

Department of Education and Child Development (DECD)

Perimeter security fencing around schools South Australia

The Client

The Department of Education and Child Development (DECD) is the state government department in South Australia responsible for providing public primary and secondary schooling. It is responsible for the education of some 180,000 students, employing 13,500 teachers and early childhood educators working at nearly 710 pre, primary and secondary schools across the state.

DECD and its Asset Services Security Team, is responsible for managing all aspects of security at DECD sites, including the provision of resources and support to school administration, as well as contributing to the management of security related capital projects. They also bare the considerable task of trying to combat the threats to property and people in the school environment, and handling the growing governmental importance and profile of security measures including security fencing. Further, there is an accompanying community expectation for the government to remedy these threats by delivering tangible measures on or ahead of time, on cost and without incident. At the same time, with substantial recurring capital project there is increasing desire for smarter and more efficient contracting on the part of DECD to extract greater value for money on its spend.

The Security Team also have the ongoing task of trying to educate and inform the school administration of the many factors that contribute to security risks and of the practical measures that can be taken to reduce the risk of damage and the incidence of other anti-social behaviour on school grounds. It also faces the challenge of trying to best accommodate the needs and wants of many school sites competing for limited funding and liaising with other relevant stakeholders such as local councils and sporting groups.

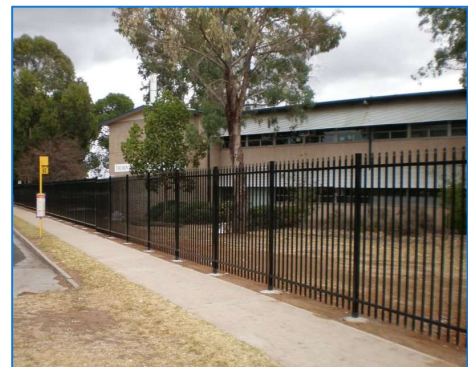
Project Background

There are many features about the usage patterns and layout of schools that make them a preferred target for theft, arson, graffiti and vandalism. This form of crime has been found to be predominantly opportunistic and to occur particularly outside of school hours and in school holidays.

Properly specified and installed security fencing is a strong physical and psychological deterrent to potential intruders, and as one aspect of environmental design, has proven very effective in reducing the frequency of these attacks. At the same time it aesthetically renews the appearance of the site. Prior to the installation of the new powder coated tubular steel security fencing, the majority of the school sites either had no perimeter fencing or 900mm high chainwire fencing that provided a low level of security.



Before: Freemont Elizabeth. The existing 900mm high chainwire fabric fence offers little security.



After: Freemont Elizabeth. 2100mm high security fencing dramatically increases the security of the site.



Graffiti in schools results in significant financial and social costs.¹⁷

The installation of security fencing at high risk school sites is a high profile government initiative and represents a clear demonstration to the wider community that the asset owner and operator (in this case DECD) is serious about protecting these valuable community assets and ensuring schools are safe spaces free of disruption.

The range of drivers for school perimeter security fencing include:

- Prevent unauthorised access outside of school hours resulting in: graffiti, in particular spray painting tags on buildings; lighting of fires; theft of school property; breaking windows; removing bolts from playground equipment; damaging outdoor furniture; and destroying plants and gardens.
- Creating a “safe community for students” and a “safety perception in the eyes of families intending to enrol their children”⁷.
- Prevent the school grounds being used by members of the community as a thoroughfare (shortcut) during and after school hours.
- Control the access/egress points of parents to the school during school hours, including in relation to child protection.
- Control contact between students and non-students resulting in anti-social behaviour during school hours.
- Allow ‘lock down’ and emergency evacuation procedures to be implemented effectively.
- Control the movement of pedestrian and vehicles in and around the school.



‘Tagging’ of school classrooms⁶.



‘Tagging’ of school whiteboards⁶.



‘Tagging’ of school honour board⁶.

The range of negative impacts associated with poor perimeter security include the:

- Financial cost to repair or replace damaged or stolen assets.
- Opportunity cost of the client not being able to spend the funds more constructively elsewhere.
- Disruption to student learning.
- Emotional stress to the school community.

In terms of the severity of the problem, in 2007 it was reported¹ that arson, vandalism and theft at schools had left South Australian taxpayers with a repair bill of nearly \$140 million over the previous 18 years. That since, 1988, the total cost of repair work for damage and replacement of equipment caused by vandalism and theft was \$92.6 million, and that over the same period, the total cost of replacing material and equipment as a result of fire and fire losses was \$45.6 million. In 1988-89, the cost of repairs and replacement was \$5.7 million, growing to \$14.2 million in 2005-06. At the time the Education Minister conceded the government was “playing catch-up on school security over the last five years”.

