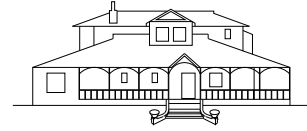


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OUR REF.: 18498

YOUR REF.:

5th April 2007

Corporate Sure
% Thomas & Associates
P.O. Box 440
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Attention : Gavin Thomas

Dear Sir,

**STORM DAMAGE : BALLITO : 19 AND 20 MARCH 2007
SUNTRAP, DRIFTWOOD, LA PARIDIS, BOULDER BAY, TONTIKI,
FRINTON ON SEA, VALLEN LODGE, THE BOULDERS AND
BALLITO MANOR COMPLEXES : CLAIM NUMBERS : TBA**

We refer to our discussions and meetings with the several parties to date regarding the storm damage that has occurred to several complexes in the Ballito area. Since the damage occurred ongoing appraisals of the extent of the damage to individual complexes is being made and we have liaised with you regarding the structural aspects of the repairs. We refer to our joint inspection on the 4 April 2007 of the most severely damaged properties that had been identified with respect to the structural aspects. Set down below are our preliminary comments in this matter.



1. BACKGROUND

- 1.1 Extraordinary waves caused wide scale damage along the coast on the 19 and 20 March 2007. The cause of the storms have been widely speculated in the press. We are informed that the damage had very little to do with high spring tides, or the much publicised 18.6 year alignment of the Earth, Moon and Sun. The problem was very powerful and unusual storms at sea that drove up the height of waves to 8 to 12 m, the highest waves recorded along this part of the coast for at least 23 years that occurred at the same time as the spring tides. The weather bureau reported to lay the blame for the flooding and destruction of property on an intense cut off low pressure system - the same type of weather phenomenon that caused the September 1987 floods in Durban and the Laingsberg floods of January 1981. It is reported that cut off lows often lead to very high coastal winds speeds as well as wave swells that hit the coast at odd angles, causing more erosion.
- 1.2 The storm seas caused widespread damage to the coast in the Ballito area. In general the high seas have eroded material away from in front of the properties destroying the stormwater and sewer services in the process as large amounts of sand have been eroded away. The erosion of the sand by the high seas in front of the units varies but in most places has caused scars between 2 and 12 m deep to form. The high seas have damaged the interiors of many units and undermined foundations of complexes.
- 1.3 Corporate Sure have many properties on risk in the area and surveys are in progress to define the scope of the problem. The recent inspection was undertaken after many such inspections and was with particular reference to the structural aspects of the complexes.
- 1.4 We are informed that the local authority has formed task teams to address the destruction of the stormwater and sewerage services that included several pump stations. The restoration of these services either as short term emergency measures or as revised long term measures is considered essential. Without exception all the properties that were inspected on the 4 April 2007 have had their stormwater and sewer connections destroyed and there is no alternative means to restore the services until the local authority has attended to their problems. It is not known what the official view of the local authority is regarding the continuing occupation of complexes that are unlikely to have sewer connections restored in the short term.

- 1.5 We have consulted with an environmentalist practitioner following comments made at a meeting convened by the local authority regarding the environmental aspects. We enclose herewith for your records e-mail correspondence setting out the procedures regarding directives that have been issued by the Department of Agricultural and Environmental Affairs regarding emergency repairs and repairs that are considered as a long term solution. Whether these directives will be applied rigidly in the long-term when the practical implications of the procedures are realised is not known. The fundamental situation is however that "hard" long term solutions are not likely to be approved. The implication of this is that one cannot assume that one would be permitted to restore the structures in a similar manner to that which existed prior to the storms.

2. OBSERVATIONS

- 2.1 Plans of the complexes are in the process of being obtained and our inspection was undertaken without the benefit of referring to the plans and our comments regarding the structural integrity of the complexes are based on a visual appraisal of the situation. These could be amended if and when structural drawings of the foundations of the complexes are obtained.
- 2.2 Our appraisal of the situation does not include the internal damage to most of the units caused by waves and high seas through the interiors of the complexes. The extensive damage to the interiors are being assessed separately. Most of the units where damage has occurred have had temporary timber boards installed.
- 2.3 The complexes that are considered to have suffered the most damage that are included in your portfolio are listed above and the observations made at each of the complexes are listed below.
- 2.4 **Suntrap Complex**
- 2.4.1 This complex has four storeys above ground floor and the sea has eroded the beach up to the front face of the structure. All the services have been destroyed and at present there is an oversteep bank in close proximity to the front of the building. The unit at the northern end had steps and retaining walls around a pool. These structures have been completely destroyed whilst damage to the northern side boundary wall has also occurred.

