

Addendum - Guiding requirements for effective ongoing Lead exposure management

Education and Care Facilities Design
Standards



Government
of South Australia

Department for Education

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Overview

The purpose of this document is to guide requirements, design standards, and strategies that must be incorporated and implemented when designing new, or refurbishing existing, department infrastructure within the City of Port Pirie to ensure effective management and minimisation of Lead exposure risks.

The guidance contained within this Addendum shall be considered and where applicable and practicable, applied by key stakeholders such as architects, designers, builders, contractors, schools, and preschools when designing new or refurbishing existing Department for Education (department) infrastructure.

Scope

This Addendum applies to all proposed and existing department infrastructure present across the Port Pirie community and includes:

- Airdale Primary School
- John Pirie Secondary School
- Mid North Education Centre
- Port Pirie Community Kindergarten
- Port Pirie West Children's Centre and Port Pirie Child Care Centre
- Port Pirie West Primary School
- Solomontown Kindergarten
- Solomontown Primary School
- Risdon Park Primary School
- Risdon Park South Kindergarten

This document does not provide guidance on the following:

- characterisation of Lead exposure risk associated with the proposed location of new department infrastructure, for example, existing site contamination (soil) and risks associated with site specific weather conditions and positioning of assets with respect to existing Lead exposure sources (Port Pirie Lead Smelter)
- managing Lead exposure risk of individuals involved in the construction or refurbishment of department infrastructure
- managing Lead containing paint that may be present within existing department infrastructure

- managing the disturbance and distribution of historical Lead sources that may be present within ceilings, roof and wall cavities, carpets, plant and fixtures during department building refurbishments.

Relevant background and context around the health risks associated with Lead can be found at [SA Health: Lead in Port Pirie](#).

Building design requirements

The following requirements describe priority considerations when designing new, or refurbishing existing, department infrastructure to ensure effective management and minimisation of Lead exposure risks (especially in key exposure groups such as children and pregnant women):

- Where site contamination exists (soil), design to minimise Lead contamination being disturbed (vehicles, foot traffic) and potentially contaminating external (play equipment, furniture) and internal (floors, desks, shelving) fixtures.
- Use and install building, external playground and landscaping materials, fixtures, fittings and furniture that minimise the potential for Lead contaminated soil and dust to be trapped and accumulate, and where applicable are easy to clean.
- Use HVAC systems and air intake dust filtration systems to ensure that external sources of Lead contamination do not enter and accumulate within department infrastructure.

Building design

Ceilings and roof spaces

Ensure that ceiling and roof spaces are effectively sealed from the external environment to ensure that prevailing weather conditions cannot allow Lead contaminated dust and soil to enter and settle on internal surfaces.

Where practicable, ensure that all insulation materials present in ceiling and roof cavities are covered with a smooth flat surface to aid in easy removal of accumulated dust.

As mentioned within the existing design standards, due to cleaning maintenance limitations, always avoid exposed roof trusses and ledges at ceiling level which can collect dust.

Flooring

All flooring materials that can potentially capture and accumulate dirt, such as carpet and flocked material, should, where possible not be installed. Where reasonably practicable ensure that flooring is made of resilient floor materials such as linoleum, vinyl and rubber.

Should carpet be required, additional cleaning requirements will need to be followed to ensure lead dust that accumulates within the carpet pile is removed regularly.

Mats

Contamination control mats (tacky or sticky mats) that can be easily cleaned should be considered for use at main entrances to buildings to capture Lead containing dust, dirt and debris entering through contaminated foot traffic and equipment wheels.

When considering the use of internal floor mats, use mats that can either be washed or easily HEPA vacuumed.

Doors

Doors at main entrances to department buildings must not contain ventilation grilles. Doors must be designed to automatically close via mechanical door closers (with no hold open function) or electronic automatic doors.

Windows

External windows to learning areas and occupied spaces must not be operable or relied upon to provide natural ventilation.

Building services

Heating, ventilation and air-conditioning (HVAC)

Department buildings **must not** be designed to rely wholly or partly on natural ventilation (operable windows) to regulate fresh air intake and internal temperature.

All new buildings must have a mechanical HVAC system installed that provides fresh air intake to all areas of the building, such that the building is always maintained under positive pressure.

Area specific temperature can be controlled by the installation of additional wall mounted split systems that can circulate air within a space.

Air filtration

All external air entering the building through the mechanical HVAC system must be filtered with a MERV10/11 (G5/G6) Filter.

Fixtures, fittings, equipment and furniture

Importance shall be given to selecting fixtures, fittings, equipment and furniture that are not made of porous materials that can potentially trap and accumulate Lead containing dust. For example blinds must be selected in preference to material curtains. Vinyl and leather furniture must be selected over those made of fabric.

Fixed joinery (bookshelves, cupboards) should minimise horizontal surfaces where practicable to avoid the accumulation of dust (particularly tops of inaccessible areas such as book shelves, and lockers). This can be achieved by installing vertical panels (bulkheads) to ceiling height.

Loose furniture such as tables, chairs, desks and stools should all be of simple design such that surfaces can be easily cleaned (wet wiped or vacuumed). Furniture with intricate designs that are difficult to clean should be avoided.

Bean bags and floor cushions should be made of non-porous materials that can be easily wet wiped.

Site works

Paths, roads and parking

Pedestrian and bicycle paths should be made of pavers, concrete or bitumen and in the case of car parks, should be made of asphalt. This is to ensure that the soil below cannot be disturbed and generate dust during dry conditions by pedestrians, cyclists and moving vehicles. This also allows Council road sweepers to be used to keep surfaces clean from dust and mud.

Landscaping

Where historical soil contamination exists, there must be a minimum of 100mm fresh topsoil.

All external areas that are not sealed by way of pavers, concrete, bitumen or asphalt should be covered with vegetation and lawns.

Vegetables and fruit trees **must not** be planted in soils containing known historical Lead contamination.

Playgrounds and external play areas

Where new playgrounds or nature play spaces are established, materials being used should be non-porous, easy to wipe down, and where practicable, easily hosed down. Adequate drainage should be considered when designing such areas to assist with water runoff.

When designing external shelter areas, solid roof material must be used. Connect downpipes to underground stormwater system.

Site fixtures

Outdoor seating and tables must be of simple design, non-porous and easily wet wiped or hosed down.

Rainwater

Rainwater **must not** be used as supplemental drinking water or used to water or wash edible fruit and vegetables.

Facility handover

Cleaning

Prior to the building being commissioned and handed back over to the department, a thorough clean of all internal surfaces using either wet wiping or an industrial HEPA filtered vacuum cleaner must be completed in all areas, in particular those that will be accessible to children and staff.

HVAC

A comprehensive test of the HVAC system configuration must be undertaken to ensure that the correct air intake filters have been installed and that all internal areas are under positive pressure. Ensure that all critical HVAC spares have been identified and included in the sites preventative maintenance system. Ensure that critical spares are accessible (either on site or locally accessible) should the HVAC system fail.

Windows

Ensure all windows are not operable.

Ongoing management

Cleaning program

A comprehensive cleaning program must be implemented that assures the routine cleaning of all internal high traffic areas, horizontal surfaces, and external play equipment and furniture. Cleaning

should be undertaken by wet wiping, mopping, or vacuuming of surfaces.

Only industrial HEPA filtered vacuum cleaners should be used.

Brooms, brushes and high-pressure air **must not** be used for cleaning purposes.

HVAC maintenance

Periodical checks must be undertaken to confirm the effective operation of the sites HVAC system to ensure that only filtered air enters the building and that all areas remain under constant positive pressure.

Revision record

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