

Committee:	Housing Sub Committee				
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SOIL CONTAMINATION AT COUNCIL HOUSING COMPLEXES

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The purpose of this report is to update councillors on the proposed remediation of six Council housing complexes.

CONTEXT

Over a number of years, the 30 unit Council owned Lyn Christie housing complex in Wildwood Avenue Wainoni, has presented subsidence problems, which have caused ongoing tenancy/repair issues.

In August 2001, the Property Unit commissioned Montgomery Watson Harza to undertake testing and analysis of ground conditions at the site in order to better plan future asset management options.

The results of that testing including the discovery of contaminants, prompted the Council to undertake further soil analysis on nine other Council Housing properties either known to be ex landfill sites or known to have potential ex landfill type problems due to historic records and anecdotal information. Six of those nine sites tested positively for soil contaminants including PAHs and/or heavy metals. A list of sites is shown in Appendix 1.

EXECUTIVE SUMMARY

The Council has remediated the soil contamination at the Lyn Christie housing complex. This has cost \$211,118. A sum of \$815,000 was put aside in the accounts for the year ending June 2002 to deal with contamination issues on the six remaining Council sites identified.

The Medical Officer of Health from Crown Public Health and Environment Canterbury (Ecan) have been heavily involved throughout the investigation/consultation/remediation process.

Council officers are now developing a work programme for the remediation of the six remaining Council sites identified as being contaminated. This work is intended to be completed to a similar standard as that at Lyn Christie, and will be done in consultation with Crown Public Health and Ecan. A communication plan will also be put in place to ensure that all affected parties, particularly Council tenants, are kept informed.

BACKGROUND

Lyn Christie Place

This is an EPH housing complex comprising 30 units built in 1974 on land owned by the Council and formally filled by others prior to Council ownership. The housing development attracted a low interest Government loan on the basis that the foundation design was approved by the then Department of Health. The perimeter foundation walls of the units are piled with the unpiled concrete floor slab resting on the perimeter foundation.

Over the years, settlement of the land has occurred with slumping of the floor slabs (to varying degrees) and resultant structural damage to the internal walls with gaps between the skirting and floor, jammed doors etc.

As part of the housing asset management plan development, the Property Unit commissioned environmental scientists Montgomery Watson Harza to undertake some exploratory drilling to better ascertain ground conditions (causing the slumping and property damage) with a view to considering best long term asset maintenance/redevelopment options.

The tests confirmed that the complex was built on approximately two metres of fill and that the surface soils contained levels of Polycyclic Aromatic Hydrocarbons (PAHs) above recommended guidelines. This information presented a number of issues, including:

- (a) The health and safety of the tenants; and
- (b) Options to protect the built infrastructure from further subsidence.

Health and Safety of Tenants

Dr Mel Brieseman, Medical Officer of Health, Crown Public Health was immediately brought in to give ongoing advice/assistance with public health matters.

A soil remediation plan was agreed with Crown Public Health and Ecan, which would minimise human contact with the soil. This comprised: removing soil in all ornamental and vegetable gardens to a depth of 0.5m and replacing the contaminated soil with clean soil over an impervious membrane material; installing an automatic irrigation system on all lawns to mitigate soil dust nuisance during the summer months.

This work was been completed at Lyn Christie at a cost of \$211,118 or \$7,037 per unit.

Protection of Built Infrastructure

Whilst the soil remediation provides an acceptable environment from a health and safety perspective, the initial testing was to investigate options to provide a sustainable built environment given the subsidence.

Two options were investigated:

- (i) Removing part of the structure and piling the floor slab in a similar manner to the foundation walls.
- (ii) Injection of foam type quick setting resin (commercial form of Selleys "Space Invader") through the floor slab to raise the slab and to provide ongoing support to the slab.

Option (i) proved to be very expensive (estimated \$25,000 per unit x 30 units) and would have been very disruptive in terms of tenant management.

Option (ii) was less expensive at \$6,193 per unit; proven over the last 25 years though never used by the Council; least disruption to tenants. This option was implemented over the site with varying degrees of floor levelling required at each unit.

EXPANDED SOIL TEST PROGRAMME

Given the test results at Lyn Christie, it was deemed prudent to test other Council housing sites that were either built on ex Council landfills or had historic/anecdotal records of being built on "informal" landfill or similar sites (e.g. ex gas works) that had the potential to test positive for contamination.

The sites tested were:

Sandilands
Captain Thomas Courts
Avonheath Courts
Louisson Courts
Walsall Street
Shoreham Courts



Contamination identified

Weaver Courts
Angus Courts
Hennesy Courts



Clear of Contamination

Contaminants present in the six housing complexes listed above included heavy metals (lead, copper, mercury) and / or arsenic, and / or PAH's with Sandilands presenting the most difficult challenge.

On the advice of Crown Public Health, tenants of tested properties have been advised to wear gloves whilst gardening; to not eat vegetables grown on their properties; to minimise opportunities for children under 5 to be exposed to contact with soil.

THE WAY FORWARD

If the Council is to continue using the housing complexes for residential tenancies, it is obliged to remediate those sites to comply with its obligation under the Residential Tenancies Act.

In consultation with Montgomery Watson / Crown Public Health / Ecan, officers will now revisit the original test results for the properties listed in Appendix 1; ascertain what additional "confirmation" tests will need to be done on which sites; ascertain a priority ranking for the six balance sites; develop a work programme and communication plan for the remediation works required.

A Council Housing Officer (John MacDonald) will project manage tenancy related issues over the six sites and a Council Property Asset Officer (Callum Logan) will lead the overall remediation project, with an emphasis on the remediation works proper.

Based on the Lyn Christie experience we have estimated total future remediation costs for the six balance housing sites at \$815,000; this has been reported to the Committee / Council through the monitoring report for the year ending June 2002, as an unbudgeted cost in that year, (although the work is yet to be done).

It should be noted that these estimates do not include structural upgrades which are not anticipated.

SUMMARY AND CONCLUSIONS

Officers have considered all issues associated with contamination of soil at seven Council owned housing complexes; officers have consulted widely including Crown Public Health and Ecan.

Funding to remediate the balance six contaminated housing sites listed in Appendix 1 has been allowed for in the accounts for the year ending June 2002, funded from the Housing Development Fund, and not a cost on rates.

Crown Public Health has confirmed that remediation of the balance public housing sites to a similar specification to Lyn Christie is acceptable to it.

Staff

Recommendation: That the information be received.

Chairman's

Recommendation: +

Appendix 1 – Testing of Council Housing for Soil Contamination

Complex	Location	Reason Tested	Contamination Present
Lyn Christie Place	Wainoni (Pegasus Ward)	Ex-landfill	Yes
Capt. Thomas Courts	Sumner (Ferryroad Ward)	Ex-gasworks	Yes
Walsall Street	Riccarton (Spreydon Ward)	Ex-landfill	Yes
Louisson Courts	Opawa (Heathcote Ward)	Ex-landfill	Yes
Avonheath Courts	Redcliffs (Ferryroad Ward)	Ex-landfill	Yes
Angus Courts	Sydenham (Heathcote Ward)	Ex-car yard	No
Shoreham Courts	New Brighton (Pegasus Ward)	Ex-landfill	Yes
Weaver Courts	Sockburn (Riccarton Ward)	Ex-landfill	No
Sandilands	Aranui (Ferryroad Ward)	Ex-landfill	Yes
Hennessy Place	Spreydon (Spreydon Ward)	Ex-landfill	No