

ROTORUA DISTRICT COUNCIL

6587074
ME045039ABE

Ref

17th December 1987
..... 19

DISTRICT INSPECTOR
INTERNAL MEMORANDUM TO

RE: SUBDIVISION - AQUARIUS DRIVE
.....

Please find attached a report on filling for the above subdivision.

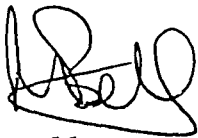
The filling which is being encountered on this stage of the subdivision has been placed for many years (maybe 12 years ago with the original earthworks).

The conclusion of the Investigating Consulting Engineer is that the area tested is suitable for normal residential development with standard foundation construction in accordance with normal acceptable engineering practice.

However, from the report, it can be seen that the consolidated fill is underlain by a layer of topsoil and the cut area also includes areas of fine wet sand and silty sediment.

It should be noted that ground levels on the whole of this subdivision, including the previous stage at the foot of the Aquarius Drive hill, have been contoured and shaped in order to provide protection to the house sites, from the adjacent Waiawhero Stream. There should be no excavation of the surface to provide house sites. I have noticed that this has already been done in a minor way in Gemini Place.

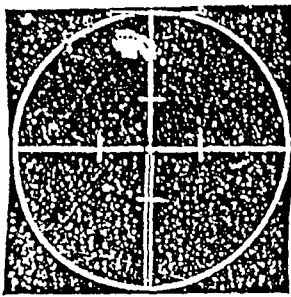
Would you please arrange for this information to be placed on the relevant Property Files.



A. Bell
Senior Design Engineer

Engineers

Engineers



MARTIN McCAULAY MORTON LTD

REGISTERED SURVEYORS CIVIL ENGINEERS TOWN PLANNERS

ROTORUA
QUADRANT HOUSE
77 HAUPAPA STREET
P O BOX 878
TELEPHONE (073) 477-840
FAX (073) 476-191

TE PUKE
KING'S BUILDING
77 JELICOE STREET
P O BOX 301
TELEPHONE (075) 737-717

OPOTIKI
PROFESSIONAL CHAMBERS
ELLIOTT STREET
P O BOX 74
TELEPHONE (078) 58-127

KAWERAU
SUITE 5
60 DUNGLAW STREET
TELEPHONE (0763) 3985

DIRECTORS:
LS MARTIN
Dip Surv, M N Z I S, M N Z P I, M P M I,
REGISTERED SURVEYOR,
TOWN PLANNER

A W R McCAULAY,
M N Z I S
REGISTERED SURVEYOR

A M MORTON
B E (Hons) A I P E N Z,
REGISTERED CIVIL ENGINEER

ASSOCIATES:
R E GARSIDE
Dip Surv, M N Z I S
REGISTERED SURVEYOR

C J FINK
Dip Surv, M N Z I S
REGISTERED SURVEYOR

J R LEWIS,
B Sc, M N Z I S
REGISTERED SURVEYOR

CONSULTANTS:
THORN
EQ VALUER

G R GILLESPIE,
A N Z I V
REGISTERED VALUER

32263/10

6 August 1987

Carter Holt Harvey Ltd
C/- Dagg & Thorn
Registered Surveyors
P O Box 395
NAPIER

ATTENTION: Mr K Thorn

Dear Sir

re: AQUARIUS DRIVE ROTORUA - SUBDIVISION
YOUR REF: 87/185

Further to your letter of 24 July and our telecom of 3rd inst we confirm that we have undertaken foundation tests as requested on the proposed Aquarius Drive Subdivision.

We report as follows:

(i) Location

Testing was restricted to within the area outlined on your plan included with your instruction to proceed. Our plan 32263/10, Sheet 1, indicates each of the 12 test sites within that envelop.

(ii) Tests

Twelve bore holes, generally to 2.3 or 2.4m, were drilled with a 300Ø mechanical auger.

Scala penetrometer ground bearing strength tests were undertaken adjacent each bore hole.

Test sites were chosen in accordance with existing scheme plan layouts on proposed sections, i.e. testing was not undertaken within the carriageway of Aquarius Drive or the reserve areas.

(iii) Bore Results

Tests 1 - 6 indicated various depths of fill (.8m at No 6 and approximately 1.0m at No's 1 - 5).



(iii) Bore Results (cont'd)

The fill layer was hard, well compacted, pumice loam in holes 1 - 4 with less compacted and darker coloured loam (i.e. some brown earth contamination) in holes 5 and 6.

Below the fill in holes 1, 2 and 3 there was a 200mm layer of natural ground/topsoil material, fairly compact.

The water table for holes 1 - 6 was at about 2.0m below ground level.

Tests 7 - 12 were in natural ground with no indication of fill. However, the levels of different strata (e.g. fine sand or pumice layers) indicated that these areas had been subject to cut (i.e. material had been borrowed from these areas: probably for the fill on the other side of Aquarius Drive).

Generally the material in holes 7 - 12 was fine pumice sands, coarse pumice and moist silt. The latter occurred in holes 8, 9, 10 and generally at a depth of 1.5m or more below ground level.

The water table for holes 7 - 12 varied between 1.7m (hole 12) below ground level to not located (holes 8, 9).

(iv) Scala Penetrometer Results

Tests in the compact fill layer (sites 1 - 4) indicated ground bearing strength (g.b.s.) values of 150KPa or greater. The g.b.s. values for underlying layers (including the topsoil at original ground level) were generally around 200KPa.

Tests at sites 5 and 6 were reasonably similar to No's 1 - 4 but had g.b.s. values less than 100KPa within the top 1.0m for No 5 and 0.5m for No 6.

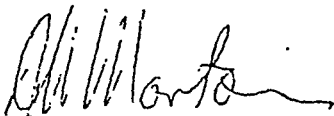
Of the remainder (No 7 - 12) site 10 had the worst g.b.s. values (around 150 KPa for the top 1.0m and then around 70 KPa below 1.0m i.e. in a fine wet sand and silty sediment layers).

Other sites tested at 160KPa or better to the end of each test (at 1.6m).

(v) Conclusions

In our opinion the bores and g.b.s. tests indicated the area tested is suitable for normal residential development (compatible with NZS 3604 and NZS 4203) with standard foundation construction in accordance with normal acceptable engineering practice.

Yours faithfully
MARTIN McCAULAY MORTON LTD



A M Morton
Registered Engineer

