

# Revel Fox & Partners

## Architects and Planners

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### **HERITAGE APPLICATION TO UNDERTAKE EMERGENCY RESTORATION INTERVENTIONS TO FIRE GUTTED HOMESTEAD BUILDING ON THE NON-PAREILLE FARM**

#### **1. INTRODUCTION**

##### 1.1. This Report Provides:

- i) An indication of the state of the Homestead building gutted by the fire in June 2019 resulting in severe damage to structures recognized to be of very high heritage significance.
- ii) An indication of the nature and extent of remedial works proposed as acceptable from a heritage best practice perspective. The purpose of this work is to minimize the loss of further historic fabric, consolidate such surviving fabric, and undertake restoration interventions to recover heritage significance wherever possible.
- iii) Guide specifications for mortars, renders and masonry crack stabilization measures to be used on site.

##### 1.2. Methodological Basis and Focus of this Submission:

This report is a consequence of site inspections, and subsequent follow-up work. This motivation is based on the premise that the rescue interventions and reconstruction will need to be informed by close on-site evaluation as work progresses, rather than drawings and other detailed documentation prepared at this stage.

The Homestead is the subject of this application (read in conjunction with the plan no:101)

The affected building was inspected both externally and internally and a photographic record prepared, key samples of which are included in this document.

Certain aspects of the work will require the input of a structural engineer with suitable heritage experience.

#### **2. SUMMARY OF KEY FINDINGS.**

- i) Although the affected building was almost completely gutted by fire leaving only walls standing, the nature of their construction is such that most remains appear structurally stable and capable of rescue and rehabilitation. There are, however, instances where emergency propping is clearly required especially to the gables to provide temporary stabilization. The exposed wall caps are prone to rain exposure especially in the winter months.
- ii) Most of the historic remains examined revealed a high proportion of surviving vernacular building material including sun baked bricks, lime mortars and renders. The traditional bricks have survived the fire well with minor laitance on exposed surfaces.

#### **3. GENERAL HERITAGE APPROACHES UNDERPINNING THIS REPORT**

It is strongly recommended that following principles underpin all restoration work conducted on the subject buildings and their immediate contexts:

i) Demolitions as a Last Resort: Demolitions are to be considered only as a last resort for all significant surviving remains and/or where specific demolitions would result in the recovery of heritage significance. Where demolitions are unavoidable, attempts are to be made to recover as many historic bricks and other masonry materials as possible for re-use as part of the reconstruction process. This is for reasons of retaining authenticity and fabric performance compatibility.

ii) Re-use of Surviving Historic Elements: All sound surviving joinery (door frames, window frames, architraves, skirtings, flooring, ceilings) that survived the fire, are to be reused in their original locations, wherever possible, and as part of the reconstruction program. This means that fire debris must be sifted during clearance processes to ensure the recovery of as many surviving historic elements for re-use as possible. The locations of all such recovered elements are to be recorded for reinstatement purposes.

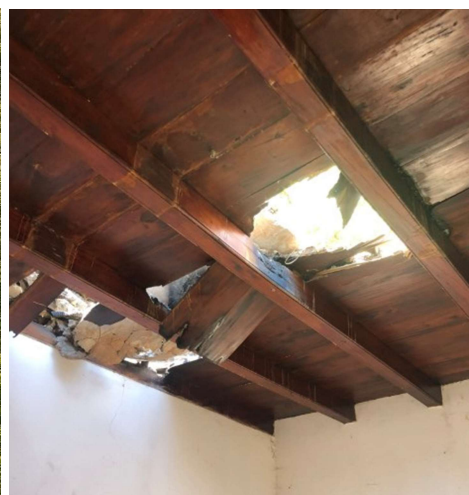
iii) Physical Compatibility of New Materials: Only traditional and other materials physically compatible with the surviving fabric are to be used for reconstruction purposes.

iv) Replication of Pre-existing Elements: Replacement materials and elements are not to be exact copies of pre-existing elements, nor do replacement materials necessarily need to be the same as what pre-existed, provided that replacement elements are aesthetically compatible and respectful of historic character, scale and proportion. This is not only to realistically contain costs, but also to avoid confusion in later years between what is historically authentic and what is 'new'.

v) Insertions for Reducing Future Fire Risk: New insertions and additions will be justified where such interventions will reduce future fire risk to historic fabric, provided that such interventions are respectful of historic character and minimise physical impacts on the integrity of surviving historic fabric.