In May 2007 the South Australian government announced² it would spend \$5 million under the school safety program and that 30 schools at greatest risk of after hour’s arson and vandal attacks would have perimeter security fencing installed. At the time the then Education Minister Jane Lomax-Smith was reported as saying:

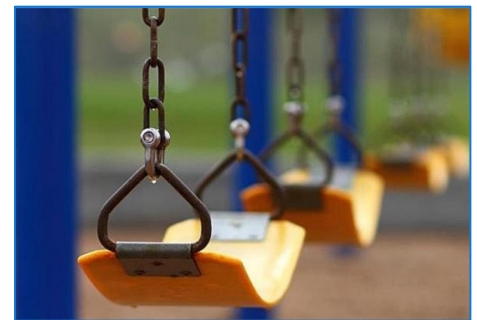
“Experience has shown that security fencing is highly effective in reducing after hour’s criminal activity on school grounds.

“Incidents at two suburban primary schools dropped from more than 20 per month to an average of less than one incident per month after fencing was erected.

Arson attack at Munno Para Primary School (17/11/08).

Estimated damage \$50,000.

"It's caused a significant dislocation for our students, a sense of loss, loss of their work and their work place, and their relationship to how they see themselves as part of the school community." School Principal



At one school vandals unbolted play equipment posing a serious threat to the students.

“A high school, which had an average of more than two serious break and enter and theft incidents per month, has not had a single incident since fencing was erected nine months ago.

“The incident rate at two metropolitan schools has reduced dramatically since fences were installed.”

“We expect our new security fencing program to save tens of thousands of dollars in years to come and that is money that can be reinvested into the education of South Australia’s children.”

In June 2008, a further \$1.1M was allocated increasing the number of schools to be fenced to 35 and the total program value to \$6M up to 2011.

To illustrate the financial cost of vandalism on a school base: in a 2 month period in 2008, a fire was deliberately lit at Madison Park Primary School (20/10/08) causing an estimated \$50,000 damage; at Munno Para Primary School (17/11/08); and Modbury South Special School (26/11/08) causing more than \$200,000 damage. In 2011 it was reported that the top ten vandalism claims in 2010 cost DECD \$840,000

These attacks not only have a huge financial cost but also a dramatic social cost and are highly regressive to community development. In 2013, the then Education Minister was reported¹⁰ as saying that “school communities suffered with every vandalism attack, the damage may only seem structural but it affects the spirit of the entire school community.”

In terms of the social and non-financial impact on individual schools of this sort of crime:

- In May 2013 R-12 Paralowie Public school was subject to a vandalism assault with over 200 ‘tags’ painted on school buildings. The following day school principal said publically⁸ the incident was “very upsetting” for teachers, parents and particularly students.
- Elizabeth Vale Primary Principal Grant Small said “There was extensive graffiti, theft and vandalism that would happen every weekend,” he said. “What it meant was the community couldn’t develop their pride in the school.”
- West Lakes Shores Primary School Principal Sue Toone, was reported¹³ saying “It costs the taxpayer a significant amount of money and one of the advantages is it will allow us to do things like planting vegetables gardens and fruit trees” and “One of the things we get frustrated about is if we plant our annuals to try and make the place look beautiful, you come back the next morning and they are gone”, and “The kind of vandalism to the playground is the sort of vandalism that poses a risk to children’s safety and it’s disappointing for everyone.
- Port Lincoln Principal wrote¹⁵ described the negative impact on the “emotional wellbeing of staff and students” and “significantly disrupting learning”.



School security fencing has reduced vandalism in SA schools by 67% on average and nearly 100% in a number of schools.

In 2015 it was reported that fencing in combination with letter drops and patrols has seen the cost of vandalism decrease from \$10.1 million in 2008 to \$2.66 million in 2014. That the installation of school perimeter security fencing had reduced damage to school property by an average of 65 per cent and, in one case, vandalism had been stopped altogether.

The Education and Child Development Minister Susan Close was reported saying “Since 2006, the State Government has invested \$10.9 million in security fencing at schools across the state, resulting in a noticeable decrease in crime”. The department’s executive director of infrastructure, Ross Treadwell, said security fences have proven to be an “effective tool” in combating vandalism. We estimate that the State Government has saved over \$30 million in reducing the cost of repairs. This assumes the cost of vandalism would have remained at the 2008 levels, save for the security fencing being installed. Based on the data in the previous 4



South Australian Education Minister Susan Close, at Blackwood Primary in 2015 reporting on the effectiveness of the school security fencing installed at the school by Bluedog.

years it is arguable the annual damage bill would have increased so in effect increasing the return on investment in the fencing. This is not to mention the direct and indirect social cost of vandalism and other anti-social behaviour that has been reduced or eliminated with the fencing.

