause of epoxy failure and make good. Relay new floor finish

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

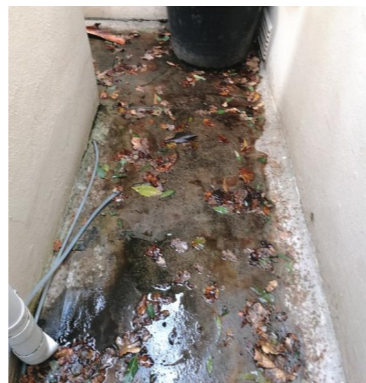
DESIGN MATTERS ARCHITECTS



Museum (tradesman's) entrance. Is this the best place to enter?



Street elevation with entrance at the end



Views of service alley - posing a major risk to flooding of the Museum



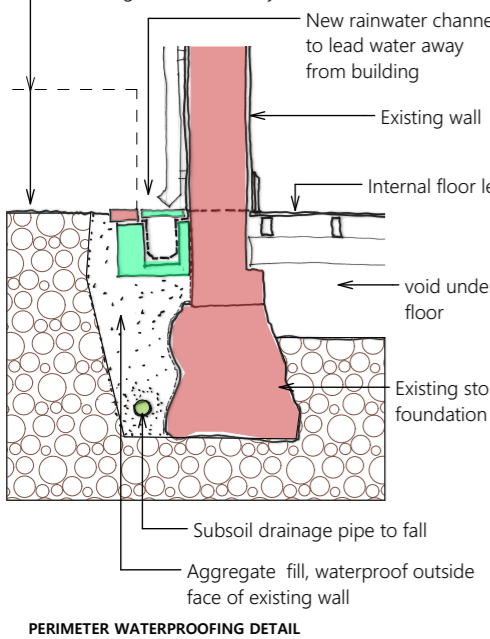
Single outlet point in service alley risk of flooding if blocked

Unightly razor wire visible from entrance courtyard



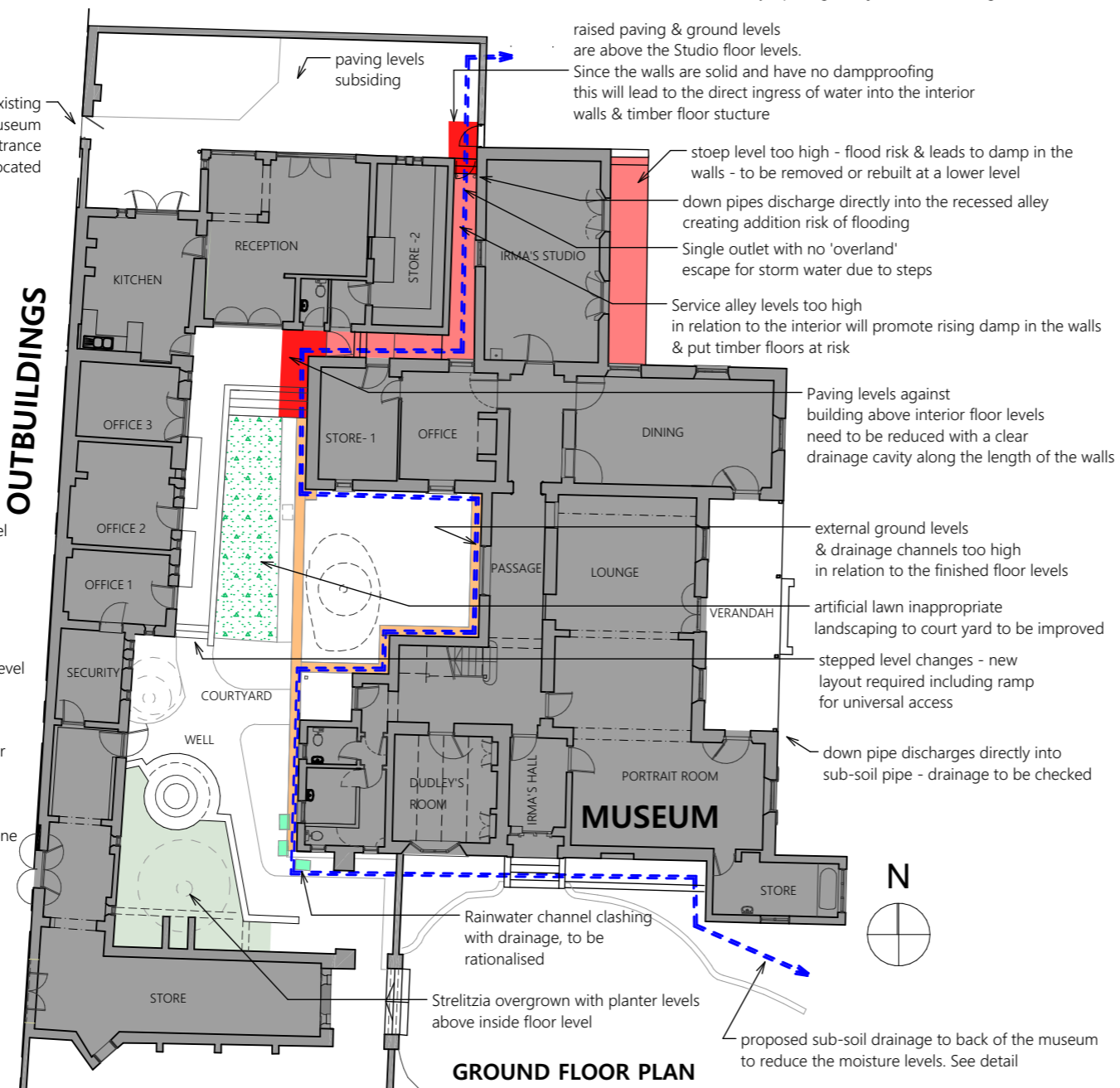
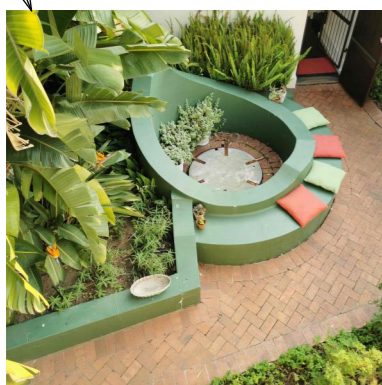
existing Museum entrance poorly located

External ground levels vary



PERIMETER WATERPROOFING DETAIL

Overgrown strelitzia damaging walls. Old well to be restored, unsure when these seat walls were built