#### **4. CURRENT STATUS: KEY POINTS**

i) The entire roof structure (thatch and trusses) are completely lost due to fire damage. What appears to be yellow wood tie beams and ceiling boarding in the south east wings could be salvaged and re-used.



ii) Walls substantially intact with minor laitance on surfaces) – if anything, the clay bricks set in clay mortar have simply baked harder. Areas of now exposed but still-adhering clay scratch coats survive on portions of the wall surfaces.



iii) All gables are potentially dangerous – requires propping to stabilize.



iv) New thatch roof to be constructed with fire retardant thatch treatment and fire-retardant interlay. Existing end gables to be retained and tied back in accordance with the heritage engineer's spec. Truss structure to match that of the surviving elements and as per specs on drawing no 101.





v) New wall plates can be anchored in place using steel rods grouted into wall caps using a lime slurry/grout or other heritage endorsed alternative – all to the heritage engineer's spec.

vi) A sprinkler system is to be installed in the new thatch roof as a precaution against future fires.

vii) A brandsolder is to be installed. This will comprise min 75mm weldmesh and lime reinforced local clay or lightweight concrete on a dpm bond breaker on new timber ceiling boards on rafters to match existing. Rafters to be inserted into the holes left by the now burned away pre-existing rafters wherever possible. Where new holes are required, these are to be cut into existing historic wall fabric using diamond saws/angle grinders in order to create neat incisions with minimal damage to surrounding brickwork. The use of cold chisels, bolsters and other shock inducing equipment is to be avoided.

viii) Fire damaged wall surfaces are to be re-plastered/re-rendered (as the case may be) using only lime plasters (no Portland cement). Un-hydrated (i.e. unslaked) bulk builders lime and slaked on site as part of a proposed on-the-job heritage skills training program is recommended. Mixing of lime mortars and renders to be done using pan mixers (as opposed to drum mixers) to ensure thorough mixing of the lime mortars and renders with their component sands. No chicken wire is to be used as part of the re-plastering exercise. This is not only unnecessary but potentially problematic in the future. Structural cracks can, at the discretion of the heritage structural engineer, be reinforced/stabilized using weldmesh (preferably stainless steel – particularly on external wall faces) pinned in place behind the new plaster line using propriety stainless steel washers and drive screws set into nylon or other alkali-resistant plastic wall anchors.



ix) New timber fenestration and doors into their original openings as per door and window schedule. New joinery will be in an appropriate, well performing (weather-wise) and heavy section timber appropriate to the period of construction of the building (preferably a hardwood) and painted. New timber joinery to be dated and may include the carpenter's/joiner's initials on timber surfaces not readily visible without close examination, e.g. upper surfaces of casement rails and door leaves. Where lintels have collapsed, prestressed concrete lintels will be used where concealment behind the plaster line is appropriate. Where lintels are intended to be visible, these will be of timbers sized and profiled to match the new ceiling rafters, but traditionally laid on their long sides.





x) Timber floors (klaat parquet) are to be reinstalled where pre-existing



## 5. LIME HYDRATION (SLAKING)

New: Lime plasters are to be used for the re-plastering of repaired fire-damaged wall surfaces. No Portland cement is to be used generally: except in instances where plaster patching is abutting existing intact cement-plastered walls.

Mortar/ render mixes are commonly **1 part hydrated lime to 3 parts clean, sharp/coarse sand**.

Some clean local Clay may be added into mortar, plaster and render mixes in instances to improve adhesion and material compatibility e.g. where applying scratch coats to soft wall substrates.

NB: Too much clay with the sand will result in excessive plaster/ render cracking; the proportion of clay to sand should not exceed 35% by volume of the clay/sand mix). The clay must be added to the sand and well mixed through before mixing in the builder's lime.

## 6. RECOMMENDATIONS

Considering the observations and conclusions in this document, while appreciating the emergency nature of this application, it is recommended that this submission be approved in principle informed by the principles set out in this report and the model specifications of this report for interventions to the surviving fire damaged masonry fabric involved.