In terms of specific school sites:

- Elizabeth Vale Primary principal Grant Small said a fence installed at the school last year had virtually wiped out vandalism, reducing the annual damage bill from more than \$150,000 to “next to nothing”.
- Blackwood Primary R-7 Principal, Phil Garner, is reported as saying “Security wise, vandalism has actually decreased by 100%, as has graffiti”.¹⁰
- “Vandalism reduced by more than 90 per cent after the construction of a security fence at Elizabeth Downs Primary School. “There were 30 vandalism incidents at the school in the seven months leading up to the construction of the fence last December.”¹²
- “In the same period, neighbouring Elizabeth Grove Primary School has had a reduction in vandalism of 45 per cent, with no incidents recorded in the past two months.”¹²

As reported on Ten Eyewitness News (25/5/15), South Australian Education Minister Susan Close, visited Blackwood Primary School to inspect the school security fencing installed by Bluedog Fences in 2014 and announced a further \$1 million spend on upgrading school security for the coming 12 months. Ten News reported¹⁶ that “The Reception to Year 7 school used to be a regular target of vandalism from graffiti to ripped out garden beds, but since this fence was installed a year ago the problem is almost gone.” School Principal, Phil Garner is reported as saying “Security wise, vandalism has actually decreased by 100%, as has graffiti”. The Minister reinforced the cost and social saving of school security fencing, saying “We used to have to spend about \$10 million a year fixing up schools after vandalism attacks, we’re now seeing a real decline to around \$2 million”.

In 2016, the government announced a further \$1 million would be spent to install security fences at a further additional six state school, bringing the total of schools fenced to 85.

Project Statistics

Location:	55 schools across South Australia
Product:	Bluedog SecuraTop [®] tubular security fence and gate system.
Style:	2100mm high powder coated tubular steel.
Length:	~22,500m incl. nearly 700 gate leaves.

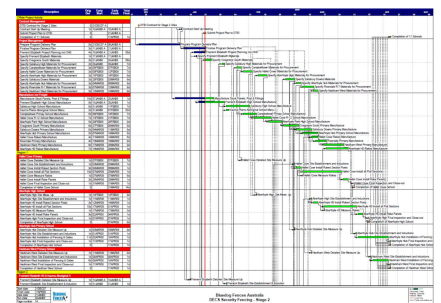


An example of the site plan used for a school site.

Project Description

In mid 2007, Bluedog was approached by DECD seeking an expression of interest from Bluedog to tender for an upcoming batch (Round 2) of schools in Adelaide. At that time Bluedog was an approved supplier to the NSW Department of Education and a contractor under a five year schedule of rates period contract. Due to Bluedog’s good performance under that contract we were recommended to DECD.

Bluedog was conscious that the DECD personnel who are involved in this program, had many competing demands on their time. Accordingly, they were looking to *monitor* the performance of the Contractor, not have to *manage* them. They rightly wanted to focus instead on optimising the efficiency of the program by resolving issues that may result in cost or delay in a pre-emptive fashion. Allocation of resources to manage the Contractor could quickly amount to a large cost sink that dramatically increases the true cost of the program.



Gantt charts are often used to manage the larger programs of work.

At the time, and since, the Government of South Australia views the use of Facilities Manager (FM) Service Providers as a key tool in improving the maintenance, management and improvement of government assets. To this end the government, engaged Spotless to provide services in the

Adelaide Metropolitan Region B and C from 1 July 2006 to 30 June 2015. The benefits of the FM model are promoted as being “designed to improve the management of government assets, provide value for money and reduce maintenance and operating costs, create consistency in maintenance standards, improve forward planning and whole-of-life asset management.” Spotless Services was engaged by DECD to manage the majority of the fencing projects in the following 8 years.

The Tender called up the Code of Practice for the South Australian Building and Construction Industry 2003 (Code of Practice). The Code recommends that the industry should aim to achieve best practice in relation to:

- Value for money;
- Quality in all aspects of service, delivery and product;
- Occupational health, safety and rehabilitation (including the return to work of injured employees);
- Environmental management;
- Training, research and development;
- Employee qualification and skill levels;
- Equal opportunity for employment; and
- Completion of projects on time.