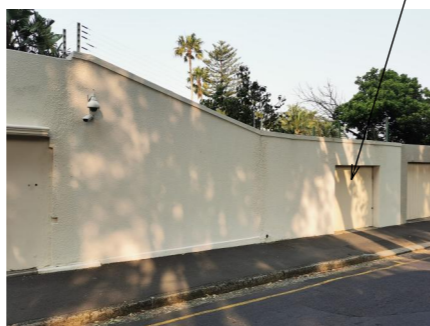


GROUND FLOOR PLAN

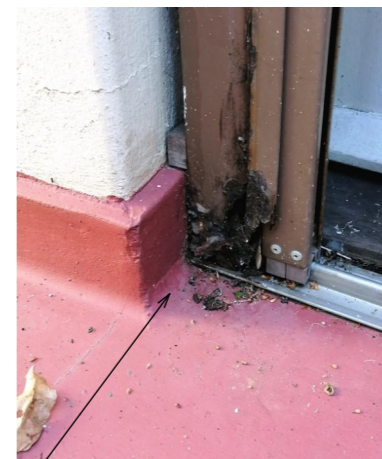
Rainwater channel clashing with drainage.



Garage door a security risk



view from the original entrance driveway, possibly a better entrance to the Museum



Corrosion of security shutter



soil levels too high in relation to the internal floor levels

generally the down-pipes & storm water disposal needs to be upgraded to avoid excess moisture around the structures



External Works

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

There are several problems with the external gardens, landscaping and paved areas which contribute to rising damp, potential flooding of the Museum and require ongoing maintenance. These problem areas put the collection at risk and are listed below:

- The raised paving levels (indicated in dark red) against the Museum corner at Store 1 and against the Museum corner at Irma's Studio are approximately 600mm higher than the internal floor levels, contributing to the rising damp and risk of water ingress to the Museum.
- The level of the service alley (indicated in light red) between the museum and outbuildings is too high in relation to the internal floor levels, again contributing to damp problems in the interior. The single stormwater outlet with no overland escape poses serious risk of flooding of the museum should it become blocked.
- The external ground levels (indicated in orange) on the western courtyard side of the museum are too high in relation to internal floor levels contributing to rising damp and risk of water ingress to the Museum.
- The stoe off Irma's Studio is too high in relation to internal levels, contributing to dampness in the walls.
- The overgrown strelitzia next to the well is causing damage to the well and coach house. The planter levels are higher than the internal floor levels.
- Rainwater downpipes discharge directly into subsoil pipes, which, if blocked, will backup and overflow at roof level damaging the Museum building.
- Museum courtyard stormwater and sub soil drainage systems inadequate, with water accumulating after rain on astroturf.
- Row of trees on the other side of Cecil Road are a fire hazard.
- Wooden garage door in Cecil Road is a security risk.

Recommended action:

- Rational design required to reticulate groundwater and stormwater away from the Museum.
- See annotated sketch detail suggested to mitigate water ingress to the Museum. New perimeter agricultural drain and storm water channels along Museum external walls (indicated as a double blue hidden line on Plan)
- Redesign the landscaping to the Museum courtyard, restoring the earlier character and patina and providing universal access to all areas.
- Demolish Irma's Studio stoe and rebuild at lower level, min 150mm below internal floor levels.
- Garage door to be upgraded to secure opening.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



Difficult access into Store 2, & insecure being directly from the outside



Example of correct storage in the new drawer units. Too few drawer units



Failing epoxy finish to floor in Store 2



Artworks stacked on the floor due to the lack of space



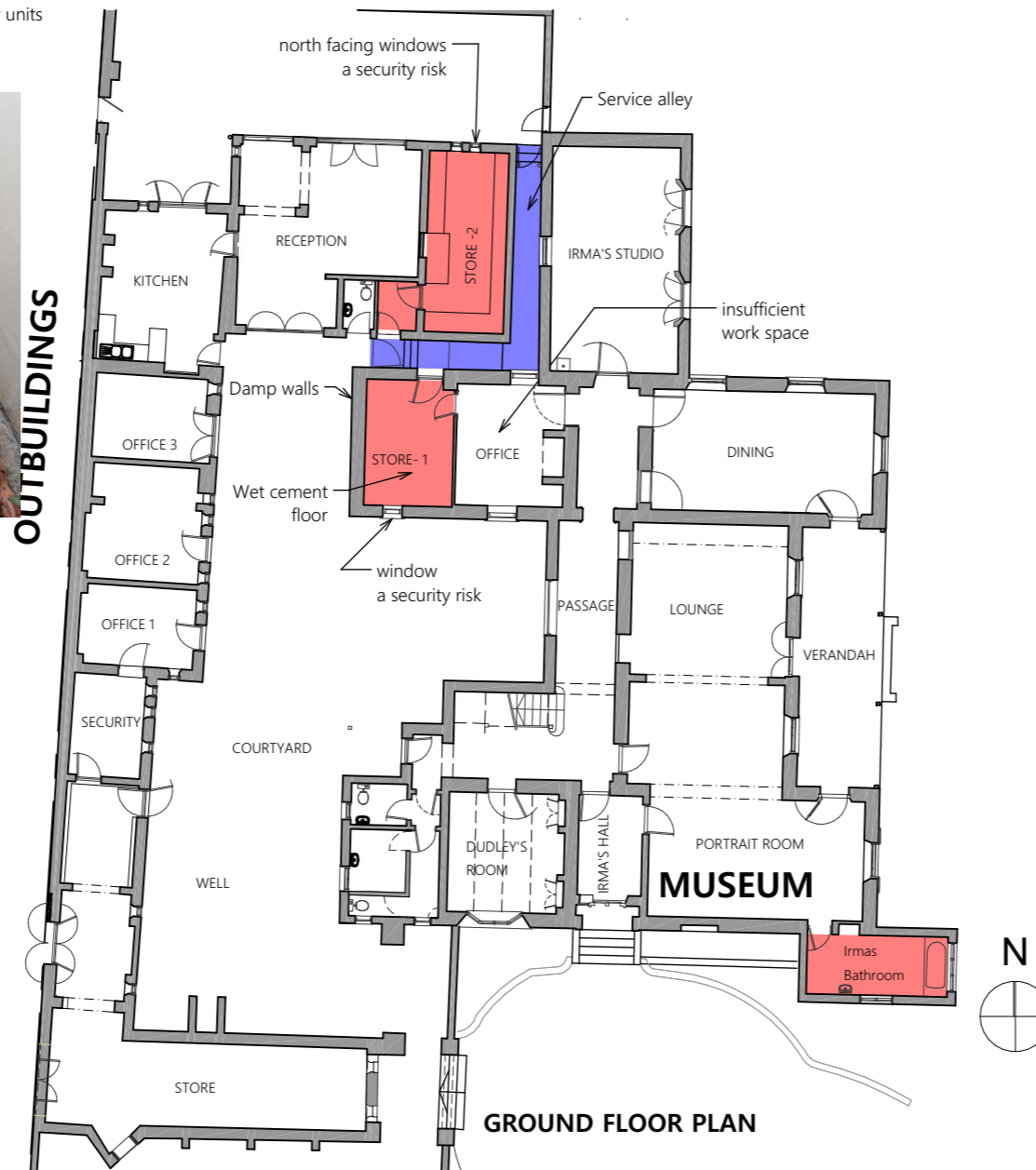
Example of the new sliding artwork racks