The complex is assumed to have been founded on strip footings. The foundations of screen walls retaining material between units have been undermined. The erosion of the beach in front of the units extends closest to the structure at the northern end.

2.4.2 Plate Numbers 1 to 6 enclosed herewith summarise the damage at the time of our inspection.

2.5 Driftwood

2.5.1 The damage to this complex is mainly to the front boundary structure that consisted of the steel palisade fencing and a toe retaining wall. There is evidence of dry stack blocks having been used in conjunction with the boundary wall as well but this may be part of the boardwalk that was constructed by the local authority. Once again all services have been destroyed.

2.5.2 Plate Numbers 7 and 8 enclosed herewith summarise the damage at the time of our inspection.

2.6 La Paridis

2.6.1 All stormwater and services at the front of the complex had been destroyed as well as screen walls and steps. The erosion of the beach extends closest to the complex at the southern end where Units 5 and 6 are situated. It is assumed that the foundations to the front units have been founded using normal strip footings where the erosion extends to the front face of the structure at the southern end. Steps at the centre of the complex leading down to the beach have been destroyed.

2.6.2 Plate Numbers 9 to 11 enclosed herewith summarise the damage at the time of our inspection.

2.7 Boulder Bay

2.7.1 The units along the front single storey structure is assumed to have been founded on normal strip footings. The erosion of the beach extends up to the structures and extensive damage has occurred within the units and the structures themselves at the southern end. All the services have been destroyed.

2.7.2 Plate Numbers 12 to 15 enclosed herewith summarise the damage at the time of our inspection.

2.8 **Tontiki**

2.8.1 Although the grass banks in front of the unit are largely intact wave damage has occurred within the units. The complex is assumed to have been founded on strip footings and there are no apparent structural problems caused by the storms. All services connecting to the local authority system had been destroyed.

2.8.2 Plate Numbers 16 and 17 enclosed herewith summarise the damage at the time of our inspection.

2.9 **Frinton on Sea**

2.9.1 The ground in front of the units had been eroded to varying degrees but the grass banks are largely intact with the services destroyed. No structural damage was observed. The interior of the units were damaged by wave action

2.9.2 Plate Numbers 18 to 20 enclosed herewith summarise the damage at the time of our inspection.

2.10 **Vallen Lodge**

2.10.1 The ground in front of the complex has been eroded to the varying degrees with parts of the grass banks still intact. No structural damage was observed but the interior of the units have been damaged by wave action.

2.10.2 We note that Unit 1 at the northern end has a feature screen wall that has settled and rotated away from the main structure. This is considered old damage that would have existed prior to the recent storms. The braai structure at the front porch has also settled away from the main structure and is also considered damage that would have existed prior to the storm.

2.10.3 All services connecting to the local authority system had been destroyed.

2.10.4 Plate Numbers 21 to 25 enclosed herewith summarise the damage at the time of our inspection.

2.11 The Boulders

2.11.1 This is a multi-storey complex that is likely to have been founded on piles. No structural damage was observed but the interiors of the ground floor units have been damaged by wave action. The erosion of the beach has not endangered the structure but there are local areas where slight erosion alongside screen walls between individual units were noted. The screen walls were butt jointed to the main structure and old slight movement had occurred prior to the recent storm.

2.11.2 All services connecting to the local authority system had been destroyed.

2.11.3 Plate Numbers 26 to 29 enclosed herewith summarise the damage at the time of our inspection.

2.12 Ballito Manors

2.12.1 This is a new complex nearing completion and we understand that it is not covered by your policy as the units have not yet been transferred to individual owners. The developer/ contractors were in the process of restoring sand in front of the complex that had been eroded away.

2.12.2 Plate Numbers 30 and 31 enclosed herewith summarise the damage at the time of our inspection.

3. RECOMMENDATIONS

3.1 General

3.1.1 Much depends on the outcome of environmental reports that are necessary regarding the reinstatement of the damage in the long term. The structures that existed prior to the damage may not necessarily be permitted to be reinstated by the authorities. We have therefore approached our recommendations on the basis of proposing emergency measures to safeguard the structures in terms of the directives issued by the relevant authorities. The cost of such measures would be determined and included in the cost of damage quantified by a quantity surveyor using the plans of each complex. There are likely to be delays following the procedures

regarding the long-term reinstatement of the damage and this approach would permit the damage to be quantified and settled in an equitable manner as soon as possible. The possibility of delays with regard to the reinstatement of the stormwater and sewer reticulation system by the local authority is another factor to be considered.