At the time of our first Tender and since, we have sought to demonstrate that we understand that from DECD’s perspective whole-of-life cost is a critically important consideration, as the cost extends beyond the initial capital outlay to include the “total cost throughout the asset’s life including planning, design, acquisition and support costs and any other costs directly attributable to owning or using the asset.” In our view, a key differentiator in whole-of-life cost versus upfront price, are proven and effective risk management systems (including project management systems) and product and installation quality. For instance, the increase in actual whole-of-life cost as a result of poor quality metal pre-treatment and resulting poor powder coating adhesion will rapidly erode any initial price saving, as will one serious OH&S incident as a result of poor safety planning. We have repeatedly indicated that we may not be offering the lowest Tender price for this program of works but to be offering the best value of money.

In this first Tender we highlighted that some 95% of the raw materials that would be supplied by Bluedog would be made in Australia, and a high portion would be made in South Australia. This included using Galvabond® precision tube from Orrcon steel. We also outlined our higher quality powder coating process and a 7 year warranty on the powder coating.

Bluedog was awarded Round 2 (8 school sites), Round 4 (15 sites), Round 5 (7 sites), Round 6 (11 sites). In addition, off the back of strong our performance we have successfully tendered for security fencing work at other DECD’s schools. This included the manufacture and installation of fencing in the APY lands in regional North West South Australia.

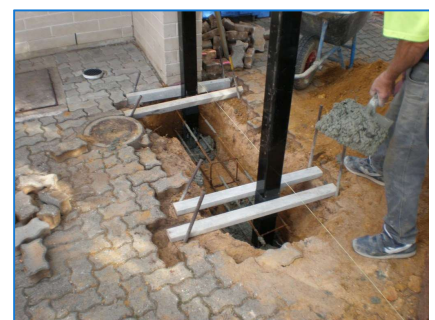
In 2015, we completed our 55 DECD school project at Windsor Gardens PS.



Contact with underground services was a constant threat and vacuum excavation was often used to expose detected services.



The schools are normally operational and therefore restricting access to the work area is critical.



Constructing steel reinforced concrete footing for a single gate and reinstatement of pavers around the posts.

Site specific Challenges

Over the course of the many projects completed at DECD’s sites, some of the notable site specific challenges included:

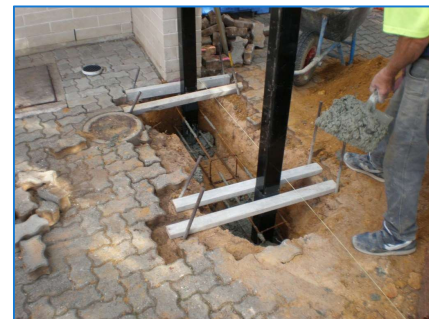
- The acceleration of works to suit the political milestone of an election. In one instance Bluedog was given a tight timeframe of 5 weeks to complete 3 schools (2,000m of fencing including 45 gate leaves).
- The acceleration of works to meet a financial year milestone. This involved the manufacture and installation of some 5,500 metres of security fencing over an 18 week period from award of contract.
- Managing the installation of fencing across up to four sites at the one time.
- Managing the logistics of mobilising to and working in remote regional locations.
- During the Building the Education Revolution (BER) there was significant disruption to the work program. In one instance, in the short period between a final scope being made of the site with the client and mobilising to site, a new building had been constructed where the new fence was intended to be installed. We accommodated many such changes to the scope over the period.
- Vandalism of equipment, theft of tools and verbal assault of workers.
- Working in close proximity and in tight access areas to underground high voltage and fibre optic.
- Working in close proximity to busy operational schools.
- Adelaide’s highly reactive soils meant that all gates included a steel reinforced strip footing joining the posts to prevent lateral movement affecting gate operation and improve longevity. This required excavation of a strip footing in concrete, paving and natural ground in high pedestrian and vehicle movement areas.
- Working at heights and in close proximity to high traffic roads.
- Excavation of rock.



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Constructing steel reinforced concrete footing for a single gate and reinstatement of pavers around the posts.