Storeroom 1 and 2 are both accessed from service alley. If alley dams up due to blockage of single floor outlet, Museum and Storeroom 1 will flood.



OUTBUILDINGS



GROUND FLOOR PLAN



External access into Store 1 is very insecure, vulnerable to the environment & water ingress. Floor visibly damp



Window allows UV light into the store & is not secure



Store 1: Artifacts on open shelves gather dust & can not easily be handled



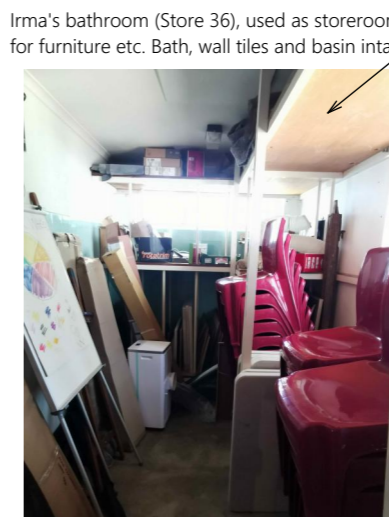
Wall mosaics in Irma's bathroom



Store 1 is unsuitable as an Archive store. Too small, excessive damp with visible water seeping through the cracked, screeded floor. Inadequate and unsuitable storage units. Dusty, mouldy and insecure



Store 1 ceiling water damaged, poor wiring inappropriate shelving, external door



Irma's bathroom (Store 36), used as storeroom for furniture etc. Bath, wall tiles and basin intact

Storage and archive

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The existing storage rooms in the Firs are, in their current conditions, unsuitable for the housing of the collection, and as a result all the items currently stored are at high levels of risk due to following conditions:

Storeroom 1:

- Floor surface and walls are all wet to touch, resulting in a damp and cold interior.
- External ground levels are higher than interior, causing damp ingress.
- Roof insulation was not inspected.
- The security gate and bars fitted to the external door and window are inadequate, posing a security risk.
- The door has no rebated doorsill at threshold allowing moisture ingress. (Despite the fitting of the door seal)
- The electric light is linked to the adjoining room and is left on in office hours -storeroom should be dark.
- Storage shelving for paintings and artefacts is inappropriate and unsuitable, and the storeroom is cramped.
- Fire detection in place, inappropriate fire suppression system.
- Window - Block out blind fitted.

Storeroom 2:

- More suitable than Storeroom 1, although also dimensionally too small.
- Smells of damp on entry, signs of damp ingress in the floor where epoxy is lifting.
- Dehumidifier plumbed in, good shelving and storage system.
- Interior cold, roof insulation not confirmed.
- Fire detection in place, inadequate fire suppression system.
- Windows - Block out blind fitted.
- Proximity of WC next door to Store 2 a flood risk
- The external service alley is blocked at both ends and there is a risk of flooding if the single stormwater outlet became blocked.

Irmas bathroom:

- Currently used for storage of furniture, and other consumables.
- Cement screed floors with damp walls.
- Ceiling poorly repaired
- Not suitable for storage of artworks in current condition

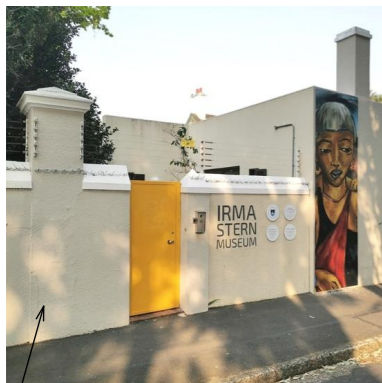
Recommended action:

- The conditions of Storerooms 1 & 2 are unsuitable for the safe and sustainable storage of the Collection.
- The Collection stored in both storerooms should be moved to an appropriate temporary storage facility until a new permanent store, suitably sized, is found.
- Storeroom 1 to be restored and repurposed, possibly incorporated back into the Museum as a display space.
- Similarly, Storeroom 2 to be repurposed.
- The WC next to Store 2 to be relocated.
- Irma's bathroom: Repurposing options to be investigated:
 - Restore to the original bathroom (and convert to a bathroom facility for persons with disabilities)
 - Convert to a fireproof strongroom for safekeeping of artworks in an emergency.
 - Convert to a new entrance.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



security & access control installations at the main entrance are unsightly



fire extinguishers are inadequate fire control & will damage the artworks



fire hose reel in passage - NB water as a means of fire fighting will be catastrophic for the artworks



Inadequate emergency back up power system



Store 1- multiple & redundant cables for data & other services are poorly installed and can not easily be maintained in the current layout



Server unit in Store 1 poorly installed, propped up on the shelving unit. Required routine maintenance will grant service agents access to the archive



Unsightly surface mounted trunking and exposed wiring.