- 3.1.2 Extensive damage to fixtures has been caused by the waves through many of the units and if there is subsequent structural damage identified during the detailed assessment of individual units then we will advise further.
- 3.1.3 We have consulted with specialist contractors regarding the installation of underpinning and jacked piles to safeguard the structures and can liaise with the quantity surveyor appointed to assess the value of the emergency damage. We await your instructions in this regard.

3.2 Suntrap

- 3.2.1 On the basis that the structure has been founded on strip footings we are of the opinion that jacked piles need to be installed along the front face of the structure where the eroded bank is closest to it. We estimate that between 8 and 10 piles 3 m long would be required to be installed at regular positions along the front of Units 6 and 16. The screen retaining wall whose foundations have been undermined and exposed should be underpinned using mass concrete.
- 3.2.2 The extensive damage to the front retaining wall and pool structure that has been destroyed must be assessed by referring to the plans. This applies also to the damaged boundary walls and other dry stack retaining walls and miscellaneous structures that existed at the front of the complex as well.
- 3.2.3 We recommend that the structural drawings of the complex be obtained as a matter of urgency to determine the depth at which the expected strip footings have been founded. This applies particularly to Units 6 and 16 and the units above. In the event that it be confirmed that spread footings at a relatively shallow depth had been used in the construction of the complex then we recommend that Units 6 and 16 as well as the units above be vacated until the temporary jacked piles have been installed. In the event of it being established that the complex had been founded on piles then we would review these recommendations. We understand that plans are to be obtained from the Trustees next week.

3.3 Driftwood

3.3.1 This complex may continue to be occupied as the damage is restricted to structures along the front boundary.

3.4 La Paridis

3.4.1 The erosion of the beach extends close to the front face of Units 5 and 6. We estimate that 12 underpinning jacked piles are required at representative positions to maintain the structural integrity of these units. We estimate that each pile would be 2 m long.

3.4.2 We recommend that Units 5 and 6 be vacated until the jacked piles have been installed.

3.5 Boulder Bay

3.5.1 Units 8 and 9 and possibly 7 have been extensively damaged. We recommend that the most practical method of repair would be to demolish and rebuild each of these structures completely. These units should not be occupied.

3.6 Tontiki

3.6.1 There are no structural issues at this complex. The reinstatement of internal damage and the restoration of the services is required.

3.6.2 The complex may continue to be occupied.

3.7 Frinton on Sea

3.7.1 There are no structural issues at this complex. The reinstatement of internal damage and the restoration of the services is required.

3.7.2 The complex may continue to be occupied

3.8 Vallen Lodge

3.8.1 There are no structural issues at this complex. The reinstatement of internal damage and the restoration of the services is required.

3.8.2 The complex may continue to be occupied

3.8.3 The old settlement and rotation of the screen wall and the settlement of the braai area has not been caused by the erosion of the material from the beach at the front of the complex.

3.9 **The Boulders**

3.9.1 There are no serious structural issues at the complex. Movement has occurred at old construction joints between the screen walls and the main structure. The reinstatement of the internal damage and the restoration of the services is required. When the interior is reinstated redecoration is required and the butt joints can be reformed and painted as part of the redecoration. The slight erosion alongside some of the screen walls is considered minor and has not affected the foundations.

3.9.2 The complex may continue to be occupied.

3.10 **Ballito Manors**

3.10.1 This complex is likely to be of academic interest only but the developer/contractor is apparently in the process of restoring material lost by the erosion of the sea.

4. CONCLUSIONS

4.1 The above recommendations are based on our visual appraisal of the situation following a detailed site inspection on the 4 April 2007. We recommend that the situation should be monitored continually and in the event that there be further damage from inclement weather, particularly due to the destruction of the stormwater services, then we be called in to review our findings.

4.2 Our comments regarding the continued occupation of complexes is based on the assumption that the local authority permits the buildings to be occupied prior to the restoration of the sewer lines.

We trust that our preliminary comments are of assistance and await your further instructions in this matter.

Yours faithfully

DRENNAN, MAUD & PARTNERS

R.D. COLLYER Pr.Eng.

Encls. Plate Numbers 1 to 31
Renee Royal and DAEA correspondence

cc. Ballito Estates Attention : Barbara Shingler

/cr