

29 May 2013

Avani-SA Consulting

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1 Eastgate Lane

Bedfordview

2007

ATT: Mr. Niraj Naamdhe

RE: O. R. TAMBO HOMESTEAD – TWO ROOMED DWELLING UNIT

Dear Sir,

This letter addresses the letter sent to you by SAHRA on the 16 April 2013, signed by Gregory Ontong. We respond to each item as itemised in the letter as comments from an independent engineer. Our reference drawing is 1200079/100/STR/100 REV-01. The same drawing will be revised to REV-02 to cater for comments made in the letter from SAHRA.

Items 1 & 2

These two items refer to drainage around the building. We confirm having discussed the use of the channel as detailed on the reference drawing with Mr. Ontong. We will therefore use what we have provided and update the drawing to reflect this. The Architect's note will be removed and revised to allow for the accepted channel. We further confirm that such a channel will protect the foundation and base of the walls from the effects of erosion. The channel will be made up of 'grass blocks' and a concrete benching around the building. Effectively any storm water will be caught by the channel behind the unit and fall to both sides where the channels direct the flow towards the lower terrain in front of the dwelling. The front will have the concrete benching and the 'grass blocks' facing downwards away from the front walls. The latest revision shows this re-aligned.

Item 3

At present there is a feeling amongst the professional team that there is no foundation to this building. The first step will be to verify this. If there is no foundation we will have to underpin, and if there is we will check its' condition to verify stability. Therefore the need for underpinning will first have to be verified and as such has been noted on the foundation plan. The method statement by the foundation plan addresses this comment, but to further clarify we confirm that the underpinning will be



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carried out systematically as per the numbers indicated on the plan and noted in note number 1 of the methodology. We further confirm that this underpinning will be carried out all around the building, and will add this as a note under the methodology. It is understood that no work would be carried out on this unit without permission from SAHRA, therefore no probing was carried out to determine the foundation status. We stand by our solution as it is more than adequate for a building of this size.

Item 4

The first comment regarding the possibility of using roof members to stabilise the structure is addressed under item 5. We respond to parts 4.a.i. and 4.a.ii. here, which refer to the use of reinforcing bars into the mortar joints of the walls.

Firstly item 4.a.i. refers to the strength of existing material at the proposed 'sites'. The existing material on either side of any given crack will be considered to be sound and have a nominal strength of similar blocks. The cracked portions have already failed as they could not handle the tensile forces exerted by the movement of the structure. Hence the need for the reinforcement bars, which will be embedded in the mortar joints only. The reinforcement will be placed 50mm into the mortar joint and caulked in with mortar. Any blocks that are totally damaged will have to be replaced with new blocks, which are available.

Secondly item 4.a.ii. refers to how the reinforcement will be made to negotiate the corners of the building. The bar chosen i.e. Y10 is a high tensile bar but relatively malleable by hand. The exact dimension required on site can easily be bent on site by hand and made to fit exactly to the building corners. In the areas where reinforcement is going to be used the contractor will have to first expose the mortar joints by removing some plaster. Then the contractor will cut a groove in the joint up to 50mm deep. The joints must then be washed clean and the reinforcement placed into the joint, followed by caulking the mortar in the joints. The localised area where the plaster was removed must then be made good. We hasten to add here that this intervention will not necessarily guarantee the long term stability of the unit, but will most certainly assist towards controlling the stresses in the building.

Item 5

The possibility of using the existing roof structure to stabilise the building is a non starter due to the fact that all the rafters are rotten. We have recommended that the roof structure be removed and re-instated with the replacement of all rotten and damaged members. This will include the replacement of sheets as necessary. The idea of pinning the rafters to the blocks, could work only if the blocks were solid, which is not the case here. Even if we pinned, this would only affect the top course of blocks and therefore be of localised use only. The top course would also have to be filled and made solid. To reiterate, the use of the existing rafters for support will not be feasible, as they are all rotten and clearly so in the photographs.

The replacement rafters may be pinned to the top course. Due to the use of blocks, each block will have to be filled with mortar to make the top course solid. Should there be any movement the top course will be held in place by the rafters, but the course below might still crack, due to outward movements, hence no guarantee. We

will be happy to incorporate this as part of the interventions to extend the life of the structure, but with no guarantees.

Item 6

Cracks will be opened to determine the extent and type of cracking. The Engineer will then confirm the type of remedial measures to be carried out. At present the cracks all appear to be of a similar nature, therefore we have recommended the generic approach of "stitching" the cracks with reinforcement bars. Nominal cracks will be dealt with by using expanded steel mesh in the mortar or by crack filler if minor. The major cracks will have to be dealt with the understanding that some blocks will have failed and need replacement. The same type of block is still easily available, so replacement will not be a problem.

Item 7

Although this may be an Architectural issue, we as a professional team understand that all windows, doors and related items will be serviced and repaired with the least amount of intervention and with the intention of portraying the building as it was.

Conclusion

To conclude we would like to emphasise that this dwelling is in a poor state and that all our interventions, as minimalistic as possible, are aimed at preserving the building. We are therefore also prepared to meet with the SAHRA approved Engineer, preferably on site, to come to some agreement towards achieving the best possible result. We believe that the Engineer has not been to site to assess the actual condition of the building and also together we could come up with an acceptable solution for the preservation of this unit. Even after all these interventions we cannot guarantee the structural integrity of the structure as if it was a new building, but only guarantee that it will be conserved for some time into the future and with ongoing maintenance will last as a monument to the humility of the man who lived there, i.e. Mr. O. R. Tambo.

Yours faithfully



Samad Khalpey

For ILISO Consulting