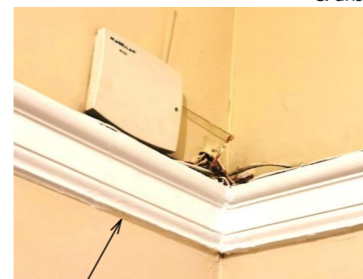
Multiple external surface mounted conduits



Municipal electrical box on Cecil Street vulnerable to vandalism



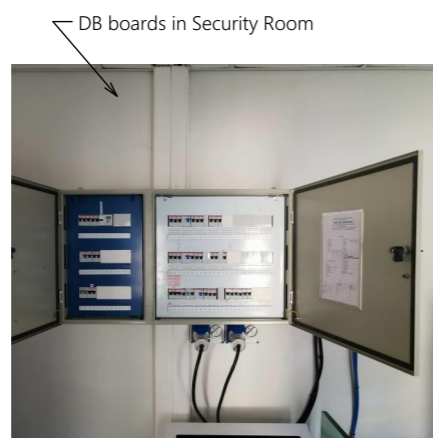
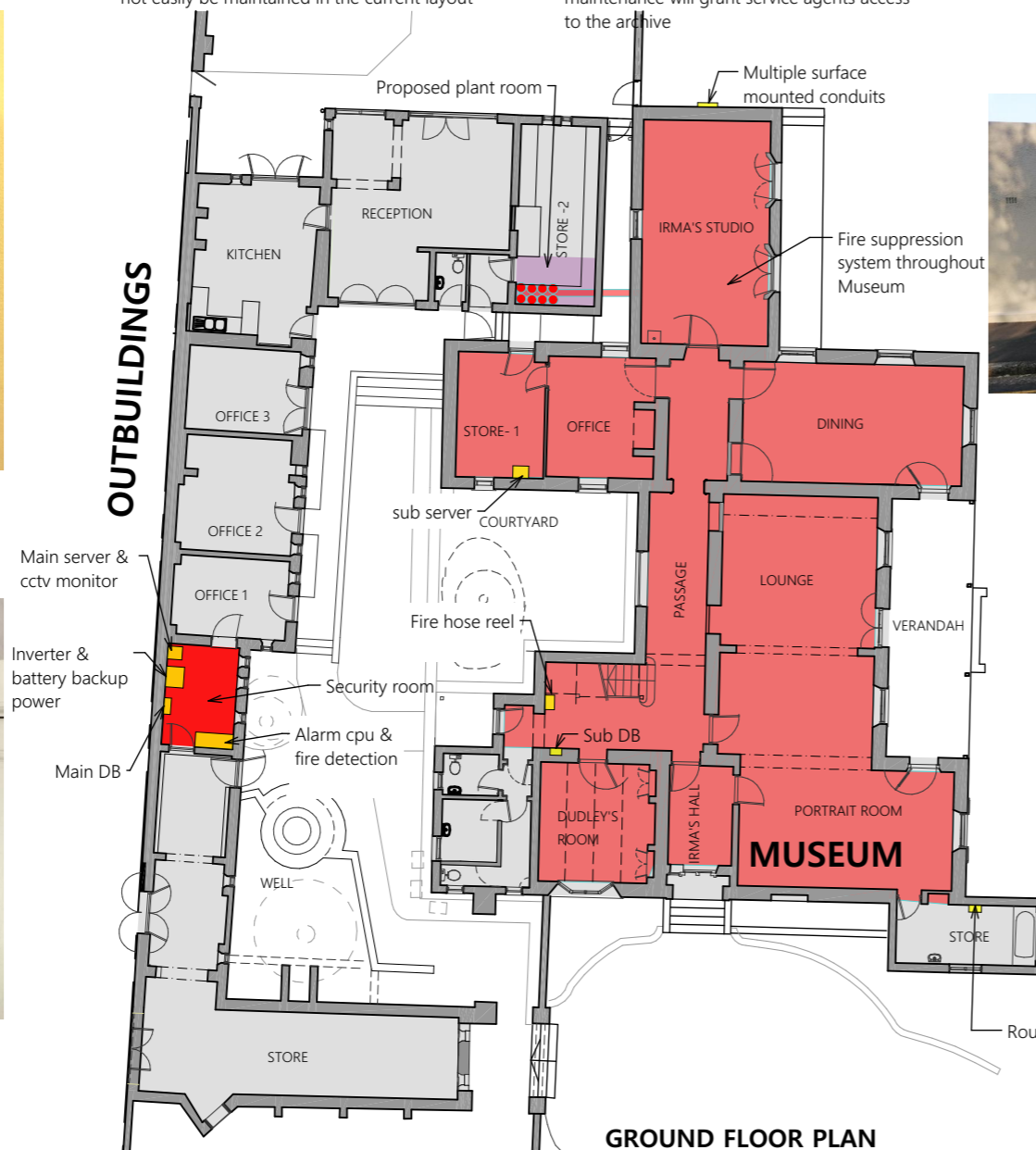
Example of repeated surface installation of electrical & security installations, destructive to the building finishes & unsightly in the context of the museum



Visible wiring and extender



Existing fire detection and security systems some appear redundant



DB boards in Security Room



Surface mounted service installations on the 1st floor with layers of redundant wiring



Router exposed and vulnerable



Electrical, electronic, and emergency services

Risk factors affecting the safety and preservation of the Irma Stern collection:

Assessment:

The existing electrical, electronic, and emergency service (fire and security) installations at the Museum are a major concern and risk to the safety of the collection for the following reasons:

- The internal and external surface mounted wiring, trunking and conduits, added, changed and extended over time to power the necessary lighting, fire detection, data, sound and security systems throughout the Museum has resulted in a tangled unmaintainable eyesore. The risks include the possibility of fire and failure of emergency equipment and services due to non-compliant and faulty electrical junctions and splices. Conduits mounted to walls externally allow for the ingress of water through openings and fixings further dampening the walls.
- The firefighting equipment (fire extinguishers and fire hose) provided is inadequate and unsuitable as it will cause extensive damage to the collection itself if used.
- Is the fire alarm directly linked to the fire station or campus security?
- Emergency power backup system comprises 2 x 100Ah lithium batteries and a small inverter.
- The Municipal electrical box in Cecil Road, secured with a padlock, is vulnerable and mains electrical supply can easily be cut off placing Collection in danger.

