

05 December 2022

Marlborough District Council  
PO Box 443  
**Blenheim 7240**

Dear Sirs,

**Rose Manor Residential Subdivision – Stages 9A Fill Report and Certificate**  
**Our Ref: 7756-S9A-Fill Certificate-01**

SMART ALLIANCES Ltd have conducted verification testing and hereby certify the fill for Rose Manor Residential Subdivision Stages 9A, comprising allotments 129 through 133 and Lots 138 through 142. Fill plan 15143 - CF01 – ABO is attached.

Fill depths vary across the residential lots from between 0mm to 300mm. The fill areas were stripped of topsoil down to silty/gravel base and structural fill imported and compacted in layers. A 150mm layer of topsoil was laid as finishing layer. A minimum of four (4) Scala Penetrometer tests were conducted at each of the proposed allotments to show compliance and test results are attached.

The results of the penetrometer testing indicated some variability in soil bearing resistance across the sections, with 300kPa (ultimate bearing capacity) achieved at depths ranging from 50mm to 1000mm below ground level. The results further show that an ultimate bearing capacity of 200kPa was generally found at depths in excess of 150mm across the site.

On the basis of the foregoing, it is considered that the site is suitable for the proposed residential developments and for construction on specific engineer design foundation systems. It is recommended that an ultimate bearing pressure of 200kPa is used for designing the foundations.

The site is potentially susceptible to liquefaction and as such, any proposed residential building should be designed for vertical settlements of up to 15mm under Service Limit State (SLS) conditions and up to 50mm under Ultimate Limit State (ULS) conditions. The risk of lateral spread is considered minor and no specific provision for this is deemed necessary in the foundation design other than that required by the building code.

An example of a residential foundation solution may include, but not limited to, a TC1 type raft foundation system designed for 200kPa (ultimate bearing capacity) with 300mm of compacted hardfill under the slab. The thickness of the gravel hardfill would be dependent on the lot specific ground conditions.

Yours faithfully



**Richard Evans**  
Chartered Professional Engineer  
Smart Alliances Ltd

## STATEMENT OF SUITABILITY OF EARTH FILL NZS4431:1989

**ISSUED BY:** Smart Alliances Ltd

**TO:** Deluxe Property Group Ltd

**TO BE SUPPLIED TO:** Marlborough District Council

**IN RESPECT OF:** Rose Manor – STAGES 9A

**AT:** 68 Old Renwick Road, Blenheim

The earth fill shown on the attached plan No: **15143-CF01-AB0** have been placed in compliance with the terms of NZS4431.

While the work was in progress it was inspected by Tim Smit and reviewed by Richard Evans, a Chartered Professional Engineer **216668** employed by Smart Alliances Ltd, PO Box 546, Blenheim.

During the work, the site was inspected periodically to ensure compliance with the Standard. Suitable testing has been conducted on the work and the results are attached to this certificate.

The Lots affected by the fill are shown on the attached plan: 15143-CF01-AB0

In the opinion of Smart Alliances Ltd, the filled areas are deemed suitable for development of residential buildings on specific engineer design foundation systems designed for 200kPa (ultimate bearing capacity). The designs should allow for liquefaction induced vertical settlements of up to 50mm (ULS).

I believe on **REASONABLE GROUNDS** that the earth fill described above has been placed in accordance with the terms of NZS4431 and is suitable for development as detailed above.

This certification does not remove the necessity for the normal inspection and design of foundations as would be made in natural ground.

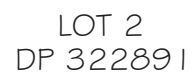
The Design firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$250,000.00

The Design Firm is a member of ACENZ ☒ Yes ☐ No

Signed By: **Richard Evans** on behalf of **SMART ALLIANCES LTD**

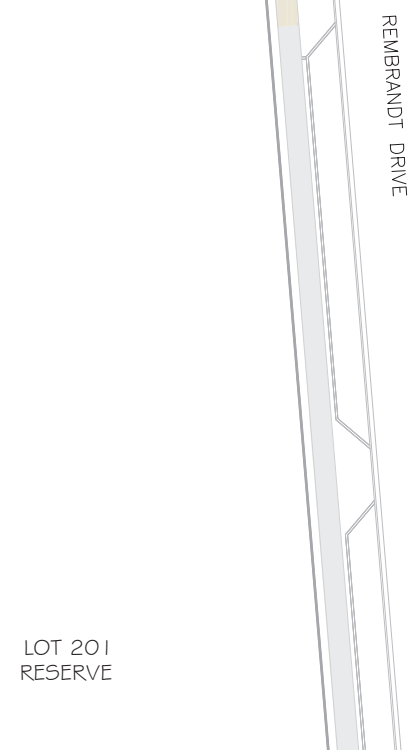
Date: 5 December 2022

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## FUTURE STAGE

## FUTURE STAGE



LOT 142

LOT 141

LOT 140

LOT 139

LOT 138

ARLINGTON CLOSE

LOT 129

LOT 130

LOT 131

LOT 132

LOT 133

LOT 48

LOT 110

LOT 111

LOT 112

LOT 113

142 / 129













141 / 130

140 / 131

139 / 132

138 / 133

CUT/FILL COLOUR LEGEND

| CUT FROM |        |   | FILL FROM |       |   |
|----------|--------|---|-----------|-------|---|
|          | TO     |   |           | TO    |   |
|          | >600mm |  | 0mm       | 200mm |  |
| 600mm    | 500mm  |  | 200mm     | 300mm |  |
| 500mm    | 400mm  |  | 300mm     | 400mm |  |
| 400mm    | 300mm  |  | 400mm     | 500mm |  |
| 300mm    | 200mm  |  | 500mm     | 600mm |  |
| 200mm    | 0mm    |  | >600mm    |       |  |



**Ayson**  
Survey+

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CLIENT

DELUXE PROPERTY  
GROUP LIMITED

|     |                  |          |    |
|-----|------------------|----------|----|
|     |                  |          |    |
|     |                  |          |    |
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|     |                  |          |    |
|     |                  |          |    |
| ABO | FOR INFORMATION  | 16/11/22 | HM |
| REV | REVISION DETAILS | DATE     | BY |

|          |             |
|----------|-------------|
| DESIGNED | TS          |
| DRAWN    | 16/11/22 HM |
| CHECKED  | MR          |
| SCALE    |             |
| A1       | 1:250       |
| A3       | 1:500       |

|         |        |
|---------|--------|
| PROJECT | STAGES |
| 8 & 9   |        |

|          |                             |
|----------|-----------------------------|
| LOCATION | REMBRANDT DRIVE<br>BLENHEIM |
|----------|-----------------------------|

Rose Manor  
MARLBOROUGH

|       |                             |
|-------|-----------------------------|
| TITLE | ASBUILT CUT/FILL<br>PLAN 9A |
|-------|-----------------------------|

|                       |
|-----------------------|
| MDC REF               |
| U210083.01–U210083.04 |

|            |
|------------|
| JOB NUMBER |
|------------|

15143

|       |       |
|-------|-------|
| SHEET | ISSUE |
| CF01  | ABC   |