Innovation and added value

Over the course of the many projects completed, we can demonstrate a strong track record of innovation and value add. This resulted in outcomes that saved time, cost and were more functional. Some examples include:

- Developing a “Fence Installation Specification” and “Gate Installation Specification” with accompanying assembly drawings to guide fence installation.
- We provided DECD with a recommended tubular steel specification. This specification set out the minimum recommended quality characteristics to be used in the fencing. This specification was incorporated and continues to be used.
- We offered and had accepted the use of Denso Primer D + Ultraflex 1500 Bitumen. This bituminous tape is wrapped around the post where it meets the ground and protects the steel post from corrosion from the highly reactive soils. This product was functionally superior, achieved a neater aesthetic outcome and entailed cost savings for the client as compared to alternatives.
- We developed a heavy duty tapered and greasable roller bearing hinge that allowed the gate to swing 180 degrees back on itself. There was previously no similar product on the market. This superior hinge was used instead of the ‘dry’ butt hinge specified by the client. This improved design ensured improved ease of operation and extended the service life of the gates. This design was subsequently incorporated in the DECD school security fencing specification.
- Creating an audio-visual and written operational guide for the gates and locking hardware provided to the school at the completion of the job.
- Creating an audio-visual guide that explains the key aspects of the fence specification for the client to use in explaining the fencing program to stakeholders.
- Preparing a draft preventative maintenance program for the client.
- DECD specified an additional upright adjacent to the latch stile of gates to prevent the drop bolt being a climbing point. Instead we offered a piece of perforated metal welded to the gate to cover the locking hardware and prevent it being used as a climb point. This design was adopted by DECD.
- DECD’s design for letterboxes did not meet Australia Post or functional requirements. We worked with a local supplier to develop an aesthetically pleasing, secure, anti-climb letterbox solution that met all requirements.
- In numerous Tenders, we devised and offered the client various cost saving alternatives. For example, at Christies Beach Primary School we saved the client nearly \$20,000 by engineering posts to attach to an existing wall rather than replace the wall in its entirety.
- Including a detailed schedule of rates in our Tender to so that the client new in advance what the cost to make changes to the scope would be and making addressing variations a lot quicker and cooperative.
- Integrating the work with highly sensitive heritage structures. For example, at Woodville High School and Le Fevre School.



Bluedog proprietary Eternity® hinge specifically developed for client to allow gate leaf to swing back on itself.



Bluedog letter box designed to meet client requirements.

“A pleasure to do business with you. Andy is an excellent communicator. He listened to our needs, quickly addressed issues that arose to our satisfaction and was friendly and professional throughout. We are highly satisfied with our new fence and the process that delivered it. Thank you.”

School Principal, 2013

Safety performance

Our safety systems have been 3rd party audited to AS4801, and we have ongoing audits by Spotless Services as part of being one of its approved suppliers. Our very good systems have been implemented since starting work for DECD in 2008. The main accidents and incidents have been contact with underground services (no injuries) and minor lacerations. We have had two accidents involving members of the public working with no serious injury resulting. The summary to date is:

- LTI's: 2
- MTI's: 6
- FATI's: 10

In the course of the 2007-2008 program, we experienced first hand how a seemingly low risk situation can quickly turn into a very serious near miss. The incident occurred when a female (who as it turned out was pregnant) entered the work area and fell crossing a 900mm high paramesh. Fortunately for all concerned no serious harm was done. However, it is a stark illustration of the need for high level vigilance for safety management especially when working on an operational school site.

Following this event, Bluedog implemented its standard procedures including having our internal system's manager do an accident and incident investigation, a safety audit of all work sites, hold a specific tool box meeting with all install crews, and prepared a report for DECD. Further, we conducted an internal review of relevant processes and made further improvements especially the steps to be taken in defining a work area. Bluedog's site safety plans identify and establish alternative access points prior to closing existing thoroughfares to pedestrian traffic.

Normal sequence of work

- Preparation of tenders or quotations.
- Preparation of construction programs.
- Site establishment - Safety induction, risk assessments and underground services location. Set up material compound (where required);
- Establish work areas – Cordon off work sites with high visibility safety bollards / para mesh barriers and safety signage;
- Define the bill of materials required and specify to the factory.
- Manufacture of materials and freight to site.
- All staff to complete various inductions.
- Erection of safety barrier fencing around the work area.
- Location of underground services, including the use of vacuum excavation.
- Demolish and remove existing fencing and gates.
- Excavate new post footings, place and set posts to height.
- Assembly the fence and gates.
- Complete associated civil works.
- Complete Inspection and Test Plans.
- Demolition and removal of existing fencing;
- Carry out gate strip and post installation and swing gates;
- Site finalisation – general site clean up, final inspection of panels for alignment and rigidity of fastenings.



Site audits are regularly conducted on site to monitor WHS and quality management.



Unload of bulk materials on site from semi-trailer direct from our factory.



Specialist digging equipment is essential to efficient construction.



A site storage compound on site is often used to secure materials restrict access.

References

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