Recommended action:

- Appoint suitable consultant/s to inspect and provide a rational design for the electrical, electronic, and emergency services including fire detection and suppression, security system and access control.
- Allow for fire suppression system for protection of fine art: Hi-Fog high pressure water mist system.
- The existing fire detection system to be tested and assessed for compliance, (some equipment & fittings may be suitable for re-use)
- All existing exposed electrical and electronic installations and redundant services will need to be removed and new rationalised and compliant systems installed, concealed within the walls and ceiling voids.
- The existing electronic and electrical fittings may be re-used if they are suitable.
- Electrical and fire compliance certificates to be obtained.
- The emergency power backup system needs to be assessed. Ideally the system needs to be adequate to provide backup power to the fire detection systems, security and alarm systems, computer and data systems and emergency lighting as a minimum.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



High UV and light levels, and insufficient artificial lighting



Blind and window open



UV and lux levels to be investigated



Data connection exposed and vulnerable



The quality of interior lighting is poor, gallery type lights are not coordinated with the historical fittings



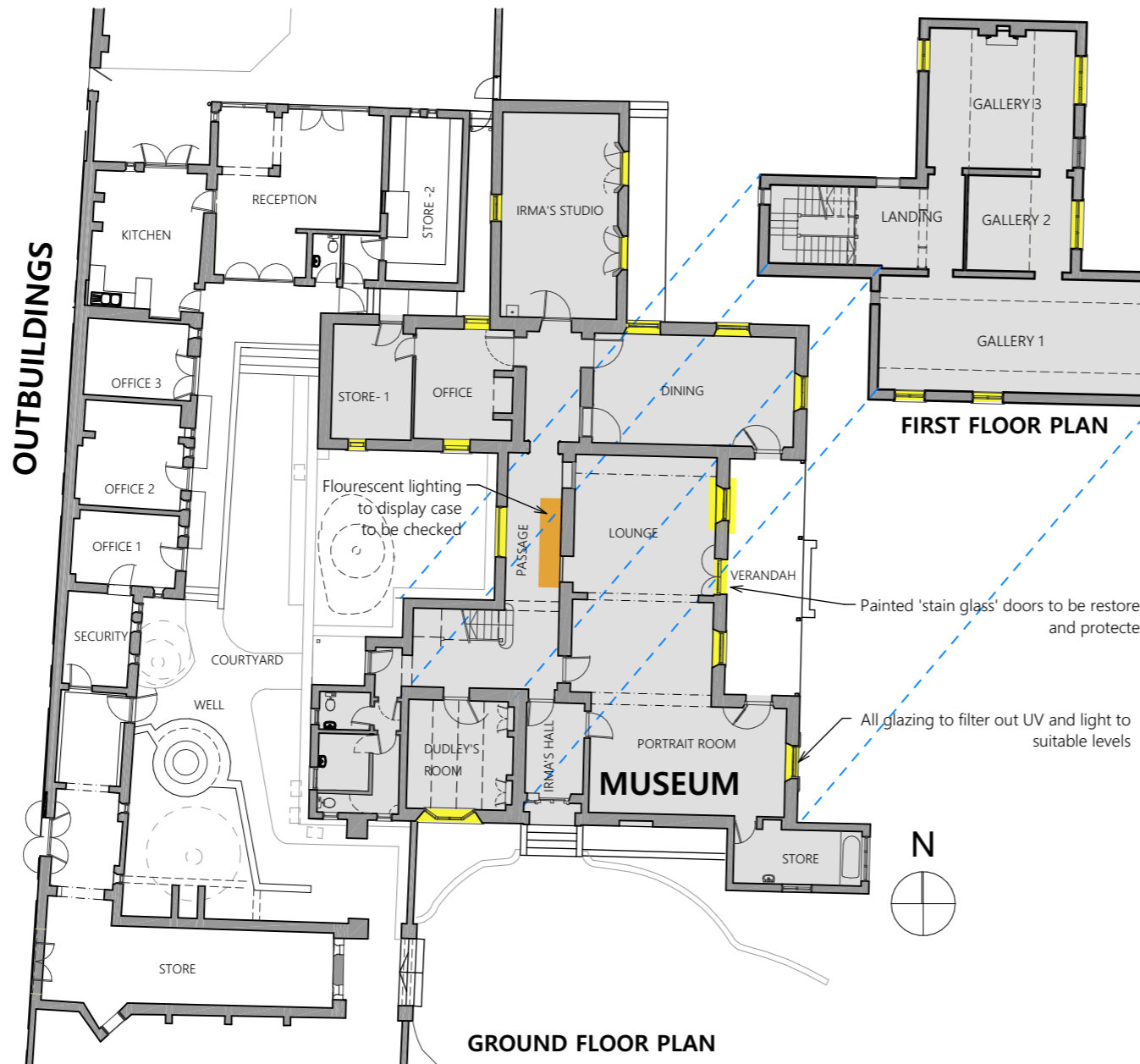
West facing window in Irma's Studio, UV and light levels concerning



Bay window in Dudley's Room with UV blind



Curtains in Lounge



OUTBUILDINGS

FIRST FLOOR PLAN

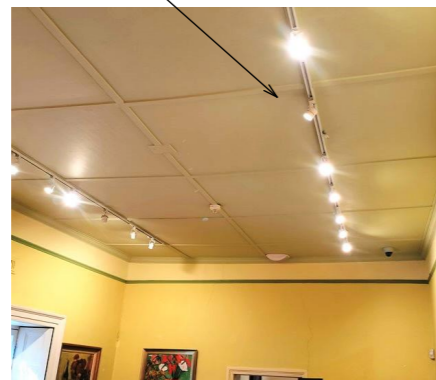
GROUND FLOOR PLAN



uncoordinated layout of lighting, alarm & fire installations to the 1st floor degrade the ceilings



Check if blinds fitted are UV resistant



Check lighting levels and suitability of existing fittings



Uneven quality of artificial lighting in main display space



Natural and artificial lighting

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

No natural or artificial lighting levels were taken. Lighting levels were recorded in 2021 indicating lux levels above 300 and high UV levels in several of the display rooms.

- Blinds and curtains have been fitted to several of the windows, but little evidence of UV or light reducing protective film on any of the windows or glazed doors.
- The quality of artificial lighting in the Museum is varied and inconsistent. Display rooms have a combination of central pendant or bulkhead type light fittings giving general light to the room with track mounted spotlights illuminating the artworks.
- Light switching is generally controlled at the original light switches in the various display rooms.
- Display cases in the passage are lit by fluorescent lighting the level of which must be measured.
- The exposure of the artworks to high light and UV levels over long periods of time is of serious concern and will lead to irreversible damage.

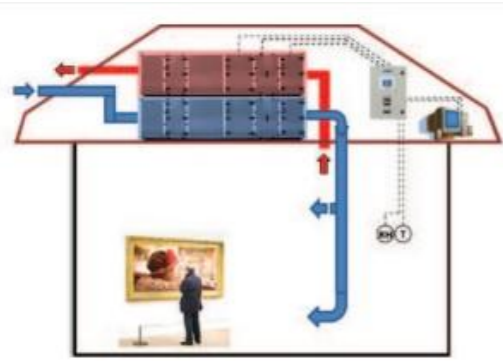
Recommended action:

- A lighting consultant to prepare a rational artificial lighting design meeting the required lux level range of between 50 and 100. An automated lighting control system with light and movement sensors may be required to maintain constant lux levels.
- Light (lux and UV) levels to be taken and recorded in all display areas over a period to better understand the current conditions.
- Allow for a suitable UV and light reducing protective film to be applied to all glazed windows and doors in the display rooms reducing the UV levels to maximum of 75 microwatts per lumen (except for Irma's painted 'stained glass' windows in the Lounge).
- Irma's original light fittings to be restored if required and retained in original positions.
- All other light fittings to be replaced unless deemed suitable for re-use by the specialist.
- Fluorescent lighting levels to be checked in passage display cases.
- Light level monitoring routine to be part of Museum operational plan.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



Installation of the environmental control system will require considerable intervention, careful reticulation and design to ensure it does not clash original Museum interior

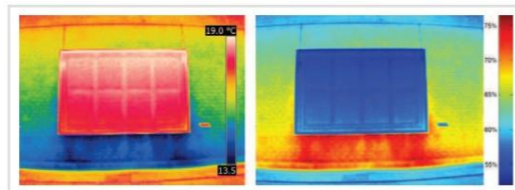
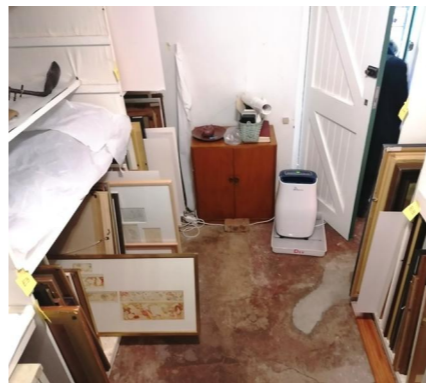


Figure 7. Example of a seventeenth-century painting hung on an un-insulated external wall in a museum that is conditioned to 20 °C and 50 % RH. The thermal image shown left, is taken during winter time. Clearly visible is the cooler surface under the painting. The right image shows a hygrograph with the calculated surface RH of the same situation. It can be expected that the RH behind the painting is well over 75 %

and room air. Registered temperature and RH should be coupled to an automated alarm function, so that in the case of specific values exceeding or undershooting a set bandwidth, an alarm, via email or text message, is generated to the museum's facility manager or directly to the maintenance company.

As well as monitoring via the BMS, it is essential to monitor indoor climate conditions with a stand-alone wireless monitoring system that is also capable of generating alarms if conditions fall beyond the desired boundaries.

External wall temperatures in the Museum fluctuate between seasons, resulting in too high RH levels behind the painting, even if Museum is ideally conditioned.



Store 1 -The freestanding dehumidifier restricts the normal use of the space



Dehumidifiers installed do not guarantee stable RH and temperature levels.



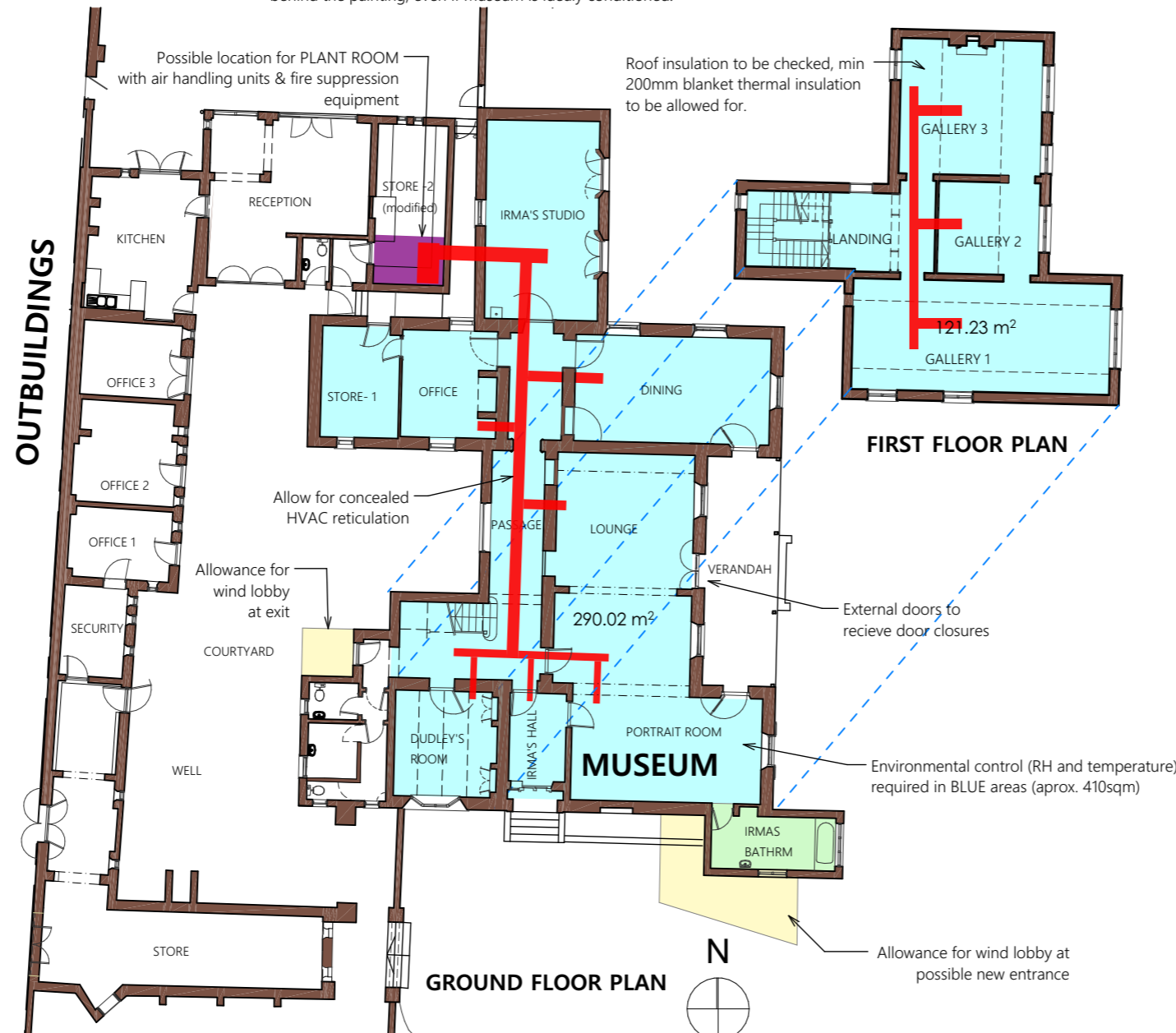
Examples of artworks damaged from damp and poor environmental controls



The dehumidifiers are an inadequate long term solution to environment control



Opening windows not suitable for environmental control



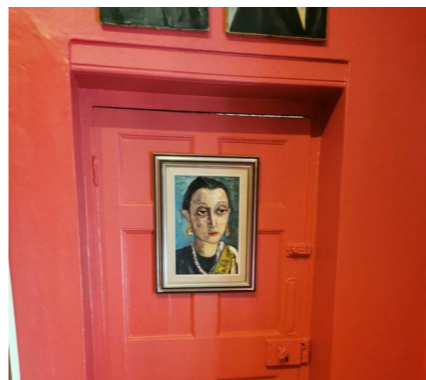
Main entrance door open



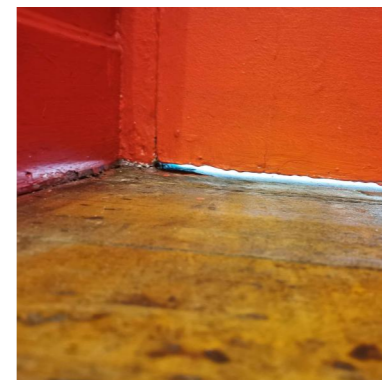
Possible 'wind lobby' entrance to Museum to assist environmental control



Gaps between door and frame



Gaps under door allow drafts through to interior



Environmental controls

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The Museum and storerooms have inadequate technical and environmental controls in place due to the following:

- Windows and doors are left open in the museum during office hours, for ventilation and access. Reducing the efficiency of the installed dehumidifiers, with high RH levels of above 70% being recorded.
- Gaps in windows and doors allow for uncontrolled drafts and dust to the interior, affecting the environmental control and increasing cleaning and maintenance.
- Dehumidifiers have been installed in the Dining Room, Lounge, portrait room and the passage to stabilise the RH levels and lower moisture content.
- Load Shedding causes the dehumidifiers to stop working, resulting in increase in RH levels.
- Storeroom 1 RH levels fluctuate due to the door being opened to access Store 2.
- Dehumidifiers in the house are not plumbed in and must be emptied. When they are full, they turn off automatically, and remain so at night and during the weekend.
- Temperature levels as with RH levels, are unstable and reflect the outside conditions.
- The unstable RH and temperature levels have and will continue to cause damage to the collection.

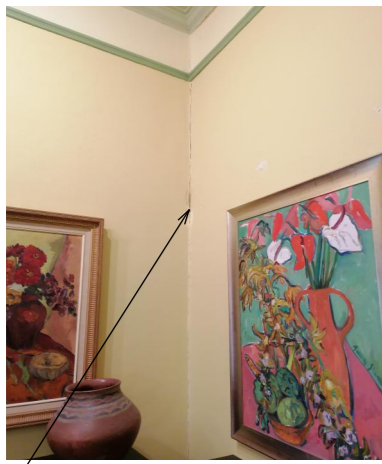
Recommended action:

- Due to the unstable environmental controls causing damage to the Collection it is recommended that the entire collection be moved to a temporary storage facility of safety.
- The dehumidifiers installed are a short term provision to improve the moisture levels in the display spaces. They are an inadequate long term solution and cannot maintain the constant RH and temperature levels required to ensure the safety of the Collection 24 hours a day.
- Appoint a consultant to provide a rational design for the appropriate environmental control system to stabilise the RH and room temperatures at acceptable levels to the Curator of the Collections specification.
- For costing allow for a Close control RH and temperature control system including pressurisation and high efficiency filtration, as well as additional sound attenuation to ensure all requirements are met to preserve the Collection.
- The design should provide the ability to control RH and temperature for the best long term storage requirements and eliminate dust ingress to the space, whilst maintaining a quiet environment.
- Windows and doors to be sealed, with auto closures fitted to external doors, and preferably wind lobbies at Museum entrances and exits.
- An environmental monitoring routine to be part of the Museum's maintenance and conservation plans.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS



Paintings on display with structural cracking in corner and ongoing repairs to plaster in Irma's Studio



Paintings mounted too close to wall corner, vulnerable to damage ...not enough wall space?



Artifacts on stairwell vulnerable to damage, theft



Glass cabinet in passage dominates, making circulation awkward



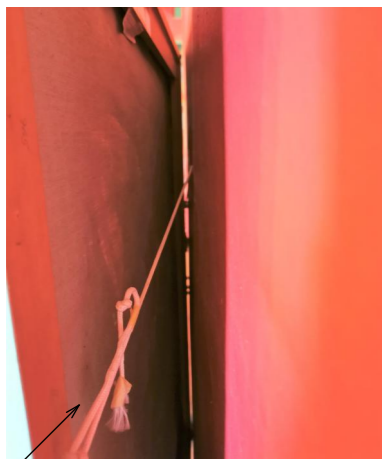
Dehumidifier blowing hot air onto artwork



Artefacts display in Irma's Hall

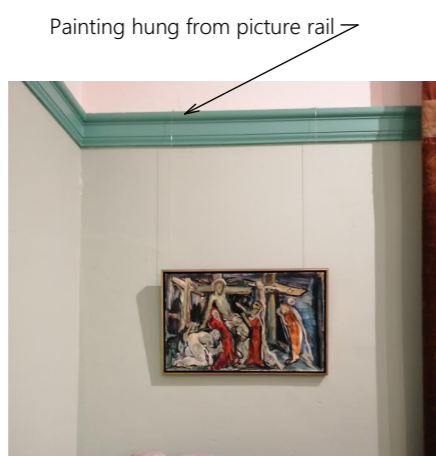
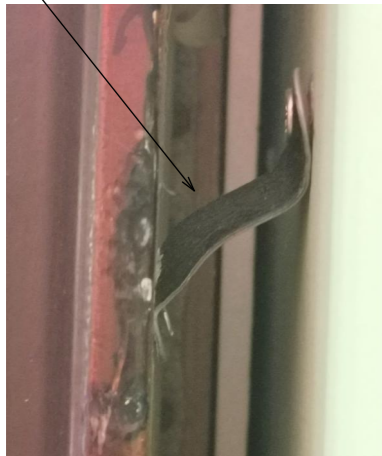


Most artworks are displayed on external walls vulnerable to temperature changes and high moisture content in walls

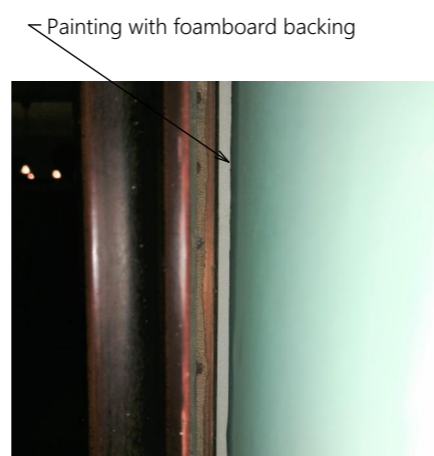


Painting hung with cord and picture hook

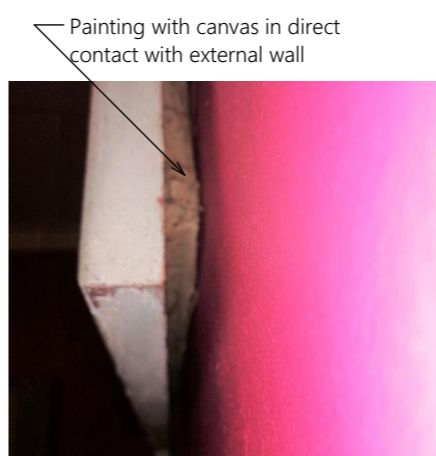
Painting screwed to wall with swivel bracket



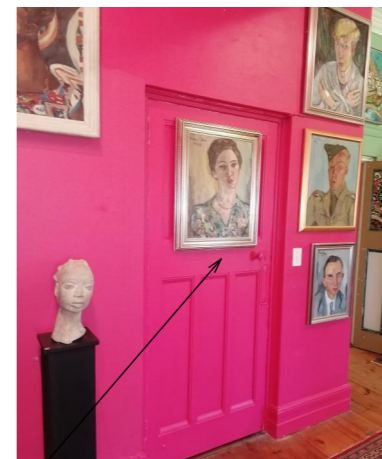
Painting hung from picture rail



Painting with foamboard backing



Painting with canvas in direct contact with external wall



Painting on door due to lack of wall space for display

Painting hung on external door note gap to exterior



Art and artefact display

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

The artworks are affixed to the walls using an assortment of picture hanging devices.

- Some paintings are screw fixed to walls with adjustable hangers, others are loosely suspended with cord on hooks.
- Some paintings have a backing board, as a protective barrier between wall and canvas, most paintings do not, with canvas in direct contact with wall surface.
- One painting is hung on the verandah door which has large gaps to the outside.
- Paintings on doors and mounted close to wall corners vulnerable to damage, possibly result of lack of wall space.
- An artwork is hung directly above large dehumidifier blowing hot air up and over, concern about this proximity.
- The available wall space for display is limited due to damp areas and insecure, hollow plaster on the walls.
- The glass display cabinet in the passage is too deep, compromising circulation in the Museum and has relatively few objects on display. Lack of consistency in the way artefacts are displayed.
- No security devices or alarms were noticed on any of the artworks.

Recommended action:

- Investigate and select appropriate and flexible picture suspension systems allowing for the secure display of art at different levels on the walls.
- Repair, restore and replace all picture rails.
- Reconsider the display cabinets used for the artefact collection. Investigate custom design options appropriately scaled and made to suit the interior.
- Display security: Investigate security alarm alternatives for alarming the individual artworks.
- The display on the stairwell wall is very vulnerable. Passersby can very easily touch, bump or steal..
- The addition of interventions to enhance the museum experience such as black board paint on windowsills require systematic rethinking in terms of the museum programming.
- Investigate glass in front of artworks to protect against vandalism.
- Investigate use of replicas/archival photographs/technology in displays.

IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS

Spatial analysis

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Assessment:

- The visitors' spatial experience of the Irma Stern Museum is limited to the back entrance, the courtyard, and House Museum. (See dotted line on Plan)
- The entrance sequence through the 'back yard' and old back door is an awkward and confusing experience for the visitor.
- Only the adventurous visitor will discover the beautiful gardens so intrinsic to the house. The full landscape experience and potential is not realised.
- The original entrance gates, approach driveway through the gardens to the forecourt and celebrated entrance through the Zanzibar door are missed by most.
- Access and toilet facilities for persons with disabilities are not provided.
- The Curators office and Storeroom 1 located in the 'old kitchen and pantry' limit potential display space and the house experience.
- The ground floor interventions made at the time of converting the 'house' to 'museum' were ill considered and significantly altered the spatial experience of the original house and reduced the display areas.
- The 'new' kitchen is large and appears under-used and equipped.
- The offices are only accessed from outside, making circulation difficult when it rains.
- The 'open space', 'artists in residence studio' and 'carport' areas appear to be underutilised.
- Bathroom and toilet facilities for Museum visitors and staff are inadequate.
- The storerooms for the Irma Stern Collection are too small and under equipped.



IRMA STERN MUSEUM

DETAILED ASSESSMENT & RECOMMENDATIONS

DESIGN MATTERS ARCHITECTS

Spatial analysis

Risk factors affecting the safety and preservation of the Irma Stern Collection:

Recommended action:

- Investigate existing provision of sanitary fixtures in terms of SANS 10400, provide adequate facilities for visitors & staff (including facilities for persons with difficulties) Convert Storeroom 2 to new WC's and Plant Room
- Investigate viability to possibly convert the existing reception area (Coral Room) into a Museum café with the attractive north facing treed courtyard and re-configure the kitchen and fitout to suit.
- The three administrative offices may function better if linked directly to the Museum, recommend installation of a glazed, covered walkway.
- Restore the old kitchen and pantry and re-incorporate into the Museum, possibly for the dedicated display of Irma's artefact collection.
- Provide access to all levels for persons with disabilities - add lift.
- Investigate design options to restore Irma's bedroom by rebuilding the internal wall between bedroom and lounge. The resultant enfilade of rooms is a blank canvas for a renewed curatorial approach.
- Investigate design options and solutions to improve the spatial sequences of entering, viewing, and exiting the Museum taking advantage of the unfolding series of spaces and gardens. Possible new entrance to Museum with lift to all levels.
- Space available on site to construct a secure storage facility and Curators office for the Irma Stern Collection

